



## Wilson Family Forest Preservation Project Design Document

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## INSTRUCTIONS

*Project Operators must complete and submit this Project Design Document (PDD) to request credits. City Forest Credits (CFC) then reviews this PDD as part of the validation process along with all other required project documents. An approved third-party verifier then conducts verification.*

*The Protocol Requirements below are a list of eligibility requirements for informational purposes which are also found in the CFC Tree Preservation Protocol Version 11.40, dated February 7, 2022.*

*Project Operators will enter data and supporting attachments starting on page 6 under Project Overview where you find “[Enter text here]” as thoroughly as possible and provide numbered attachments for maps and other documentation (ex: 1 – Regional Map).*

## PROTOCOL REQUIREMENTS

### **Project Operator (Section 1.1)**

Identify a Project Operator for the project. This is the entity or governmental body who takes responsibility for the project for the 40-year duration.

### **Project Duration and Project Implementation Agreement (Section 1.2, 2.2)**

Project Operator must commit to a 40-year duration and sign a Project Implementation Agreement. This is a 40-year agreement between the Project Operator and City Forest Credits (the “Registry”) for an urban forest carbon project.

### **Location Eligibility (Section 1.3)**

Projects must be located in or along the boundary of at least one of the following criteria:

- A. “Urban Area” per Census Bureau maps; see <https://www.census.gov/geographies/reference-maps/2010/geo/2010-census-urban-areas.html>
- B. The boundary of any incorporated city or town created under the law of its state;
- C. The boundary of any unincorporated city, town, or unincorporated urban area created or designated under the law of its state;
- D. The boundary of any regional metropolitan planning agency or council established by legislative action or public charter. Examples include the Metropolitan Area Planning Council in Boston, the Chicago Municipal Planning Agency, the Capital Area Council of Governments (CAPCOG) in the Austin area, and the Southeastern Michigan Council of Governments (SEMCOG)
- E. The boundary of land owned, designated, and used by a municipal or quasi-municipal entity for source water or watershed protection. Examples include Seattle City Light South Fork Tolt River Municipal Watershed (8,399 acres owned and managed by the City and closed to public access);
- F. A transportation, power transmission, or utility right of way, provided the right of way begins, ends, or passes through some portion of A through D.

### **Ownership or Right to Receive Credits Eligibility (Section 1.5)**

Project Operator must demonstrate ownership of property and eligibility to receive potential credits by meeting one of the following:

- A. Own the land and potential credits upon which the Project trees are located; or

- B. Own an easement or equivalent property interest for a public right of way within which Project trees are located and accept ownership of those Project trees by assuming responsibility for maintenance and liability for them; or
- C. Have a written and signed agreement from the landowner, granting ownership to the Project Operator of any credits for carbon storage, other greenhouse gas benefits, and other co-benefits delivered by Project trees on that landowner's land. If the Project Area is on private property, the agreements in this sub-section must be recorded in the public records in the county where the property is located. The recordation requirement can be satisfied if the agreements specified in this sub-section are contained in a recorded easement, covenant, or deed restriction on the property.

#### **Demonstrate Tree Preservation (Section 4.1)**

The Project Operator must show that the trees in the Project Area are preserved from removal by a recorded easement, covenant, or deed restriction (referred to hereafter as "Recorded Encumbrance") with a term of at least 40 years. This action is referred to as the "Preservation Commitment." This Recorded Encumbrance must be recorded not later than 12 months after Registry approval of the Project's Application.

#### **Demonstrate Threat of Loss (Section 4.2, 4.3, and 4.4):**

The Project Operator must show that prior to the Preservation Commitment:

- Project trees were not preserved from removal through a Recorded Encumbrance or other prohibitions on their removal,
- The Project Area was:
  - In a land use designation that allowed for at least one non-forest use. Non-forest uses include industrial, commercial, transportation, residential, agricultural, or resource other than forest, as well as non-forest park, recreation, or open space uses.
  - Is not in an overlay zone that prohibits all development. Examples include critical areas or wetland designations.
- The Project Area met one of the following conditions:
  - Surrounded on at least 30% of its perimeter by non-forest, developed or improved uses, or
  - Sold, conveyed, or had assessed value within three years of preservation for greater than \$8,000 average price per acre for the bare land, or
  - Would have a fair market value after conversion to a non-forested "highest and best use" greater than the fair market value after preservation in subsection 4.1, as stated in a "highest and best use" study from a state certified general real estate appraiser in good standing

#### **Additionality (Section 6)**

Additionality is ensured through the following:

- Prior to the start of the project, the trees in the project area are not protected via easement or recorded encumbrance or in a protected zoning status that preserves the trees.
- The zoning in the project area must currently allow for a non-forest use
- The trees in the project area face a threat or risk of removal or conversion out of forest

- The Project Operator records in the public land records an easement, covenant, or deed restriction specifically protecting the trees for the project duration of 40 years or 100 years (40 or 100 years depending on the protocol version)

### **Quantification for Credits (Section 11)**

The full Protocol describes the following steps for carbon stock and soil carbon quantification in detail:

1. Stored carbon stock present in Project Area (Section 11.1)  
Estimate the biomass stock present and adjust for uncertainty to calculate the “Accounting Stock”. This can be done using the US Forest Service General Technical Report NE-343 tables, on-site inventory of some live trees with i-Tree methods and tools, or an on-site forest inventory
2. Areas expected to remain in trees after potential development (Section 11.2)  
Calculate the fraction of the Accounting Stock that likely would be emitted as a result of development, to calculate “Avoided Biomass Emissions”
3. Claiming additional credit for growth (Section 11.3)  
The Project Operator may elect to also account for ongoing growth of trees within the Project Area after Project Commencement
4. Quantification of soil carbon (Section 11.4)  
Calculate “Avoided Soil Carbon Emissions” caused by conversion of soils to impervious surfaces in the Project Area
5. Deduction for displaced development (Section 11.5)  
Apply the deductions in Section 11.5 and Appendix B to Biomass and Soil Carbon calculations to adjust for development and emissions that would be displaced by the preservation of the Project Area (leakage deductions). This will reduce the creditable tonnes of Avoided Biomass Emissions and Avoided Soil Carbon Emissions to adjust for displaced development
6. Quantify Co-Benefits (Section 11.6)  
The Project Operator will calculate co-benefits separately from CO<sub>2</sub>(e). The Registry will supply a spreadsheet template based on their climate zone, and will provide values for rainfall interception, reductions of air compounds, and energy savings.

### **Social Impacts (Section 12)**

The Project Operator will describe how the Project impacts contribute towards achievement of the global UN Sustainable Development Goals (SDGs). The Registry will supply a template to evaluate how the Project aligns with the SDGs.

### **Attestation of No Net Harm and No Double Counting (Section 5)**

The Project Operator will sign an attestation that no project shall cause net harm and no project shall seek credits on trees, properties, or projects that have already received credits.

### **Validation and Verification by Third-Party Verifiers (Section 13 and 14)**

Project compliance and quantification must be verified by a third-party Validation and Verification Body approved by the Registry.



### **Issuance of Credits to Project Operator (Section 7)**

Ex-post credits are issued after the biomass is protected via a recorded encumbrance protecting the trees. Issuance is phased or staged over one and five years at the equivalent of 50 acres of crediting per year. This staged issuance reflects the likely staging of development over time if the project area were to have been developed.

After validation and verification, the Registry issues credits to the Project Operator based on the Project Area size:

- 50 acres or less: all credits are issued after validation and verification
- Greater than 50 but less than 200 acres: credits are issued in the equivalent of 50 acres per year
- Greater than 200 acres: credits are issued in equal amounts over five years

### **Credits for Reversal Pool Account (Section 7.3):**

The Registry will issue 90% of Project credits earned and requested and will hold 10% in the Registry's Reversal Pool Account.

### **Understand Reversals (Section 9)**

If the Project Area loses credited carbon stock, the Project Operator must return or compensate for those credits if the tree loss is due to intentional acts or gross negligence of Project Operator. If tree loss is due to fire, pests, or other acts of god (i.e., not due to the Project Operator's intentional acts or gross negligence), the Registry covers the reversed credits from its Reversal Pool Account of credits held back from all projects.

### **Monitoring and Reporting (Section 8)**

The Project Operator must submit a report every three years for the project duration. The reports must be accompanied by some form of telemetry or imaging that captures tree canopy, such as Google Earth, aerial imagery, or LiDAR. The reports must estimate any loss of stored carbon stock or soil disturbance in the Project Area.

## PROJECT OVERVIEW

**Project Name:** Wilson Family Forest Preservation Project

**Project Number:** 035

**Project Type:** Preservation Project (under the Tree Preservation Protocol – version 11.40, dated February 7, 2022)

**Project Start Date:** January 5, 2023

**Project Location:** Virginia Beach, Virginia

**Project Operator Name:** Mosaic Carbon LLC

**Project Operator Contact Information:** Colin Fraser, Conservation Accounts Manager

Email: [colin@firstearth.eco](mailto:colin@firstearth.eco)

Phone: 256-710-4225

### **Project Description:**

*Describe overall project goals as summarized in application (2 paragraphs)*

The Wilson Family Forest is 24.29 acres of mixed pine and hardwood forest bordered by residential development in Virginia Beach, VA. The aim of this project is to preserve remaining forest in a rapidly developing area. The City of Virginia Beach has a strong military presence and the associated demands for housing and commercial development have accelerated deforestation, exacerbating the ecological risks of climate change in Virginia's coastal plain. Forest preservation in the low-lying Tidewater region of Virginia is particularly important because of increasing flood risk due to sea level rise and a high water table.

Mosaic Carbon LLC is serving as the Project Operator for this project and recorded a restrictive covenant with the landowners, the Wilson family, to protect this forest from development for 40 years. Mosaic Carbon LLC and the Wilson family also signed an Agreement to Transfer Credits.

The property is zoned Agricultural 1 and 2 which allows for logging, agriculture, and low-density residential development. Ten acres of the Project Area is a 30-year-old sweetgum and loblolly pine forest and the remainder is a 90-year old oak-sweetgum forest. Preserving the forest will provide health and environmental benefits to residents such as improved air quality, increased shade and energy savings, and reduced stormwater runoff.

## LOCATION OF PROJECT AREA (Section 1.3 and 1.4)

### **Project Area Location**

*Describe where the Project Area is located and how it meets the location criteria.*

The Project Area lies within one parcel located inside the limits of the City of Virginia Beach, Virginia, an incorporated city. This meets the urban location criteria in Protocol Section 1.3B.

Address/property centroid: 36.78145167, -76.06824328

## Project Area Parcels

Jurisdiction / Location	Parcel Number	Parcel Acreage	Description / Notes
Virginia Beach, VA	1495-43-9093-0000	24.9 acres	24.29 acres of the parcel is included in the Project Area
		<b>Total</b>	<b>24.29 acres in the Project Area</b>

## Project Area Map

*Provide maps of the Project Area with geospatial location vector data in 1) pdf form and 2) any file type that can be imported and read by Google Earth Pro (example KML, KMZ, or Shapefile format). Maps should include relevant urban or town boundaries, legend, and defined Project Area.*

Geospatial location (boundaries) of Project Area

Filename: 1 - Wilson Family Forest Project Area.shp

Regional-scale map of Project Area

Filename: 2 – Wilson Family Forest Regional Scale Map

Detailed map of Project Area

Filename: 3 – Wilson Family Forest Project Area Map

## OWNERSHIP OR ELIGIBILITY TO RECEIVE POTENTIAL CREDITS (Section 1.5)

*Project Operator must demonstrate ownership of potential credits or eligibility to receive potential credits. If the Project Operator is not the same as the landowner of the Project Area, provide agreement(s) between Project Operator and landowner authorizing Project Operator to execute this project.*

### **Name of landowner of Project Area and explanation:**

Paul and Delores Wilson

Paul and Delores Wilson are the private landowners of the property, and Mosaic Carbon LLC is the Project Operator. Mosaic Carbon is a carbon development company based in Richmond, Virginia. The operating partners represent a combined three decades of experience in monetization of eco-assets that optimize landowner results and maximize ecological benefits. Mosaic Carbon has entered into an Agreement to Transfer Credits with the Wilson Family, signed on January 5, 2023. The Agreement allows Mosaic Carbon to register the Project with City Forest Credits to develop and sell carbon credits. Per Protocol Section 1.5C, notice of the Agreement to Transfer Credits was included in the restrictive covenant protecting the trees that was signed between the Wilson Family and Mosaic Carbon and recorded on January 6, 2023.

Specific language in the restrictive covenant giving notice of the transfer of credits is found in Section 4:

4. Transfer of Credits. The parties acknowledge and hereby give notice that the Owner previously transferred to the Project Operator all right, title, and interest in and to any Carbon Credits, including any potential carbon or other environmental credits generated by the Carbon Project. The Carbon Credits will be developed using protocols of the Registry. As the owner of the Carbon Credits, Project Operator shall have the right to develop, register with and sell the Carbon Credits, at Project Operator's sole risk and cost

*Filename:* 4 – Wilson Family Forest Deed

5 – Wilson Family Forest Agreement to Transfer Credits

6 – Wilson Family Forest Covenant

## **PRESERVATION COMMITMENT (Section 4.1)**

*Describe the Preservation Commitment terms and provide a complete copy of the recorded document. If Project Area does not have the same boundaries as Preservation Commitment, please state the reasons why.*

**Preservation Term (years applicable):** 40 years

**Date signed and date recorded:** signed January 5, 2023, and recorded January 6, 2023

**Preservation Commitment explanation:**

The Wilson Family and Mosaic Carbon signed a restrictive covenant on January 5, 2023 to protect the forest in the Project Area for 40 years. The covenant grants the Project Operator the right to enter the property, inspect the Project Area, and take any actions necessary to verify and enforce compliance with the restrictive covenant.

Specific language in the covenant that protects the trees includes:

1. *Removal of Trees.* The Owner shall not cut down, destroy, or remove trees located within the Forested Areas, except as necessary to a) control or prevent hazard, disease, or fire, or b) improve forest health, or c) comply with application laws, the Protocol, or any Registry requirements.
2. *Surface Alteration.* The Owner shall not alter the surface of the Forested Areas or place trash or debris within the Forested Areas, including, without limitation, the excavation or removal of trees, soil, sand, gravel, rock, peat, or sod except as necessary to promote or maintain forest or river health, fish habitat, or forest or land restoration projects, including without limitation the removal of noxious or invasive species, or b) promote or maintain the health and safety of the community such as to prevent landslides or hill collapse

*Filename:* 6 – Wilson Family Forest Covenant

## DEMONSTRATION OF THREAT OF LOSS (Section 4.2, 4.3, and 4.4)

*Describe the Project Area land use designation that allows for at least one non-forest use. Describe any overlay zones such as critical areas and their protection buffers, legal encumbrances, and any other pre-existing tree/forest restrictions that may have hindered removal of the Project Trees (in the pre-Preservation Commitment condition). Provide supporting evidence.*

### **Land use designation(s):**

The Project Area is zoned Agricultural District 1 (AG-1) and Agricultural District 2 (AG-2). Permitted uses per the AG-1 and AG-2 zoning regulations include agricultural and low-density residential development, both of which allow for tree removal. Historical imagery shows that 10 acres of the property were in agricultural use until at least 1982. A complete list of permitted activities for AG-1 and AG-2 are included in the attachment.

#### *File names:*

7 – Wilson Family Forest Zoning Map

8 – Wilson Family Forest Zoning Restrictions

### **Overlay zones or other restrictions:**

#### Naval Airspace Easement

There is a Naval Airspace Easement on the property, signed and recorded on December 14, 1979. The easement does not restrict the removal of trees. Paragraph 2e of the easement restricts the potential uses of the property, as described below. The list of permitted uses in the easement does not include residential or office space.

Specific language in the easement restricting permitted uses:

*Paragraph 2.e.* With the exception of pre-existing dwellings, the above-described property shall not be used for any purpose other than (1) industrial, defined as the use of machines to manufacture or assemble a finished product from unfinished material and the sale of the finished product for resale; (2) warehousing, defined as the use of open areas or buildings for the storage of goods; (3) auto parking; (4) cemeteries, excluding chapels and similar structures; (5) nonspectator recreational activities such as golf and riding stables, excluding clubhouses and similar structures; (6) mining, natural resource production and extraction; (7) agriculture (excluding mink); (8) forestry; (9) public roads and highways, public, public utilities and railroads; all of the above nine (9) purposes exclude the use of the property for retail sales to the consumer not for resale, and for office space not directly related to or required by the enterprises located on the property.

The Naval Airspace Easement also grants “the right to cut down, top, or trim all trees, plants, vines, and like obstructions [...] extending more than 130 feet above mean sea level.” There is no evidence that this has ever been enforced to date based on historical imagery or site visits to the forest. The elevation at the property is an average of 13 feet above sea level. The required clearance given the property’s elevation is taller than the predicted maximum height of the dominant species (loblolly pine, white oak, willow oak, black cherry, sweetgum, red maple) in the Project Area. Should this easement be enforced to reduce the tree height, this may be considered an avoidable reversal under the Preservation Protocol.

In such cases, per Protocol Section 9.1A, the Project Operator will deliver written notice to the Registry within 60 days of the potential Reversal. The Registry shall determine the number of credits reversed and require the Project Operator to provide replacement credits.

*Filename:* 9 – Wilson Family Forest Naval Airspace Easement

#### National Wetlands Index

Approximately 62% of the property is designated wetland by the US Army Corps of Engineers National Wetland Index. This designation does not affect the ability of a landowner to harvest timber but would require a special permit (under the Clean Water Act Section 404) to permit impervious development and new agriculture activities. Thus, the project operator has not claimed soil carbon on the portion of the property deemed wetland. See attachments 13 (wetland delineation map) and attachment 14 (an email from Peter Kube, Chief, Eastern Virginia Regulatory Section, USACE, confirming that no permit is required to harvest the trees).

*Filenames:* 13 – Wilson Family Forest Stand NWI Map  
14 – Wilson Family Forest USACE Statement

#### City of Virginia Beach Easements

A title search on the property identified two easements held by the City of Virginia Beach: a Utility Easement as well as a Variable Width Drainage, Impoundment, and Maintenance Easement. The two easements are dated January 21, 1997, recorded August 25, 1997. The easements do not restrict the removal of trees.

The Utility Easement is a 30' perpetual easement for the City of Virginia Beach to construct, reconstruct, alter, operate, and maintain utility facilities. The easement provides the City “the right to inspect the said easements and to cut and clean all undergrowth and remove other obstructions in and along the said easements”. The Project Area excludes the area covered by this easement.

*Filename:* 10 – Wilson Family Forest City of VB Easements and Map

The Variable Width Drainage, Impoundment, and Maintenance Easement is a perpetual easement granted to the City of Virginia Beach for the purpose of construction and maintenance of Stormwater Management Facilities. The easement provides the City “the right to inspect the said easements and to cut and clean all undergrowth and remove other obstructions in and along the said easements”. The easement covers 1.53 acres of land within the Project Area. The easement has not been enforced during the tenure of the current owners, which is 30 years, and there is no evidence of enforcement to date based on historical imagery or site visits to the forest. The City of Virginia Beach GIS Map does show stormwater facilities on the property boundary but not within the property or the easement area, and it appears that this easement was put in place for future planning purposes. Neither the owner nor the Project Operator are aware of any plans for stormwater management activities within the easement. The easement area covers 6.3% of the Project Area. Should the easement be enforced, Section 13 of the Project Implementation Agreement (PIA) signed by the Project Operator and the Registry allows the Project Operator to adjust or remove up to 10% of the land in the Project Area, provided the Registry agrees in writing and that the removal would not constitute a reversal under Section 9 of the protocol. If the City enforces the easement, and a reversal results under Section 9 of the Preservation Protocol, the

PO agrees that this will be an Avoidable Reversal and will compensate for it under Section 9. If the Project Operator compensates for any reversal from enforcement of the easement, the Project Operator may then adjust the Project Area under Section 13 of the PIA to remove the easement area.

*Filename: 10 – Wilson Family Forest City of VB Easements and Map*

**Threat of loss (Section 4.4 A, B, or C):**

*Describe which of the three conditions the Project Area meets and provide supporting evidence such as maps, sale or assessed value documentation, or appraisal information.*

The Project meets the threat of loss criteria in Protocol Section 4.4A because the Project Area is surrounded on 36.4% of the perimeter by non-forest, developed, or improved uses. Specifically, the property is bordered by residential lots.

*Filename: 11 – Wilson Family Forest Developed Perimeter*

Per the City of Virginia Beach Code of Ordinances, Appendix G, the Project Area is included in the Southern Rivers Watershed Management Plan and any development would require city approval; however tillage and timber harvest is not prohibited.

Per the City of Virginia Beach Code of Ordinances, Floodplain Ordinances, 16 acres of the Project Area is located in a floodplain zoned AE. Development of the Project Area would require city approval but Appendix K does not prohibit tillage or timber harvest.

In a conversation with Whitney McNamara, Environment planner III in the Wetlands and Shoreline Construction Team of the Virginia Beach Planning Administration Division on Feb 23, 2023, the Project Operator confirmed that the Property is under Special Flood Plain Restriction, which would not restrict clear-cut logging and conversion to agriculture under tillage.

*Filename: 12 – Wilson Family Forest Floodplain Maps and Ordinances*

## **ATTESTATION OF NO DOUBLE COUNTING OF CREDITS AND NO NET HARM (Section 5)**

*Complete and attach the following attestation: Attestation of No Double Counting of Credits and Attestation of No Net Harm. Provide any additional notes as relevant.*

Mosaic Carbon signed the Attestation of No Double Counting and No Net Harm on November 16, 2022.

*Filename: 15 – Wilson Family Forest Attestation of No Double Counting and No Net Harm*

## **ADDITIONALITY (Section 6)**

*Additionality is demonstrated by carbon projects in several ways, as described in the City Forest Credits Standard Section 4.9.1 and Tree Preservation Protocol.*

Project Operator demonstrates that additionality was met through the following:

- Prior to the start of the project, the trees in the project area are not protected via easement or recorded encumbrance or in a protected zoning status that preserves the trees
  - See Demonstration of Threat of Loss section above
- The zoning in the project area must currently allow for a non-forest use
  - See Demonstration of Threat of Loss section above
- The trees in the project area face some threat risk of removal or conversion out of forest
  - See Demonstration of Threat of Loss section above
- The Project Operator records in the public land records an easement, covenant, or deed restriction specifically protecting the trees for the project duration of 40 years or 100 years (40 or 100 years depending on the protocol version)
  - See Preservation Commitment section above

Taken together, the above elements allow crediting only for unprotected trees, at risk of removal, which are then protected by a project action of preservation, providing additional avoided GHG emissions.

Additionality is embedded in the quantification methodology. Projects cannot receive credits for trees that would have remained had development occurred, nor can they receive soil carbon credits for soil that would have been undisturbed had development occurred.

Mosaic Carbon signed an Attestation of Additionality on December 13, 2022.

*Filename:* 16 – Wilson Family Forest Attestation of Additionality

## CARBON QUANTIFICATION DOCUMENTATION (Section 11)

*Follow detailed instructions in the Protocol for conducting quantification and use the Carbon Quantification Spreadsheet to show calculations. Ensure that your requested credit issuance schedule (issuance dates) is accurate and complete in the spreadsheet. Project Operators should describe and appropriately reflect in their carbon quantification any and all planned future activities that may affect the percent canopy or carbon stocking in any way.*

### Summary numbers from Carbon Quantification Spreadsheet

Project Area (acres)	<b>24.29</b>
Does carbon quantification use stratification (yes or no)	<b>No</b>
Percent tree canopy cover within Project Area	<b>100%</b>
Project stock (tCO <sub>2</sub> e)	<b>4,753</b>
Accounting Stock (tCO <sub>2</sub> e)	<b>3,802</b>
On-site avoided biomass emissions (tCO <sub>2</sub> e)	<b>3,422</b>
On-site avoided soil carbon emissions (tCO <sub>2</sub> e)	<b>993</b>
Deduction for displaced biomass emissions (tCO <sub>2</sub> e)	<b>626</b>
Deduction for displaced soil emissions (tCO <sub>2</sub> e)	<b>301</b>
Credits from avoided biomass emissions (tCO <sub>2</sub> e)	<b>2,796</b>
Credits from avoided soil emissions (tCO <sub>2</sub> e)	<b>692</b>



Total credits from avoided biomass and soil emissions (tCO <sub>2</sub> e)	<b>3,487</b>
Credits attributed to the project (tCO <sub>2</sub> e), excluding future growth	<b>3,487</b>
Contribution to Registry Reversal Pool Account	<b>349</b>
<b>Total credits to be issued to the Project Operator (tCO<sub>2</sub>e)</b> <i>(excluding future growth)</i>	<b>3,139</b>

#### **GHG Assertion:**

Project Operator asserts that the Project results in GHG emissions mitigation of 3,139 tons CO<sub>2</sub>e issued to the Project.

#### **Approach to quantifying carbon**

*Describe general approach you used to quantify carbon (e.g. US Forest Service General Technical Report NE-343 Tables, inventory, other). Provide documentation.*

Carbon quantification was conducted per the methodology outlined in Protocol Section 11.1.A. The Project Operator used afforestation table B43 Oak Gum Cypress from the US Forest Service General Technical Report NE-343, with stands delineated by age and primary composition.

*Filename:* 17 – Wilson Family Forest Carbon Quantification

#### **Accounting Stock Measurement Method (11.1)**

*Describe quantification, including which method used to assess canopy cover (e.g. i-Tree, inventory, other), forest type, and data sources.*

The Accounting Stock was estimated according to Protocol Section 11.1.A, using table B43 Oak Gum Cypress from the USFS GTR NE-343 for the Southeast Region. Assessment of forest composition was completed by Mosaic Carbon staff and included ten forty-foot transects across the Project Area to confirm forest types, describe forest health, determine stem density, and estimate the range of tree sizes (DBH). Canopy cover was confirmed using the i-Tree Canopy tool. Because the quantification used the GTR tables, the standard 20% deduction was made to calculate the Accounting Stock from the GTR non-soil carbon estimates.

#### **Stratification**

*If stratification is used, maps of strata and stratum definitions. If not used, list not applicable.*

Not applicable

#### **Stand Maps**

*Describe the methods used to determine forest stands (e.g. GIS) and documentation.*

Stand boundaries were drawn on Google Earth based on forest composition as identified by historical imagery and verified by site visits. The Project Area is comprised of two stands. Stand 1 (10 acres) consists of mid-successional forest dominated by sweetgum and loblolly pine. It has an estimated age of 30 years old based on historical imagery and is in a uniform state of dense regeneration, as confirmed by on-the-ground observations. Stand 2 (14.29 acres) consists of mature oak, sweetgum, and loblolly pine

forest. It has an estimated age of 90 years old based on historical imagery. There is no evidence of harvest or clearing, either in historical imagery or ground observations.

*Filename:* 18 – Wilson Family Forest Composition Report  
19 – Wilson Family Forest Stand Maps

### **Forest Age**

*Provide historical imagery or other materials to support forest age documentation. Describe the method(s) used:*

In order to determine the relative ages of the two stands, Project Operator utilized historical imagery provided by the GIS department of the City of Virginia Beach to document the presence and persistence of tree cover on the Project Area. All available historical images were reviewed, and those from the following years were included in the attachment as representative: 1937 (the oldest image available), 1954, 1982, 1994, 2007, and 2015.

Aerial imagery shows that Stand 1 was in regular agricultural use from 1937 to as recently as 1982. However, there is no evidence of any harvest or cultivation in the next available imagery from 1994 or any of the ensuing years. To be conservative, the forest age was estimated at 30 years old.

Aerial imagery from as early as 1937 shows the stand to be fully forested. There is no evidence, either observable in the forest transect or in historical imagery, of any clearing. Therefore, the forest is estimated at 90 years old.

*Filename:* 20 – Wilson Family Forest Historical Imagery

### **Forest Composition**

*Describe forest composition and explanation of method(s) used.*

The Project Area is divided into two stands. Three visits were made to the site between July and November 2022. Ten forty-foot transects were used to determine stem density and tree sizes (DBH).

Stand 1 is dense, mid-successional forest estimated at 30 years old, consisting of 60% sweetgum and 30% loblolly pine. There is very little understory. Results between transects were consistent, finding on average 1,200 stems per acre. The average sweetgum DBH was 5" and the average loblolly pine DBH was 14".

Stand 2 is a low-lying mature hardwood forest consisting of white oak (10%), willow oak (10%), sweetgum (30%), and loblolly pine (30%). Results between transects were consistent. On average, there were 300 stems per acre. The average oak DBH was 18", the average sweetgum DBH was 16" and the average loblolly pine DBH was 20".

*Filename:* 18 – Wilson Family Forest Composition Report

### **Canopy Cover**

*Provide i-Tree Canopy report that shows estimated percentage of tree cover. Explanation of method(s) used:*

Project Operator utilized i-Tree canopy to determine canopy cover, with 200 randomized points overlaid on satellite imagery to estimate forest cover. The analysis determined that the Project Area has 100 percent canopy cover.

*Filename:* 21 – Wilson Family Forest i-Tree Canopy Report  
22 – Wilson Family Forest i-Tree Canopy Data Points

### **Area Expected to Remain in Trees after Potential Development (11.2)**

*Describe how you determined the area expected to remain in trees after potential development (fraction at risk) and explanation of method(s) used:*

The Project Area is zoned for agricultural use (AG-1 and AG-2), which allows primarily agricultural but also residential uses. The Naval Airspace Easement restricts permitted uses to a list of nine uses, which includes agricultural use but not residential use. Section 11.2.A. in the Preservation Protocol allows for 90% of the Accounting Stock on agriculture zones to be counted as “Avoided Biomass Emissions”. 62% of the Project Area is National Wetland Inventory (NWI) wetlands, and a Clean Water Act Section 404 permit is required to convert forested areas to agricultural use; however, the USACE – Norfolk District confirmed that no permit is required to harvest trees from the wetlands. Therefore, 90% of Accounting Stock was claimed as at risk of tree removal.

*Filename:* 7 – Wilson Family Forest Zoning Map  
8 – Wilson Family Forest Zoning Restrictions  
13 – Wilson Family Forest Stand NWI Map  
14 – Wilson Family Forest USACE Statement

### **Quantification of Soil Carbon - Existing Impervious Area and Impervious Limits (11.4)**

*The Project may claim avoidance of emissions from soil carbon caused by conversion of soils to impervious surfaces. Describe applicable zoning and development rules, existing impervious area maximum fraction impervious cover.*

The Project Area is zoned for agricultural use (AG-1 and AG-2), which allows primarily agricultural but also residential uses. The Naval Airspace Easement restricts permitted uses to a list of nine uses, which includes agricultural use but not residential use. Neither the zoning regulations nor the Naval Airspace Easement limit impervious surfaces. Per Protocol Section 11.4.A, 90% of the Project Area is allowable in an agricultural zone as eligible for conversion to impervious surface. 62% of the Project Area is National Wetland Inventory (NWI) wetlands, and a Clean Water Act Section 404 permit is required to convert forested areas to agricultural use; therefore, to be conservative, the area designated wetlands were excluded from the soil carbon quantification.

*Filename:* 7 – Wilson Family Forest Zoning Map  
8 – Wilson Family Forest Zoning Restrictions  
13 – Wilson Family Forest Stand NWI Map  
14 – Wilson Family Forest USACE Statement

### **Future Planned Project Activities**

*Describe any future project activities that may affect the percent canopy or carbon stocking in any way.*

The Project Area is protected for the entire 40-year Project Duration through the restrictive covenant. No activities permitted in the Covenant would reduce canopy cover, and the Project Operator will monitor the site for forest health. The Landowner has expressed an interest in transferring ownership of the property to the City of Virginia Beach. In the event that this transfer occurs, Mosaic Carbon would continue to steward and monitor the Project Area, as well as enforce the restrictive covenant.

Should the Naval Airspace Easement be enforced to reduce the height of trees in the Project Area, this may be considered an avoidable reversal under the Preservation Protocol. In such cases, per Protocol Section 9.1A, the Project Operator will deliver written notice to the Registry within 60 days of the potential Reversal. The Registry shall determine the number of credits reversed and require the Project Operator to provide replacement credits.

## CO-BENEFITS QUANTIFICATION DOCUMENTATION (Section 11.6)

*Summarize co-benefit quantification and provide supporting documentation. CFC will provide a Co-Benefits Quantification spreadsheet to Project Operators for calculating rainfall interception, reduction of certain air compounds, and energy savings.*

<b>Ecosystem Services</b>	<b>Resource Units</b>	<b>Value</b>
Rainfall Interception (m3/yr)	5,944.9	\$15,549.49
Air Quality (t/yr)	0.6865	\$1,538.67
Cooling – Electricity (kWh/yr)	38,654	\$2,933.82
Heating – Natural Gas (kBtu/yr)	16,528	\$171.73
<b>Grand Total (\$/yr)</b>		<b>\$20,193.72</b>

Co-benefits were quantified using CFC's co-benefits calculator. These ecosystem services represent values in avoided costs of \$807,748.72 over 40 years.

*Filename: 23 – Wilson Family Forest CoBenefits*

## SOCIAL IMPACTS (Section 12)

*Project Operators shall use the Carbon Project Social Impact template to evaluate the UN Sustainable Development Goals (SDGs) to determine how a Project provides social impacts that contribute towards achievement of the global goals. CFC will provide the template. Summarize the three to five main SDGs from this Project.*

### SDG 13. Climate Action

Project will sequester atmospheric CO<sub>2</sub> and help mitigate climate change. Protecting the forest will also reduce the impact of climate disasters and flooding risk for adjacent residential areas by reducing stormwater runoff, preserving soil health, and preventing conversion into impervious surface. The forest will help mitigate urban island effects for city residents.

### SDG 14. Life Below Water

Due to its proximity to West Neck Creek, preservation of this forest will have a positive impact on the fish and wildlife of the creek.

#### **SDG 15. Life on Land**

The forest is already home to thriving mammal and bird populations. Preserving this forest within the city, in an area of rapid development and habitat destruction, will ensure continued habitat and improve local biodiversity.

*Filename: 24 – Wilson Family Forest Social Impacts*

### **MONITORING AND REPORTING (Section 8)**

*Throughout the Project Duration, the Project Operator must report on tree conditions across the Project Area. Monitoring reports are due every three years determined by the date of the verification report. For example, if the verification report is dated January 1, 2021, the first report will be due by January 1, 2024 and every three years thereafter for the duration of the project.*

*Describe your monitoring plans. If Project Operator plans to claim credits for future growth, describe methods that will be used to quantify future growth.*

The Project Operator will submit triannual monitoring reports utilizing aerial imagery to the Registry for the 40-year Project Duration, as specified in the Preservation Protocol. Project Operator does not intend to claim credits for future growth.

### **PROJECT OPERATOR SIGNATURE**

## PROJECT OPERATOR SIGNATURE

Signed on February 28 in 2023, by Tee Clarkson, Principal, for Mosaic Carbon LLC.

  
Tee Clarkson, Feb 28, 2023 13:42 EST

Signature

Tee Clarkson

Printed Name

804-687-1869

Phone

tee@firstearth.eco

Email

## ATTACHMENTS

*List the number and name of attachments*

- 1 – Wilson Family Forest Project Area
- 2 – Wilson Family Forest Regional Scale Map
- 3 – Wilson Family Forest Project Area Map
- 4 - Wilson Family Forest Deed
- 5 – Wilson Family Forest Agreement to Transfer Credits
- 6 – Wilson Family Forest Covenant
- 7 - Wilson Family Forest Zoning Map
- 8 - Wilson Family Forest Zoning Restrictions
- 9 – Wilson Family Forest Airspace Easement
- 10 – Wilson Family Forest City of VB Easements and Map
- 11 - Wilson Family Forest Developed Perimeter
- 12 – Wilson Family Forest Floodplain Maps and Ordinances
- 13 – Wilson Family Forest Stand NWI Map
- 14 – Wilson Family Forest USACE Statement
- 15 - Wilson Family Forest Attestation of No Double Counting and No Net Harm
- 16 - Wilson Family Forest Attestation of Additionality
- 17 - Wilson Family Forest Carbon Quantification
- 18 - Wilson Family Forest Composition Report
- 19 - Wilson Family Forest Stand Maps
- 20 - Wilson Family Forest Historical Imagery
- 21 - Wilson Family Forest i-Tree Canopy Report
- 22 - Wilson Family Forest i-Tree Canopy Data Points
- 23 - Wilson Family Forest CoBenefits
- 24 - Wilson Family Forest Social Impacts


# 0 Wilson Family Forest Project Design Document


Final Audit Report


2023-02-28


Created:	2023-02-28
By:	Rachelle Lim (rachelle@cityforestcredits.org)
Status:	Signed
Transaction ID:	CBJCHBCAABAADN-6dunHZm9oVDfeMPZJaIBM7wR26JKS


## "0 Wilson Family Forest Project Design Document" History


 Document created by Rachelle Lim (rachelle@cityforestcredits.org)  
2023-02-28 - 4:26:33 PM GMT

 Document emailed to tee@firstearth.eco for signature  
2023-02-28 - 4:27:03 PM GMT

 Email viewed by tee@firstearth.eco  
2023-02-28 - 5:46:17 PM GMT

 Signer tee@firstearth.eco entered name at signing as Tee Clarkson  
2023-02-28 - 6:42:06 PM GMT

 Document e-signed by Tee Clarkson (tee@firstearth.eco)  
Signature Date: 2023-02-28 - 6:42:08 PM GMT - Time Source: server

 Agreement completed.  
2023-02-28 - 6:42:08 PM GMT



## **Attachments**

[Agreement to Transfer Credits](#)

[Deed](#)

[Project Area Map](#)

[Regional Area Map](#)

[Preservation Commitment](#)

[Zoning Maps](#)

[Zoning Description\(s\)](#)

[Threat of Loss Demonstration](#)

[Attestation of No Double Counting and No Net Harm](#)

[Attestation of Additionality](#)

[Carbon Quantification Tool](#)

[iTree Canopy Report](#)

[Forest Composition Report and Site Photos](#)

[Historical Photos](#)

[Cobenefit Calculator](#)

[Social Impacts](#)

## Agreement to Transfer Credits

## CARBON CREDIT PROJECT DEVELOPMENT AGREEMENT

THIS CARBON CREDIT PROJECT DEVELOPMENT AGREEMENT (this "Agreement") is made this 5th day of January, 2023, by and among Paul and Delores Wilson ("Landowner"), and Mosaic Carbon LLC ("Developer").

### RECITALS

- A. Landowner owns certain real property located in Virginia Beach, Virginia, identified as GPIN 1495-43-9093-0000, containing approximately 24.9 acres, all as more particularly shown on Exhibit A attached hereto and incorporated herein by this reference (the "Tract").
- B. Developer desires to develop a tree preservation and carbon crediting project, as more particularly described below (the "Project"), on a portion of the Tract identified on Exhibit A (the "Property"), on the terms and conditions set forth below.
- C. Landowner desires to have Developer develop the Project, on the terms and conditions set forth below.

### AGREEMENT

Therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. **Recitals.** The foregoing Recitals are hereby incorporated into this Agreement as a matter of contract and not mere recital.
2. **Project Development.** Developer shall, at its sole cost and expense, complete the Project, which consists of the following activities: preservation of trees on the Property for the generation of carbon credits to be registered with City Forest Credits, in accordance with City Forest Credits' 40-year Tree Preservation Protocol. Developer confirms that it is prepared to act as the project operator for the Project. Landowner acknowledges it will receive, among other things, the benefits of tree preservation and maintenance in this Project at little to no cost to Landowner.
3. **Transfer of Credits.** Landowner transfers to Developer all right, title, and interest in and to any potential carbon or other environmental credits generated by the Project ("Carbon+ Credits"). The Carbon+ Credits will be developed using protocols and registry of City Forest Credits, a non-profit organization ("CFC"). As the owner of the Carbon+ Credits, Developer shall have the right to develop, register with and sell the Carbon+ Credits, at Developer's sole risk and cost.
4. **Payment Terms.**

Developer shall be paid an Advisory Fee and a Project Management Fee by the Landowner.

(a) A non-refundable fee of \$2,500 (advisory fee) shall be payable upon the release of credit income.

(b) Carbon Credit Payments (within sixty (60) days of credit income release by the Registry)

(i) Landowner shall receive seventy percent (70%) of gross credit sale income less registry fees, Developer fees, monitoring and maintenance fees, and verification fees (See Exhibit C).

(ii) Developer shall be due a project management fee of thirty percent (30%) of the gross sale income of all credits generated by the project. Impera Commercial and Land will split the project management fee with Mosaic Carbon on a 50/50 basis.

5. **Landowner's Representations and Warranties.** Landowner warrants and represents that:

(a) Organization and Power. Landowner has all requisite powers and governmental licenses, authorizations, consents, and approvals to enter into and perform its obligations under this Agreement and any document or instrument required to be executed and delivered on behalf of Landowner.

(b) Authorization, Execution and Delivery. This Agreement has been duly authorized by all necessary membership action on the part of Landowner, has been duly executed and delivered by Landowner, constitutes the valid and binding agreement of Landowner, and is enforceable in accordance with its terms.

(c) Noncontravention. There are no outstanding agreements (written or oral) under which Landowner (or any predecessor to or representative of Landowner) has agreed to sell or has granted any purchase or use rights for any portion of the Property that would conflict with the Project. The execution and delivery of this Agreement, and the performance by Landowner of its obligations under this Agreement, do not and will not result in the creation of any lien or other encumbrance on any asset of Landowner. In addition, the execution and delivery of this Agreement, and the performance by Landowner of its obligations under it do not and will not contravene or constitute a default under:

(i) Any provision of applicable law or regulation.

(ii) Its organizational documents; or

(iii) Any agreement, judgment, injunction, order, decree, or other instrument binding upon Landowner.

(d) Title. Landowner holds good and marketable fee simple title to the Property and has the full right, power and authority as the owner of the Property to enter into, execute, deliver and perform this Agreement and any other documents contemplated by this Agreement.



(e) No Liens or Encumbrances. There are no liens, deed of trusts, mortgages, leases, contracts, contractual rights, agreements or other liabilities, recorded or unrecorded, existing or contingent, of any kind against the Property. There are no mechanics' liens against the Property, no claims for labor, services, or material furnished for constructing, repairing or improving the same which remain unpaid and constitute a lien against the Property.

(f) Litigation. There is no action, suit, or proceeding pending or known to be threatened against or affecting Landowner in any court, before any arbitrator, or before or by any governmental body that:

(i) In any manner raises any question affecting the validity or enforceability of this Agreement or any other agreement or instrument to which Landowner is a party or by which it is bound and that is, or is to be used in connection with, or is contemplated by, this Agreement.

(ii) Could adversely affect Developer's rights or Landowner's ability to perform its obligations under this Agreement, or under any document to be delivered under it.

(iii) Could create a lien on any portion of the Property, or any interest therein; or

(iv) Could otherwise adversely affect any portion of the Property, any interest therein, or the use, operation, condition, or occupancy of the Property.

(g) Hazardous Materials. There are no enforcement, clean-up, removal, mitigation, or other claims or proceedings relating to any violation of federal, state, local, or other governmental laws governing or relating to the environment or releases or threatened releases of Hazardous Materials (as defined below) pending or threatened against the Tract. The term "**Hazardous Materials**" means any "hazardous chemical," "hazardous substance," or similar term as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. § 9601 *et seq.*), and all rules and regulations thereunder or in any other applicable federal, state, or local law, rule, or regulation dealing with environmental protection or human health. For the purposes of this Agreement, the term Hazardous Materials also includes petroleum and petroleum products. Further:

(i) No condition, use, or activity on the Tract violates any environmental law, regulation, or order.

(ii) There are no Hazardous Materials on any portion of the Tract.

(iii) No spills, releases, discharges, or disposal of Hazardous Materials have occurred or are presently occurring on or onto the Tract; and

(iv) There are no storage tanks located on or under the Tract.

(h) Compliance with Existing Laws. There are no existing or threatened violations of any provision of any applicable law, governmental ordinance, resolution, statute, rule, order, or regulation with respect to any portion of the Property.

(i) Condemnation Proceedings. There is no condemnation or eminent domain proceeding pending or threatened against any portion of the Property.

(j) Full Disclosure. This Agreement does not contain any untrue statement of a material fact, nor has Landowner failed to disclose a material fact that, if it had been disclosed, could have materially affected Developer's decision to complete the Project.

(k) Non-Resident Alien. Landowner is not a non-resident alien for purposes of U.S. income taxation.

If Landowner becomes aware of any conditions, events, or actions which would render any of Landowner's representations or warranties inaccurate, Landowner shall promptly disclose such condition to Developer in writing.

6. **Covenants and Agreements**. The parties covenant and agree as follows:

(a) Recordation of Declaration. Upon notice from Developer, Landowner shall execute, acknowledge and deliver to Developer to record, the Declaration of Restrictions attached hereto as "Exhibit B" and incorporated herein by this reference (the "**Declaration**"), against the Property.

(b) Landowner's Actions. Landowner shall not take any action that would have a material, adverse impact on Developer's ability to complete the Project.

(c) Liens, Encumbrances and Zoning. Landowner shall not execute or subject the Property or consent to any deeds of trust, liens, encumbrances, covenants, conditions, restrictions, easements, or rights-of-way, or seek any zoning changes or take any other action which may affect or modify the status of title or otherwise affect the Property without Developer's prior written consent, which Developer may withhold in its sole and absolute discretion.

(d) Compliance. The parties will comply with all applicable permits, laws, rules, regulations and ordinances applicable to the Project.

(e) Taxes. Landowner will pay promptly when due, all real estate taxes, rents, if any, and any other taxes, charges and assessments (on the basis that they are assessed) affecting the Property (collectively, "**Taxes**").

7. **Term**. This Agreement shall remain in force for forty (40) years after the date of this Agreement.

8. **Default**. If either party defaults in the performance of any term or condition under this Agreement and if such default continues for a period of ten (10) days following receipt of written notice from the non-defaulting party (provided that if such default is of a nature that it cannot through the exercise of reasonable and diligent efforts be cured within ten (10) days, then the defaulting party shall not be in default in such instance if the defaulting party promptly commences and diligently pursues the cure of such default to completion), the non-defaulting



party is entitled to all remedies allowed at law or equity, including claims for damages or claims for equitable relief.

9. **Notices.** All notices, requests and other communications provided for herein shall be in writing and shall be deemed to have been duly given (i) upon receipt, if delivered by hand, or (ii) upon posting, if mailed, postage prepaid, by certified mail, return receipt requested, or (iii) the business day following sending if sent by Federal Express or other nationally recognized overnight courier service or Express Mail, or (iv) upon receipt if sent by email and receipt is confirmed:

If to Developer:                Mosaic Carbon            
                                           4525 East Seminary Ave            
                                           Richmond, VA 23227            
                                 \_\_\_\_\_

If to Landowner:      \_\_\_\_\_  
                                 \_\_\_\_\_  
                                 \_\_\_\_\_  
                                 \_\_\_\_\_

With a copy to:      \_\_\_\_\_  
                                 \_\_\_\_\_  
                                 \_\_\_\_\_  
                                 \_\_\_\_\_

10. **Miscellaneous.**

(a) **Assignment.** Developer may assign this Agreement, or any portion thereof, without the written consent of Landowner.

(b) **Entire Agreement.** This Agreement and the Declaration constitute the final and entire agreement between the parties with respect to the transactions contemplated herein, and all prior letters of intent, agreements, understandings, representations, and statements, oral and written, are merged herein. Any modification or amendment to this Agreement shall be made only by a writing executed by the parties hereto.

(c) **Successors and Assigns.** The parties mutually agree that the provisions of this Agreement shall be binding upon them and each of their respective successors and assigns.

(d) **Governing Law.** This Agreement shall be governed, construed, interpreted, and applied according to the laws of the Commonwealth of Virginia.

(e) **Time of the Essence.** Time is of the essence for the purposes of this Agreement.

(f) No Partnership or Joint Venture. Nothing contained in this Agreement will be construed to create a partnership or joint venture between the parties or their successors in interest or permitted assigns.

(g) Waiver. No waiver by any party of any condition, or the breach of any term, covenant, representation or warranty set forth in this Agreement, shall be deemed a waiver of any such covenant, representation or warranty, unless the same shall be in writing.

(h) Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which, together, shall constitute a single agreement.

(i) Further Assurances. Each party hereto covenants and agrees to execute and deliver, or cause to be executed and delivered, and to do or make, or cause to be done or made, upon the reasonable request of any party hereto, any and all instruments, papers, deeds, acts or things, supplemental, confirmatory or otherwise, as may be reasonably required by such party for the purpose of effecting this Agreement.

(j) Brokers. The parties warrant and represent to each other that (a) they have not engaged or received services from any real estate broker, salesperson or other person or entity who may claim a commission or other payment in conjunction with this Agreement other than Troy A Brinkley with Impera Commercial and Land Company as referenced in a separate agreement with Developer; The parties hereby indemnify, defend and hold each other harmless from and against the claims, demands, actions and judgments of any and all brokers, agents and other intermediaries alleging a commission, fee or other payment to be owing by reason of their respective dealings, negotiations, or communications in connection with this Agreement. This section (k) survives the expiration or earlier termination of this Agreement.

(k) Confidentiality. In connection with the negotiation of this Agreement and the preparation for consummation of the transactions contemplated hereby, the parties acknowledge that they each will have access to confidential information relating to the other. Each party shall preserve the confidentiality of such information and not disseminate such information other than to their respective officers and directors and the parties' respective professionals, contractors and advisors. Each party shall be responsible for ensuring that their respective advisors, consultants, affiliates, agents and employees comply with the foregoing provisions. The foregoing restrictions shall not apply to information that is publicly available or that is disseminated through no fault of the parties, or that is required to be disseminated pursuant to applicable law.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.

SIGNATURES APPEAR ON THE FOLLOWING PAGE]



IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals, all pursuant to due and proper authority:

LANDOWNER:

By: Paul L. Wilson  
name: Paul L. Wilson  
title: owner  
Date: 1-5-23

By: Deborah & Ray Wilson  
Name: Deborah & Ray Wilson  
Title: owner  
Date: 01/05/2023

DEVELOPER:

By: Tee Clarkson  
Name: Tee Clarkson  
Title: Principal, Mosaic Carbon  
Date: 1/5/23

## EXHIBIT A

### MAP OF THE TRACT AND PROPERTY

Wilson Family Forest Project Area

Parcel Number - 14954390930000

Parcel Boundary - \_\_\_\_\_  
Parcel Area - 24.9 acres

Project Boundary - \_\_\_\_\_  
Project Area - 24.29 acres



Deed

1069779

BK3309PG1124

THIS DEED OF GIFT, made this 23<sup>rd</sup> day of October, 1992, by and between HARTFORD DEVELOPMENT GROUP, INC., a Virginia corporation, GRANTOR, party of the first part, and PAUL L. WILSON and DELORES L. WILSON, husband and wife, GRANTEES, parties of the second part, whose address is 5228 West Randolph Court, Virginia Beach, Virginia 23464.

W I T N E S S E T H:

That for and in consideration of the sum of TEN DOLLARS (\$10.00), cash in hand paid and other good and valuable consideration, the receipt of which is hereby acknowledged, the said party of the first part does hereby grant and convey with GENERAL WARRANTY and ENGLISH COVENANTS OF TITLE unto the said parties of the second part as tenants by the entireties with the right of survivorship as at common law, the following described property, to-wit:

ALL THAT certain lot, piece or parcel of land, with the buildings and improvements thereon, situate, lying and being in the City of Virginia Beach, Virginia, and being known, numbered and designated as "PARCEL A (24.939 Acres)" as shown on that certain plat entitled, "SUBDIVISION OF PARKSIDE GREEN, SECTION ONE, PRINCESS ANNE BOROUGH, VIRGINIA BEACH, VIRGINIA", which said plat is duly recorded in the Clerk's Office of the Circuit Court of the City of Virginia Beach, Virginia, in Map Book 215, at Pages 14 et seq.

IT BEING a part of the same property conveyed unto Hartford Development Group, Inc., by deed from Holland Road Development Group, Inc., a Virginia corporation, dated November 9, 1989, and recorded in the aforesaid Clerk's Office in Deed Book 2870, at Page 1056.

GFIN #1495-43-9093-0000

BK3309PG1125

Teixe400

This conveyance is made expressly subject to the easements, conditions, restrictions and reservations of record, if any, affecting the aforesaid property and constituting constructive notice.

IN WITNESS WHEREOF, HARTFORD DEVELOPMENT GROUP, INC., a Virginia corporation, has caused these presents to be executed in its name by its duly authorized officer.

HARTFORD DEVELOPMENT GROUP, INC.,  
a Virginia corporation

THOMAS R. GALLAGHER, PRESIDENT

STATE OF VIRGINIA

CITY OF VIRGINIA BEACH, to-wit:

I, the undersigned, a Notary Public in and for the State of Virginia at large, do hereby certify that Thomas R. Gallagher, President of Hartford Development Group, Inc., a Virginia corporation, whose name as such is signed to the foregoing instrument bearing date on the 23<sup>rd</sup> day of October, 1992, has acknowledged the same before me in the City and State aforesaid.

Given under my hand this 23<sup>rd</sup> day of October, 1992.

Mrs. G. I. O'Keefe  
Notary Public

My commission expires: June 30 1996

(SEAL)

RECORDED WITH  
CERTIFICATE ANNEXED

93 DEC -1 AM 10: 26

\$58.1-802 TAXES PAID \$  
VIRGINIA BEACH, VA.

TESTE:


[Signature]  
CLERK, CIRCUIT COURT

Project Area Map




## Wilson Family Forest Project Area

Parcel Number - 14954390930000

Parcel Boundary - 

Parcel Area – 24.9 acres

Project Boundary - 

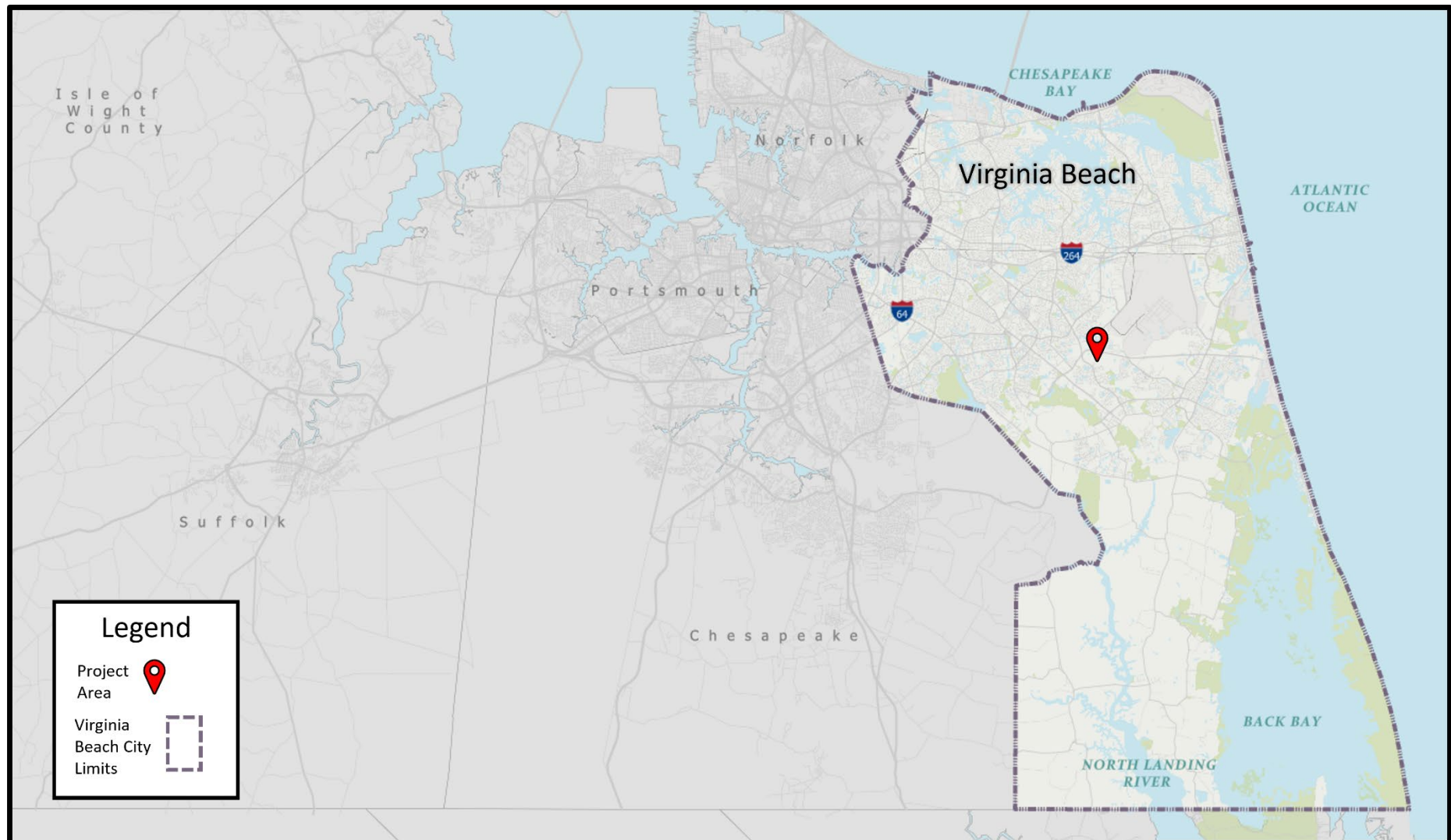
Project Area – 24.29 acres



Regional Area Map



## Wilson Family Forest Regional Scale Map



## Preservation Commitment

Document Prepared By  
And After Recording Return to:  
Broad Water Innovations  
425 East Seminary Avenue  
Richmond, VA 23227

[Declaration to be Inserted]

INSTRUMENT # 202303000551      PAGE 1 OF 9  
RECORDED VIRGINIA BEACH CIRCUIT COURT  
Jan 06, 2023 AT 02:37 pm      DECL  
TINA E. SINNEN, CLERK

RECEIVED  
VIRGINIA BEACH CIRCUIT CT  
2023 JAN -6 PM 1:35  
TINA E. SINNEN, CLERK

Tax Parcel Nos: \_1495-43-9093-0000

### **DECLARATION OF RESTRICTIVE COVENANTS AND GRANT OF ACCESS**

THIS DECLARATION OF RESTRICTIVE COVENANTS AND GRANT OF ACCESS (this "Declaration") is made this 5<sup>th</sup> day of January 2023, by and between **DELORES AND PAUL WILSON**, ("Owner") and **MOSAIC CARBON LLC**, a Virginia limited liability company ("Project Operator").

WHEREAS Owner is the owner of the Property more fully described on "Exhibit A" attached hereto and incorporated herein by this reference (the "Property"); it being identified as tax parcel 1495-43-9093-0000.

WHEREAS, with the consent and approval of the Owner, Project Operator submitted a Carbon Project Application (the "Instrument") to City Forest Credits (the "Registry") dated July 14, 2022, establishing the Wilson Family Forest Preservation Project (the "Carbon Project") on a portion of the Property containing approximately 24.29 acres and being identified as the "Forested Areas" on the plat attached hereto as "Exhibit B" and incorporated herein by this reference; and

WHEREAS, the Registry has developed a Tree Preservation Protocol. This Tree Preservation Protocol, Version 11.40 dated February 7, 2022 (the "Protocol") is incorporated herein, and all terms used in the Protocol have the same meaning here; and

WHEREAS the Forested Areas may contain land, functions, values and services that serve the purpose of generating and transferring carbon credits ("Carbon Credits"), as described in the Instrument; and

WHEREAS, to generate and transfer the Carbon Credits, the Protocol requires that this Declaration be executed and recorded, and the Owner and Project Operator desire to comply with the Protocol by imposing this Declaration upon the Forested Areas; and

WHEREAS this Declaration of Restrictive Covenants and Grant of Access shall remain in force for 40 years from the execution of this Declaration; to the extent required by law, the Owner

shall re-record this Declaration of Restrictive Covenants to keep it in effect for so long as the Carbon Project is in effect, and

NOW THEREFORE THIS DECLARATION OF RESTRICTIVE COVENANTS WITNESSETH: The Owner does hereby declare, covenant and agree, for itself and its successors and assigns, that the Forested Areas shall, for forty (40) years from the execution of this Declaration, be held, leased, transferred, and sold subject to the following conditions and restrictions which shall run with the land and be binding on all parties and persons claiming under them; and the parties acknowledge and hereby give notice that the Owner previously transferred to the Project Operator all right, title, and interest in and to any Carbon Credits, including any potential carbon or other environmental credits generated by the Carbon Project. The Carbon Credits will be developed using protocols of the Registry. As the owner of the Carbon Credits, Project Operator shall have the right to develop, register with and sell the Carbon Credits, at Project Operator's sole risk and cost.

**Covenants and Restrictions.**

1. **Removal of Trees.** The Owner shall not cut down, destroy, or remove trees located within the Forested Areas, except as necessary to:
  - a. control or prevent hazard, disease or fire, or
  - b. improve forest health, or
  - c. comply with applicable laws, the Protocol or any Registry requirements.
2. **Surface Alteration.** The Owner shall not alter the surface of the Forested Areas or place trash or debris within the Forested Areas, including, without limitation, the excavation or removal of trees, soil, sand, gravel, rock, peat, or sod except as necessary to:
  - a. promote or maintain forest or river health, fish habitat, or forest restoration projects, including without limitation the removal of noxious or invasive species, or
  - b. promote or maintain the health and safety of the community such as to prevent landslides or hill collapse.
3. **Subdivisions.** Subdividing the Forested Areas is prohibited.
4. **Transfer of Credits.** The parties acknowledge and hereby give notice that the Owner previously transferred to the Project Operator all right, title, and interest in and to any Carbon Credits, including any potential carbon or other environmental credits generated by the Carbon Project. The Carbon Credits will be developed using protocols of the Registry. As the owner of the Carbon Credits, Project Operator shall have the right to develop, register with and sell the Carbon Credits, at Project Operator's sole risk and cost

### **Use of Trails**

Recreational non-motor-use trails have negligible or de minimis impacts on biomass and carbon stock and are permissible within the Forested Areas. Maintenance of trails and access roads within or crossing the Forested Areas is permitted as long as activities do not negatively affect the associated Carbon Credits.

### **Amendment**

This Declaration shall not hereafter be altered in any respect without the express written approval and consent of the Owner, the Project Operator and the Registry. This Declaration is intended to survive foreclosure, bankruptcy, condemnation or judgments affecting the Property.

### **Access, Compliance, Inspections and Enforcement**

Throughout the term of this Declaration, Project Operator, and its successors, assigns, consultants and contractors, shall have the right to access the Property for purposes of entitling, designing, developing, constructing and operating the Carbon Project within the Forested Areas and performing such actions as may be necessary or appropriate to comply with the Protocol. In accessing the Forested Areas over and across the remainder of the Property, the Project Operator shall minimize its disturbance and disruption to the remainder of the Property.

Project Operator, the Registry, and their authorized agents shall have the right to enter and go on the Property to inspect the Forested Areas and take actions necessary to verify and enforce compliance with these restrictive covenants. The Registry and its authorized agents shall provide the Owner and/or the Project Operator with reasonable advance notice 48 hours prior to entering the Property. The restrictive covenants herein shall be enforceable by any proceeding at law or in equity or administrative proceeding by the Project Operator or the Registry. Failure to enforce any covenant or restriction contained herein shall in no event be deemed a waiver of the right to do so thereafter.

### **Eminent Domain**

If any Forested Areas are taken in whole or in part through eminent domain, the proportionate value of the Forested Areas that represents the functions and values provided in the Instrument, belongs to the Carbon Project, and the Project Operator is obligated by the terms of the Instrument to use those proceeds to procure and replacement functions and values in accordance with the terms of the Protocol. Any valuation of the Forested Areas should include consideration of the values and functions of the Carbon Project, with particular regard to the cost of providing or obtaining replacement functions and values from other projects within the same vicinity.

### **Severability Provision**

The provisions hereof shall be deemed individual and severable and the invalidity or partial invalidity or unenforceability of any one provision or any portion thereof shall not affect the validity or enforceability of any other provision thereof.

### **Consent of Lender and Trustee:**

The Property is not encumbered by any mortgages or deeds of trust. Therefore, no trustee or lender

consent is required to duly authorize (I) the restrictions imposed by this instrument or (ii) the sale of the Owner's carbon credits.

[Remainder of this page intentionally left blank.]

WITNESS the following signature of Owner the day and year first above written.

BY: Paul L. Wilson  
NAME: Paul L. Wilson  
TITLE: Owner

COMMONWEALTH OF VIRGINIA  
CITY/COUNTY OF Virginia Beach, to wit:

The foregoing instrument was acknowledged before me this 5 day of January, 2023, by  
Paul L. Wilson of \_\_\_\_\_, on behalf of \_\_\_\_\_.



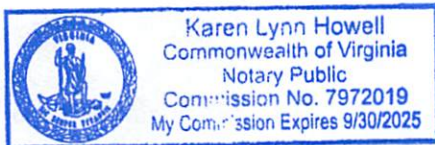
Karen Lynn Howell  
Notary Public  
My Commission Expires: 9-30-2025

WITNESS the following signature of Owner the day and year first above written.

BY: [Signature]  
NAME: Debra F. Wilson  
TITLE: Owner

COMMONWEALTH OF VIRGINIA  
CITY/COUNTY OF Virginia Beach to wit:

The foregoing instrument was acknowledged before me this 5 day of January, 2023, by  
Debra F. Wilson of \_\_\_\_\_, on behalf of \_\_\_\_\_.



Karen Lynn Howell  
Notary Public  
My Commission Expires: 9-30-2025



Project Sponsor joins in this Declaration for the purpose of confirming its agreement to abide by its obligations hereinabove set forth.

**MOSAIC CARBON LLC**, a Virginia  
limited liability company

BY: [Signature]  
NAME: Thomas S. Clarkson II  
TITLE: Principal

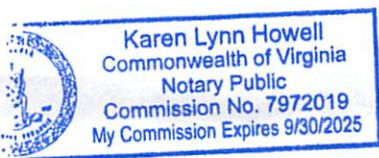
COMMONWEALTH OF VIRGINIA  
CITY/COUNTY OF Virginia Beach, to wit:

The foregoing instrument was acknowledged before me this 5 day of January 2023, by Thomas Clarkson II, Principal of Mosaic Carbon LLC, on behalf of Mosaic Carbon LLC.

[Signature: Karen Lynn Howell]

Notary Public

My Commission Expires: 9-30-2025



**EXHIBIT A**

**DESCRIPTION OF THE PROPERTY**

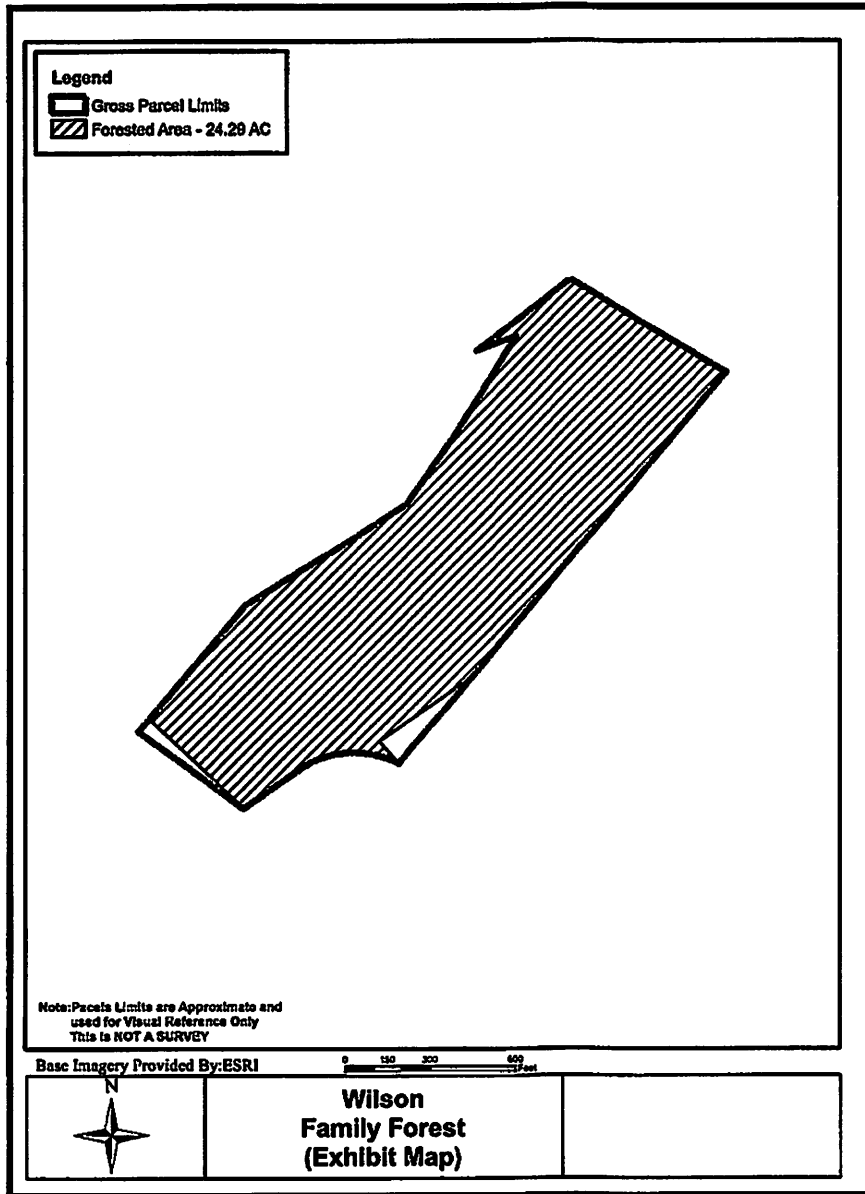
ALL THAT certain lot, piece, or parcel of land with the buildings and improvements thereon. Situate, lying on and being in the City of Virginia Beach, Virginia, and being known numbered and designated as "Parcel A (24.939 acres)" as shown on that certain plat entitled "SUBDIVISION OF PARKSIDE GREEN, SECTION ONE, PRINCESS ANNE BURGESS, VIRGINIA BEACH, VIRGINIA", which said plat is duly recorded in the Clerk's Office of the Circuit Court of the City of Virginia Beach, Virginia, in Map Book 215 at Pages 14 et seq.

IT BEING a part of the same property conveyed unto the Hartford Development Group, Inc., by deed from Holland Road Development Group, Inc., a Virginia corporation, dated November 9, 1989, and recorded in the aforesaid Clerk's Office in Deed Book 2870, at page 1056.

GPIN - #1495-43-9093-0000

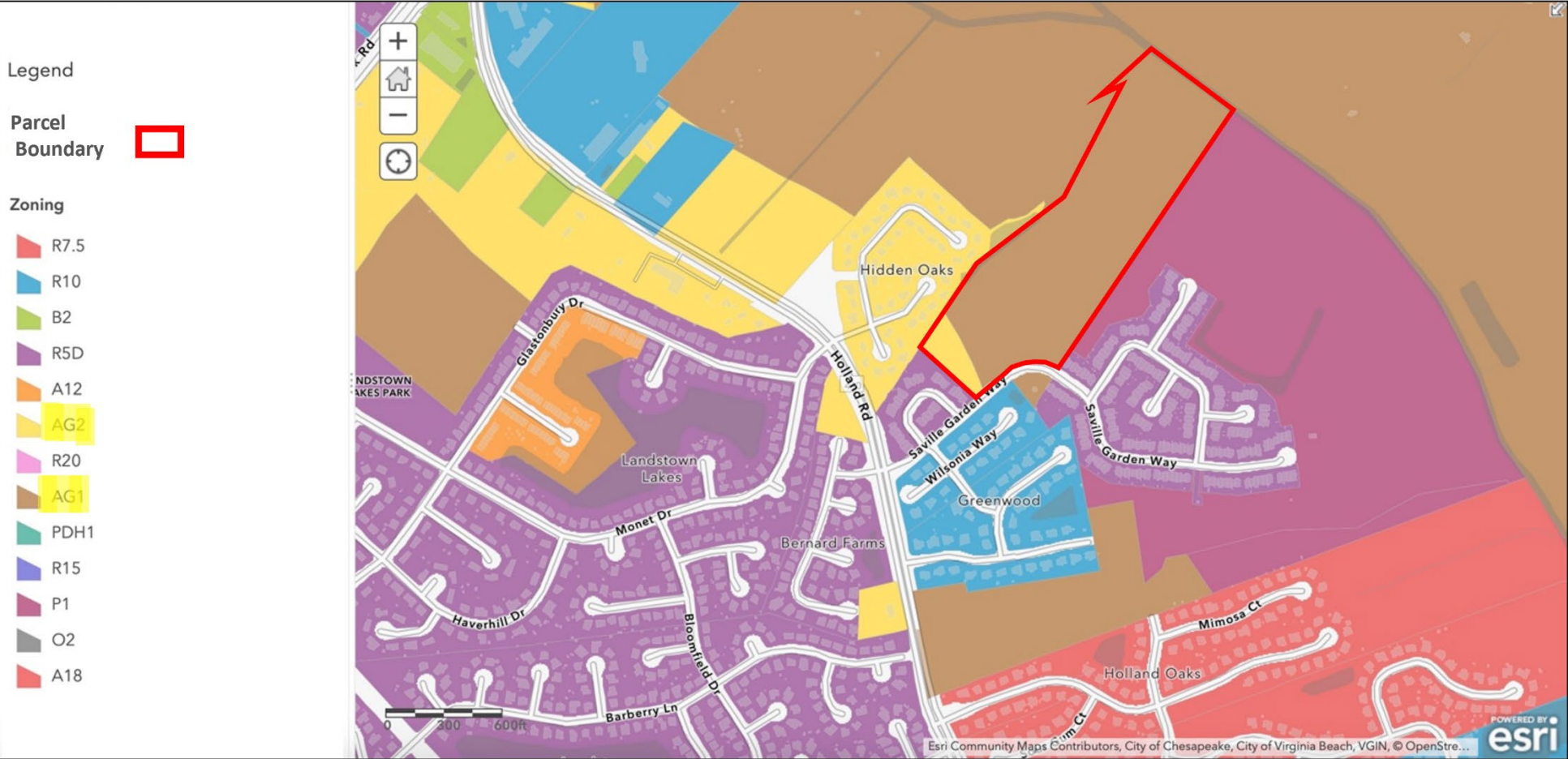
**EXHIBIT B**

**PLAT IDENTIFYING THE FORESTED AREAS**



## Zoning Maps

# City of Virginia Beach - Zoning Map



## Zoning Description(s) and Critical Areas

## City of Virginia Beach – Relevant Zoning Documentation for AG-1 and AG-2

[Link to relevant Code of Ordinances section](#)

- **ARTICLE 4. - AGRICULTURAL DISTRICTS**

*Editor's note— Ord. No. 2041, adopted March 5, 1991, amended Art. 4, §§ 400—404, relative to agricultural districts, in its entirety to read as herein set out. The provisions of former Art. 4 derived from Ord. No. 1773, adopted April 18, 1988, as amended by Ord. No. 1877, § 3, adopted May 22, 1989; Ord. No. 1936, adopted Nov. 13, 1989; Ord. No. 2001, enacted Aug. 21, 1990; and Ord. No. 2002, adopted Sept. 18, 1990.*

- **Sec. 400. - Legislative intent.**

The purpose of the AG-1 and AG-2 Agricultural Districts is to protect and preserve agricultural lands for agricultural functions, including agritourism and the direct sale of agricultural and agricultural-related products to the public, and to protect and preserve agricultural lands and activities in the rural areas of the city in harmony with reasonable levels of rural residential development and in keeping with the special rural character, environmental protection needs and limited rural infrastructure available.

(Ord. No. 2041, 3-5-91; Ord. No. 3354, 6-17-14)

- **Sec. 401. - Use regulations.**

(a)

*Principal and conditional uses.* The following chart lists those uses permitted within the AG-1 and AG-2 Agricultural Districts. Those uses and structures in the respective agricultural districts shall be permitted as either principal uses indicated by a "P" or as conditional uses indicated by a "C." Uses and structures indicated by an "X" shall be prohibited in the respective districts. No uses or structures other than as specified shall be permitted.

Use	AG-1	AG-2
Agricultural, aquacultural and horticultural operations, including orchards, vineyards, nurseries and the raising and grazing of livestock, poultry and swine and the keeping of bees	P	P
Agricultural product sales, and sales of agricultural-related products, at buildings or structures no larger than 3,500 square feet in area, exclusive of rest rooms and hand-washing facilities, subject to the provisions of subsection (d)	P	P
Agricultural product sales, and sales of agricultural-related products at buildings or structures larger than 3,500 square feet in area, exclusive of rest rooms and hand-washing facilities, subject to the provisions of subsection (d)	C	C
Agritourism activities meeting the requirements of subsection (c)	P	P
Agritourism activities other than those meeting the requirements of subsection (c) and held no more than three (3) times per year, subject to the issuance of a Special Events Permit pursuant to City Code <a href="#">section 4-1</a>	P	P
Agritourism activities other than those meeting the requirements of subsection (c) and held more than three (3) times per year	C	C
Airports, heliports and helistops	C	C
Animal hospitals, pounds, shelters, commercial and residential kennels	C	C
Antique shops, except as provided below	X	X
Antique shops within buildings listed on the Virginia Beach Historical Register	C	C



Use	AG-1	AG-2
Assembly uses	C	C
Borrow pit	C	C
Building-mounted antennas meeting the requirements of <a href="#">section 207</a>	P	P
Cemetery, columbarium, crematory and mausoleum	C	C
Child care education centers in connection with public or private elementary schools or religious uses	P	P
Child care education centers, day nurseries, other than those permitted as principal uses and structures, when not operated by a public agency	C	C
Columbarium located in cemetery	P	P
Communication towers meeting the requirements of administrative review projects and temporary communication towers meeting the requirements of <a href="#">section 207</a>	P	P
Communication towers -standard process	C	C
Country inns	C	C
Drive-in theaters	C	C
Dwelling, single-family addition	P	P
Dwellings, duplex	X	X

Use	AG-1	AG-2
Dwellings, single-family, except as specified in <a href="#">section 405</a> (a)	P	P
Dwellings, single-family, in accordance with <a href="#">section 405</a> (a)	C	C
Dwelling units, not to exceed one (1), located within livestock barns, to be occupied only by farm employees or persons related to the owner of the property by blood, marriage, adoption or approved foster care	P	P
Family care homes, foster homes or group homes	C	C
Farm wineries, farm breweries and farm distilleries, subject to the provisions of <a href="#">section 209.1</a>	P	P
Fiber-optics transmission facilities	C	C
Firewood preparation facility	C	C
Fish hatcheries and fish ponds	P	P
Flex suites, subject to the provisions of <a href="#">section 507</a>	P	P
Forests and forestry	P	P
Fraternity and sorority houses, student dormitories and student centers; provided that they be located within a one-mile radius of a college or university	C	C
Game preserves	P	P
Golf courses, including par 3 with a minimum area of 10 acres, and miniature golf courses	C	C

Use	AG-1	AG-2
Home-based wildlife rehabilitation facilities	P	P
Home occupations, including those conducted outside the principal structures	C	C
Home sharing meeting the requirements of <a href="#">section 209.6</a>	P	P
Hospitals and sanitariums	C	C
Marinas, noncommercial and community boat docks	C	C
Maternity homes	C	C
Mulch processing facilities, subject to the provisions of <a href="#">section 239.02</a>	C	C
Mulch storage on lots at least five (5) acres in area on which an active farming operation is conducted, provided that no more than five hundred (500) cubic yards shall be stored at one time; no retail sales to the general public shall be conducted; no processing shall occur on the site; and no sign associated with such activity shall be allowed	P	P
Museums and art galleries when not operated by a public agency	C	C
Personal watercraft rentals	C	C
Private schools having curriculums similar to public schools	C	C
Private sewage treatment facilities	C	C

Use	AG-1	AG-2
Public elementary, intermediate and high schools, colleges and universities; day nurseries in connection with public or private elementary schools or religious uses	P	P
Public parks, recreational areas, botanical and zoological gardens, golf courses, marinas and other public buildings and uses	P	P
Public utility installations and substations; provided offices, storage or maintenance facilities shall not be permitted; and provided, further, that utilities substations other than individual transformers, shall be surrounded by Category V screening, solid except for entrances and exits; and provided also, transformer vaults for underground utilities and the like shall require Category I screening, solid except for access openings	P	P
Public utility transformer stations and major transmission lines and towers (50,000 volts or more)	C	C
Recreation and amusement facilities of an outdoor nature other than those specified as principal uses, which may be partially or temporarily enclosed on a seasonal basis, with the approval of city council	C	C
Recreation facilities other than those of an outdoor nature	C	C
Recreational and amusement activities, as specified in and subject to the provisions of subsection (c)	P	P
Recreational campgrounds	C	C
Recreational resort community	C	C
Religious uses	C	C
Repair of agricultural equipment	C	C

Use	AG-1	AG-2
Residential care for seniors, provided that no more than two (2) employees including a bona fide resident of the dwelling shall be permitted	P	P
Retail sales of garden supplies, equipment, and material, as a subsidiary use to a plant nursery, provided that the sales are enclosed and limited to a maximum floor area of five hundred (500) square feet	C	C
Riding academies and horses for hire or boarding, including incidental sales of tack, riding apparel and similar items used in the principal activity, limited to one hundred fifty (150) square feet of floor area within an existing barn used in conjunction with the principal activity; provided that not more than three (3) riding animals shall be kept for each acre of land within the site and that all buildings housing animals, and all corrals in which animals are kept or assembled in concentrated groups, shall be at least one hundred (100) feet from any property line.	P	P
Shelter for farm employees	C	C
Short term rental	X	X
Short term rental within the Sandbridge Special Service District,* meeting all of the requirements of <a href="#">Section 241.2</a>	P	P
Short term rental within an STR Overlay District, meeting all of the requirements of <a href="#">Section 241.2</a> and, where applicable, <a href="#">Section 2303</a>	C	C
Small-scale processing, extracting, packaging, or fabricating of agricultural product, in conjunction with a bona fide agricultural operation on the same parcel. Maximum processing area not to exceed 3,500 square feet, not including area for storage. Processing not to include livestock or poultry.	P	P



Use	AG-1	AG-2
Small-scale processing or packaging of livestock in conjunction with a bona fide agricultural livestock operation on the same parcel; not to exceed the processing of <a href="#">250</a> head of livestock per year; processing and packing does not include the slaughtering of livestock.	P	P
Small-scale processing or packaging of poultry in conjunction with a bona fide agricultural poultry operation on the same parcel; not to exceed 20,000 poultry per year; includes the slaughter of poultry raised on the same parcel.	P	P
Small wireless facilities meeting the requirements of <a href="#">section 207</a>	P	P
Small wireless facilities not placed on existing structures	P	P
Storage and maintenance installations for public utilities	C	C
Television or other broadcasting stations	C	C
Wells, water reservoirs, and water control structures	P	P
Wildlife rehabilitation centers	C	C
Wind energy conversion systems, freestanding, except as provided below	P	P
Wind energy conversion systems, freestanding, in excess of one (1)	C	C
Wind energy conversion systems, roof-mounted, except as provided below	P	P
Wind energy conversion systems, roof-mounted, in excess of one (1)	C	C

Use	AG-1	AG-2
*Sandbridge Special Service District defined in City Code section 35.1-3.		

(b)

*Accessory uses and structures.* Uses and structures which are customarily accessory and clearly incidental and subordinate to principal uses and structures, including but not limited to, an accessory activity operated for profit in a residential dwelling unit where (i) there is no change in the outside appearance of the building or premises or any visible or audible evidence detectable from outside the building lot, either permanently or intermittently, of the conduct of such business except for one (1) nonilluminated sign not more than one (1) square foot in area mounted flat against the residence; (ii) no traffic is generated, including traffic by commercial delivery vehicles, by such activity in greater volumes than would normally be expected in the neighborhood, and any need for parking generated by the conduct of such activity is met off the street and other than in a required front yard; (iii) the activity is conducted on the premises which is the bona fide residence of the principal practitioner, and no person other than members of the immediate family occupying such dwelling units is employed in the activity; (iv) such activity is conducted only in the principal structure on the lot; (v) there are no sales to the general public of products or merchandise from the home, except for agricultural products, or agricultural-related products, incidental to an agricultural operation on which the dwelling unit is located; and (vi) the activity is specifically designed or conducted to permit no more than one (1) patron, customer, or pupil to be present on the premises at any one time. Notwithstanding the provisions of clauses (ii) and (vi) hereof, ministers, marriage commissioners and other persons authorized by law to perform the rites of marriage may permit a maximum of eight (8) persons on the premises at any one time in connection with the performance of such rites, provided that all other requirements of subdivision (b)(2) are met. The following are specifically prohibited as accessory activities: Convalescent or nursing homes, tourist homes, massage or tattoo parlors, body piercing establishments, radio or television repair shops, auto repair shops, or similar establishments. Rental of rooms in a dwelling or the entire dwelling thirty (30) consecutive days or more is an accessory use to the dwelling.

(c)

*Agritourism activities.* Agritourism activities at which no more than two hundred fifty (250) persons, exclusive of residents of the property and employees at the activity, are in attendance at any one time shall be allowed as principal uses under the following conditions; provided, however, that activities involving the planting or harvesting of agricultural products shall not be subject to any limitation of the number of persons in attendance:

(1)

Such activities, including all vehicular parking, shall be held on the property of an active agricultural operation, where such agricultural operation is the principal use of the property;

(2)

Vehicular parking shall not be allowed on any public street, or within one hundred (100) feet of any residence, except a residence located on the site of the activity. There shall be a designated vehicular parking area of sufficient area to accommodate the anticipated number of motor vehicles on the site at such events;

(3)

Such activities shall be carried on only between the hours of 7:00 a.m. and sunset;

(4)

Signs shall be nonilluminated and limited to one sign not exceeding sixteen (16) square feet in area;

(5)

No outdoor amplified music shall be permitted within five hundred (500) feet of any residence, except a residence located on the site of the activity, and no such music shall be permitted at any time before 10:00 a.m.

In the event any provision of this subsection conflicts or is otherwise inconsistent with any other provision of this ordinance, the provisions of this subsection shall control; provided, however, that no use otherwise permitted hereunder

which constitutes, or requires the excavation of, a borrow pit, as defined in section 111, shall be allowed except by conditional use permit.

(d)

*Sales of agricultural products and agricultural-related products.* The sale of agricultural products or agriculture-related products, other than as allowed by subsection (b), shall be subject to the following restrictions:

(1)

Such sales shall be conducted upon, and as an integral part of, an active agricultural operation owned or operated by the same person or entity conducting such sales; and

(2)

No farm stand or other building or structure in which merchandise is offered for sale to the general public shall be: (i) greater than twelve (12) feet in height, as measured from ground level to eaves, (ii) located within fifty (50) feet of the property line abutting any street, or (iii) open for business except between 7:00 a.m. and 8:00 p.m.

(e)

*Definitions.* The following terms shall be defined as set forth herein:

(1)

*"Agricultural operation"* means any operation devoted to the bona fide production of crops, animals, or fowl, including the production of fruits and vegetables of all kinds, meat, dairy, and poultry products, nuts, tobacco, nursery, and floral products; and the production and harvest of products from silvicultural or aquacultural activity, but does not include the processing of agricultural products or the above-ground application of sewage sludge.

(2)

*"Agricultural product"* means any produce, livestock, poultry, aquacultural, horticultural, floricultural, viticultural, silvicultural, or other farm crops.

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(3)

*"Agricultural-related product"* means any product that is produced as an incident of an agricultural operation. The term includes honey, maple syrup, jams, jellies, preserves, relishes, juices, cider, milk, ice cream and other dairy products, peanut butter, cheese, eggs, breads and other baked goods, fresh seafood, poultry and other meats, ornamental plants, flowers, pottery, hanging baskets, wood carvings, potholders and other hand-crafted items having an agricultural theme, and similar items. In addition, bottled water, soda and items of apparel displaying exclusively the name of the farm stand or other identifying information concerning the owner or operator of the farm stand shall be allowed, provided that the display of such apparel shall not exceed ten (10) percent of the floor area of the establishment,

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(4)

*"Agritourism activity"* means any activity carried out on a farm or ranch that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, wineries, ranching, historical, cultural, harvest-your-own activities, equestrian events, or natural activities and attractions.

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An activity shall not be deemed an agritourism activity solely by reason of its taking place on a farm or ranch. "Agritourism activity" does not include the following types of activity, among others not specifically listed, but such activities may be allowed with a conditional use permit for outdoor recreation or amusement or as a special event as defined in [section 4-1](#) of the City Code: (i) activities involving motor vehicle competitions or other activities involving the use of motor vehicles, other than farm vehicles; or (ii) the rental of a farm or ranch, or portion thereof, for events such as weddings, wedding receptions, parties, retreats, and other activities on a regular basis, unless such events themselves consist primarily of participation in an agritourism activity.

(5)

*"Farm"* or *"ranch"* means one (1) or more areas of land used for the production, cultivation, growing, harvesting or processing of agricultural products, or the raising or keeping of livestock.

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(f)

Special restrictions in Accident Potential Zone 1 (APZ-1). No use or structure shall be permitted on any property located within Accident Potential Zone 1 (APZ-1) unless such use is designated as compatible in APZ-1 in Table 2 ("Air Installations Compatible Use Zones Land Use Compatibility in Accident Potential Zones") of [section 1804](#); provided, however, that any use or structure not designated as compatible shall be permitted as a replacement of the same use or structure if the replacement use or structure is of equal or lesser density or intensity than the original use or structure.

(Ord. No. 2041, 3-5-91; Ord. No. 2118, 3-24-92; Ord. No. 2221, 5-11-93; Ord. No. 2282, 6-28-94; Ord. No. 2268, 6-14-94; Ord. No. 2427, 10-29-96; Ord. No. 2459, 10-28-97; Ord. No. 2461, 10-28-97; Ord. No. 2495, 6-23-98; Ord. No. 2505, 9-8-98; Ord. No. 2513, 10-27-98; Ord. No. 2566, 11-23-99; Ord. No. 2582, 5-23-00; Ord. No. 2627, 4-24-01; Ord. No. 2704, 6-25-02; Ord. No. 2788, 10-7-03; Ord. No. 2883, 6-14-05; Ord. No. 2907, 12-20-05; Ord. No. 2976, 4-24-07; Ord. No. 3000, 9-25-07; Ord. No. 3046, 8-26-08; Ord. No. 3102, 9-8-09; Ord. No. 3115, 2-9-10; Ord. No. 3167, 4-26-11; Ord. No. 3323, 1-14-14; Ord. No. 3331, 2-25-14; Ord. No. 3354, 6-17-14; Ord. No. 3366, 8-19-14; Ord. No. 3390, 1-6-15; Ord. No. 3403, 4-21-15; Ord. No. 3423, 7-7-15; Ord. No. 3442, 4-19-16; Ord. No. 3468, 12-6-16; Ord. No. 3477, 12-13-16; Ord. No. 3514, 7-11-17; Ord. No. 3578, 1-15-19; Ord. No. 3661, 5-18-21; Ord. No. 3667, 7-13-21; Ord. No. 3707, 8-16-22)

- **Sec. 402. - Dimensional requirements.**

The following chart lists the requirements within the AG-1 and AG-2 Agricultural Districts for minimum lot area, width, yard spacing, and height regulations for single-family dwellings. Note, however, that minimum lot area, as stated in [section 402\(a\)\(1\)](#), shall not be used to calculate density allowance. Allowable density shall be determined in accordance with [section 402\(b\)](#).

(a)

For single-family dwellings:

		Agricultural Districts	
		AG-1	AG-2
(1)	Minimum lot area:	1 acre	1 acre
(2)	Minimum lot width:	150 feet	150 feet
(3)	Minimum front yard setback:	50 feet	50 feet
(4)	Minimum side yard setback:	20 feet	20 feet
(5)	Minimum side yard adjacent to a street, except as specified in <a href="#">402</a> (a)(8) below:	30 feet	30 feet
(6)	Minimum rear yard setback:	20 feet	20 feet
(7)	Maximum height, except as provided in subsection (a1):	35 feet	35 feet
(8)	Yard setback that adjoins a major street or right-of-way designated on the official transportation plan.	50 feet	50 feet

The maximum height for single-family dwellings in subdivisions of ten (10) or more lots created after the date of adoption of this subsection, or for single-family dwellings having side and rear yard setbacks at least five (5) feet greater than required, shall be forty-two (42) feet.

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(b)

Residential density. The allowable density on each tract of land as existing on the effective date of this ordinance [June 28, 1994] shall be one (1) dwelling unit for each fifteen (15) acres of land as described in the comprehensive plan as soil area #1 and soil area #2. Nothing herein shall be construed as prohibiting the use by right of a lot lawfully created on or prior to the effective date of this ordinance for the purpose of constructing one (1) single-family dwelling, provided that such lot shall be connected to the public sewerage system or meet the requirements of the 1982 Onsite Sewer Regulations established by the Virginia Health Department. Such dwellings must comply with the current Health Departments regulations, and section 5B.5(b) and section 5B.5(d) of the Site Plan Ordinance. Additionally, any lot fifteen (15) acres or larger meeting the requirements of [section 200](#)(a) of this ordinance lawfully created on or prior to the effective date of this ordinance may be subdivided of right into a total of two (2) building sites provided that each lot satisfies all state and local development regulations.

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The following chart lists the requirements within the AG-1 and AG-2 Agricultural Districts for minimum lot area, width, yard spacing, maximum lot coverage and height regulations for uses and structures other than dwellings.

(c)

For uses other than dwellings:

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		Agricultural Districts	
		AG-1	AG-2
(1)	Minimum lot area:	3 acres	3 acres
(2)	Minimum lot width:	150 feet	150 feet
(3)	Minimum front yard setback:	50 feet	50 feet
(4)	The setback for roadside stands for any yard adjacent to street shall be 20 feet.		
(5)	Minimum side yard setback:	20 feet	20 feet
(6)	Minimum rear yard setback:	20 feet	20 feet
(7)	Maximum lot coverage:	15 percent	15 percent
(8)	The setback for any yard that adjoins a major street or right-of-way designated on the official transportation plan shall be 50 feet.		
(9)	There shall be no maximum height requirements for uses other than dwellings in the Agricultural Districts except that no building or other structure shall exceed the height limit established by <a href="#">section 202</a> (b) regarding air navigation.		

(Ord. No. 2041, 3-5-91; Ord. No. 2282, 6-28-94; Ord. No. 2371, 2-13-96; Ord. No. 2669, 10-23-01; Ord. No. 2767, 6-10-03; Ord. No. 3572, 11-20-18)

**Editor's note**— The addition of subsection (b) by Ord. No. 2282 implicitly redesignated former subsection (b) as (c).

\_\_\_\_\_

- **Sec. 403. - Sign regulations.**

Signs within the AG-1 and AG-2 Agricultural Districts shall be permitted as follows:

(a)

Except as may be permitted by the conditional use permit authorizing a specific use, one sign not greater than sixteen (16) square feet in area at each principal entrance or frontage of any use shall be permitted, except for religious uses, for which the maximum area per sign shall be thirty-two (32) square feet.

(b)

A maximum of four (4) signs located on property for sale, lease or rent, provided that no such sign shall exceed thirty-two (32) square feet in area, and that not more than one such sign shall be erected for each one hundred (100) feet of lot line adjoining a public street. Any property having less lot line adjoining a street may have one (1) sign not exceeding sixteen (16) square feet of surface area.

(c)

Signs displayed on any farm or ranch engaged in the production, cultivation, growing, harvesting or processing of agricultural products, or the raising or keeping of livestock; provided that no such sign shall exceed thirty-two (32) square feet in area, that not more than one (1) such sign shall be erected for each five hundred (500) feet of lot line adjoining a public street, and that such signs not be displayed for more than six (6) months in any calendar year.

(Ord. No. 2041, 3-5-91; Ord. No. 3000, 9-25-07; Ord. No. 3442, 4-19-16)

- **Sec. 404. - Parking regulations.**

Parking shall be required for all uses and structures permitted in the AG-1 and AG-2 Agricultural Districts in accordance with [section 203](#).

(Ord. No. 2041, 3-5-91)

- **Sec. 405. - Alternative residential development pursuant to conditional use permits.**

Except as provided in [section 1806](#), as an alternative to the residential development permitted by right in the agricultural districts, the city council may grant a conditional use permit to allow residential development at a density greater than that which is permitted by right. The following regulations shall apply to residential development outside of the Interfacility Traffic Area in the AG-1 and AG-2 Agricultural Districts pursuant to this section:

(a)

Council may attach conditions to the use permit governing the number of residential lots allowed on the tract. In so doing, council shall apply the following development criteria that are consistent with the adopted provisions of the comprehensive plan:

(1)

On land that is nearly level well-drained or moderately well-drained soils, as described in the comprehensive plan, technical report as soil area #1, with a seasonal high-water table from one and five-tenths (1.5) feet below grade as determined by the Virginia Department of Health and meeting the density allowances in [section 200\(a\)](#) of this ordinance, the maximum density shall be one (1) dwelling unit for each five (5) acres of land.

(2)

On land that is nearly level with somewhat poorly, poorly, or very poorly drained soils, as described in the comprehensive plan, technical report as soil area #2, with a seasonal high-water table ranging from zero (0) to one and five-tenths (1.5) feet below grade as determined by the Virginia Department of Health which occurs at or above an elevation of five and five-tenths (5.5) feet, based on National Geodetic Vertical Datum (NGVD) of 1929 ('72 ADJ), and meeting the density allowances in [section 200](#)(a) of this ordinance, the maximum density shall be one (1) dwelling unit for each ten (10) acres of land.

(3)

Evaluation of the soils of a parcel for the purpose of determining the density shall be conducted by a certified soil scientist with confirmation of the results provided by the director of agriculture.

(4)

Development proposals shall be in substantial conformance with all applicable provisions of the plan's rural residential development guidelines.

(5)

The annual rate of development shall be restricted so as to minimize burdens placed upon the rural public infrastructure.

(6)

On land with soil compositions as described in [section 405](#)(a)(2) and which is less than five and one-half (5.5) feet above mean sea level (MSL), there shall be no development and no density credit shall be allowed.

(7)

The density of development may be reduced below the maximum densities specified in sections [405](#)(a)(1) and (2) if, in the council's determination, the proposed development may present an undue adverse impact on agricultural operations or if



the location of the property and its proximity to public infrastructure and services is not suitable for such maximum densities.

---

(8)

A flag lot may be created, in accordance with the chart below, in which the lot is connected to a public street with road frontage having a minimum width of twenty (20) feet and in which all other relevant requirements of the subdivision regulations and zoning ordinance are met. The following chart provides the maximum number of lots which may be created in such manner as part of a subdivision of lots from an existing parcel:

---

EXPAND

Number of Subdivided Lots Created	Maximum Number of Flag Lots
1 to 10 lots	1
11 to 20 lots	2
21 to 30 lots	3
More than 31 lots	4

In no case shall more than four (4) such lots be created.

(9)

For residential subdivisions of twenty-five (25) lots or less, there shall be no more than two (2) access points on the existing public road system, including driveways and new roadways; and for subdivisions of over twenty-five (25) lots, there shall be no more than three (3) such access points.

---

(Ord. No. 2041, 3-5-91; Ord. No. 2221, 5-11-93; Ord. No. 2282, 6-28-94; Ord. No. 2415, 8-13-96; Ord. No. 2669, 10-23-01; Ord. No. 3006, 1-8-08)

## Wilson Family Forest Naval Airspace Easement

[Copy of Easement](#)

[Elevation Map](#)

## Copy of Easement

35655

BOOK 1971 PAGE 559

EI-213/C Parcel 7  
N62470-81-RP-00224

GRANT OF EASEMENT

THIS EASEMENT, made this 14<sup>th</sup> day of December, 1979, by and between GEORGE B. WILSON, widower, hereinafter called OWNER, and the UNITED STATES OF AMERICA, acting by and through the Department of the Navy, hereinafter called GOVERNMENT.

W I T N E S S E I H

WHEREAS, the OWNER owns in fee simple that certain hereinafter described tract of land containing 26.049 acres, more or less, located in the City of Virginia Beach, State of Virginia and situate in the vicinity of the Naval Air Station Oceana; and

WHEREAS, the GOVERNMENT desires to acquire perpetual easements and rights for clearance, restrictions and ingress and egress on, over, across, and through said lands for the establishment, maintenance, operation and use of a safety area and restricted use zone; and

WHEREAS, the OWNER and the GOVERNMENT entered in to an agreement identified as Contract N62470-80-RP-00151, dated November 26, 1979, whereby the OWNER agreed to sell and the GOVERNMENT agreed to purchase for the consideration of NINETY-TWO THOUSAND FIVE HUNDRED Dollars (\$92,500.00) the hereinafter described easements and rights, in, through, on, over and across said lands; and

WHEREAS, the OWNER and the GOVERNMENT now desire that said agreement shall be carried out by formalizing said conveyance;

NOW, THEREFORE, FOR AND IN CONSIDERATION OF the premises and the sum of NINETY-TWO THOUSAND FIVE HUNDRED Dollars (\$92,500.00), cash in hand paid to OWNER, receipt of which is hereby acknowledged, the OWNER does hereby grant, bargain, sell and convey with general warranty of title unto the UNITED STATES OF AMERICA and its assigns, perpetual easements and rights for clearance, restrictions and ingress and egress as described below for the establishment, maintenance, operation and use of a safety area and restricted use zone in connection with the operation of the Naval Air Station Oceana, in, through, on, over, and across the lands of the OWNER, described hereinafter, to-wit:

MICROFILMED

All that certain piece or parcel of land situate in the Princess Anne Borough of the City of Virginia Beach, Virginia containing 26.049 acres, more or less, and being more particularly described as follows:

BEGINNING at a point marked by an old pin in the easterly right-of-way line of Holland Road, the intersection of lands owned by George B. Wilson and Earl Wilson and Lula Wilson, said point having coordinates N171040.49, E2711059.56 based upon the Virginia State Plan Coordinate System, South Zone; thence leaving said point and running along the easterly right-of-way line of Holland Road N 13° 04' 20" W, 237.51 feet to a point marked by a steel pin; thence on a curve to the left having a radius of 397.50 feet, an arc distance of 124.03 feet, a chord bearing N 22° 00' 41" W and a chord length of 123.53 feet to a point marked by a steel pin; thence turning and running along the dividing line of lands owned by Howard Elbert Sturgeon and Ann Michael Sturgeon and George B. Wilson N 32° 37' 59" E, 452.91 feet to a point marked by a steel pin, said point being the TRUE POINT OF BEGINNING; thence continuing along the same course 531.97 feet to a marked 45" oak; thence N 51° 05' 46" E, 422.89 feet to a 30" gum stump; thence running along the dividing line of lands now or formerly owned by Euphus A. Fentress and Thomas W. Fentress and George B. Wilson the following five courses and distances: N 46° 48' 46" E, 150.40 feet to a point marked by a steel pin; thence N 27° 55' 07" E, 285.16 feet to a point marked by an old axle; thence N 25° 25' 07" E, 165.80 feet to a point marked by a steel pin; thence continuing along the same course, 204.00 feet to a point marked by a steel pin; thence turning to a course of S 64° 15' 07" W, 123.00 feet to a point marked by a steel pin; thence turning and running along the dividing line of lands owned by Mary Page Rainey, Charles A. Rainey and Mildred S. Cramer and George B. Wilson N 45° 40' 07" E, 300.00 feet to a point marked by a steel pin; thence along the same course 62.55 feet to a point located on the centerline of a drainage easement that is 100.00 feet in width; thence turning and running along the centerline of the drainage easement, said centerline being the dividing line of lands owned by Roger H. Sawyer and J. Beverley Sawyer and George B. Wilson, S 55° 02' 48" E, 542.17 feet to a point, said point having coordinates N173059.56, E2712814.57, thence turning and running through the lands owned by George B. Wilson S 32° 38' 19" W, 1881.65 feet to a point marked by a steel pin; thence turning and running along the dividing line of lands owned by Earl Wilson and Lula Wilson and George B. Wilson N 37° 38' 25" W, 171.78 feet to a point marked by a steel pin; thence turning and running S 48° 04' 13" W, 202.35 feet to a point marked by a steel pin, thence turning and running through the lands of George B. Wilson N 49° 23' 30" W, 448.51 feet to the TRUE POINT OF BEGINNING, containing 26.049 acres, more or less, and shown on Atlantic Division, Naval Facilities Engineering Command, Drawing No. 4,046,489, dated December 26, 1978 entitled "BOUNDARY LINE SURVEY OF EARL WILSON . . . WILLIAM E. BARCO AND ELLA ELIZABETH BARCO FOR P-997 RESTRICTIVE EASMENT FY-79 . . . NAVAL AIR STATION OCEANA - PRINCESS ANNE BOROUGH - VIRGINIA BEACH, VIRGINIA," as recorded in the Clerk's Office of the Circuit Court of the City of Virginia Beach, Virginia, in Map Book 137, page 3.



The above-described property was acquired by the OWNER by deed recorded in the Clerk's Office of the Circuit Court of the City of Virginia Beach, Virginia, in Deed Book 165, page 594.

The above-described property rights are acquired on behalf of the UNITED STATES OF AMERICA, acting by and through the Department of the Navy.

The perpetual easements and rights for clearance, restrictions and ingress and egress are described as follows:

1. A perpetual clearance easement over the entire area of the above-described property, which restricts and prohibits the OWNER of the above-described property from erecting, constructing, growing, installing, creating or continuing, whether public or private, any structure, building, antenna, tower, wire, tree or other obstruction, whatever its nature, extending more than 130 feet above mean sea level, together with the right of the GOVERNMENT to enter upon the above-described property and to cut down, top or trim all trees, plants, vines, and like obstructions and to alter or remove all structures, buildings, antennae, towers, or other obstructions, whatever their nature, extending more than 130 feet above mean sea level; the cost of such buildings and structures altered or removed, and all consequential damages relating thereto shall be borne by the OWNER of the above-described property and the cost of such cutting, topping, trimming, altering and removing, including the value of the trees cut, trimmed or removed, shall be borne by the GOVERNMENT; it being the intention of the OWNER and the GOVERNMENT to restrict and prohibit all usage of the above-described land, and its appurtenances higher than 130 feet above mean sea level, which interferes with communication between aircraft and the ground, impairs visibility, or otherwise endangers the landing, taking off, or maneuvering of aircraft or otherwise constitutes a flight hazard.

2. A perpetual restrictive easement over the entire area of the above-described property, which restricts the use of said property as follows:

a. No discharge of visible emissions into the outdoor atmosphere from any source situated on the above-described property shall exceed 20% opacity, the sole exceptions being that when starting a new fire, blowing tubes, cleaning a firebox, or similar operations, discharges of visible emissions greater than 20% will be allowed for brief periods.

b. No lights shall be constructed which will impair pilot vision or produce confusing patterns (color and/or pattern of layout) which could be mistaken for any lighting system associated with aircraft/ airfield operations. All projective lighting equipment (as defined in the Illumination Engineering Society Lighting Handbook) such as floodlights and searchlights and all protective lighting such as street lights shall have positive optical control such that no direct light is emitted above the horizontal plane.

c. On the above-described property, no feeding stations shall be constructed or maintained, nor shall grain crops be planted that will not be harvested when mature.

d. The above-described property shall not be used for human dwelling, transient or permanent, including, but not limited to, single or multi-family houses, hotels, motels or house trailers excepting, however, dwellings which exist and are so used on the date of this instrument. No new dwellings shall be constructed on the above-described property after the date of this instrument.

e. With the exception of pre-existing dwellings, the above-described property shall not be used for any purpose other than (1) industrial, defined as the use of machines to manufacture or assemble a finished product from unfinished material and the sale of the finished product for resale; (2) warehousing, defined as the use of open areas or



buildings for the storage of goods; (3) auto parking; (4) cemeteries, excluding chapels and similar structures; (5) nonspectator recreational activities such as golf and riding stables, excluding clubhouses and similar structures; (6) mining, natural resource production and extraction; (7) agriculture (excluding mink); (8) forestry; (9) public roads and highways, public utilities and railroads; all of the above nine (9) purposes exclude the use of the property for retail sales to the consumer not for resale, and for office space not directly related to or required by the enterprises located on the property.

3. A perpetual easement of ingress and egress on, over, across and through the above-described lands for the purpose of exercising the rights set forth herein; reserving, however, to the OWNER, their heirs and assigns, any and all rights and privileges as may be used and enjoyed without interfering with or abridging the rights herein acquired;

SUBJECT, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

The OWNER covenants that they are seized of said property in fee simple; that they have the right to convey the above-described easements to the GOVERNMENT; that they have done no act to encumber said property; that the GOVERNMENT will have quiet and peaceful possession and enjoyment of the above-described easement rights; and that the OWNER will execute such further assurances as may be requisite.

IN WITNESS WHEREOF, the OWNER has caused this GRANT OF EASEMENT to be executed as of the day and year first above written.

George B. Wilson  
GEORGE B. WILSON, widower

STATE OF VIRGINIA  
CITY OF

To-wit

Dennis D. Hengeman

, a Notary

Public in and for the City and State aforesaid, do hereby certify that

GEORGE B. WILSON, widower, whose name as such is signed to the foregoing Grant of Easement, bearing date of the 14<sup>th</sup> day of December, 1979, has this day acknowledged the same before me in my City aforesaid.

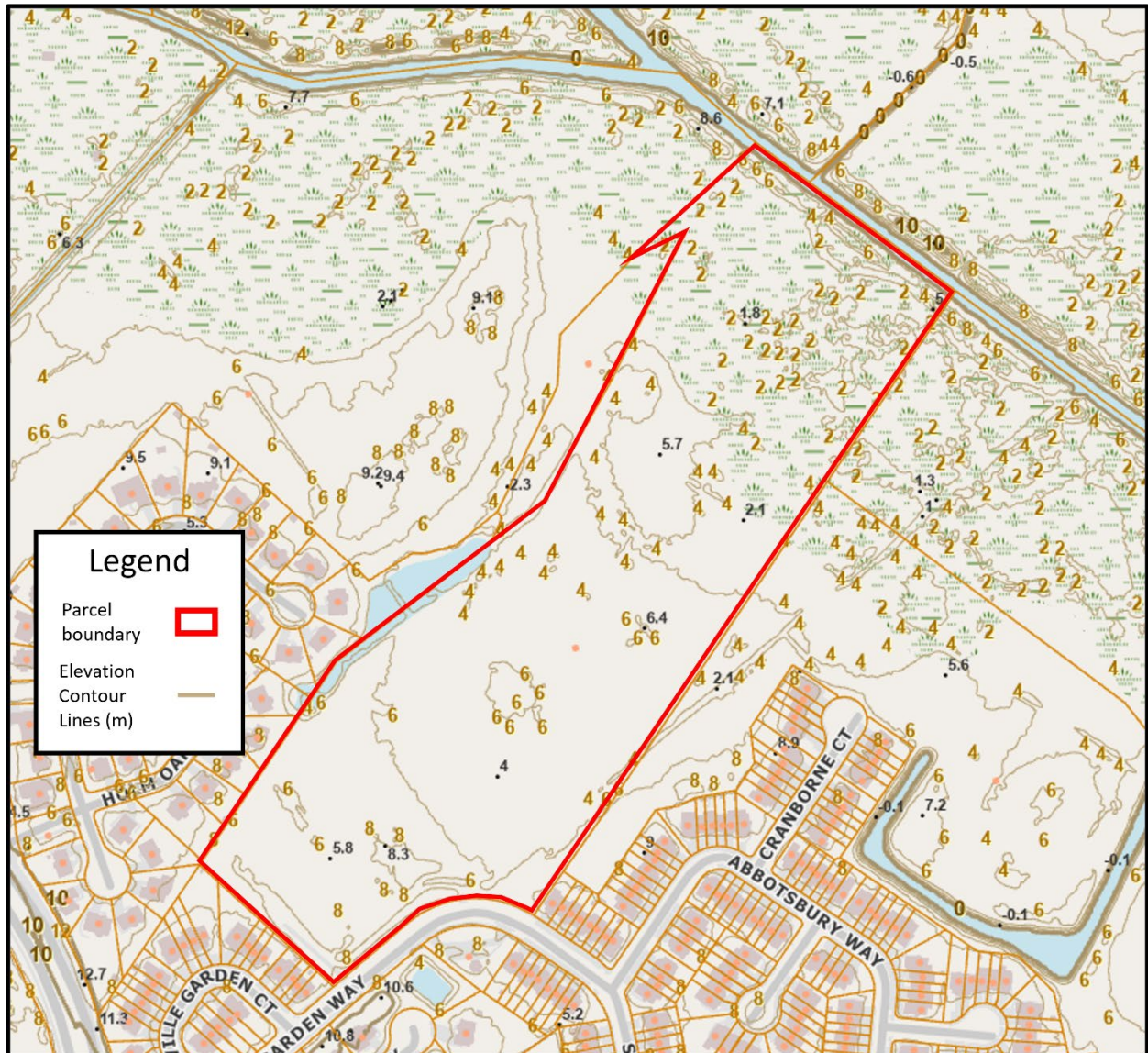
Given under my hand this 14<sup>th</sup> day of December, 1979.

Dennis D. Hengeman  
Notary Public

My commission expires: October 15, 1982

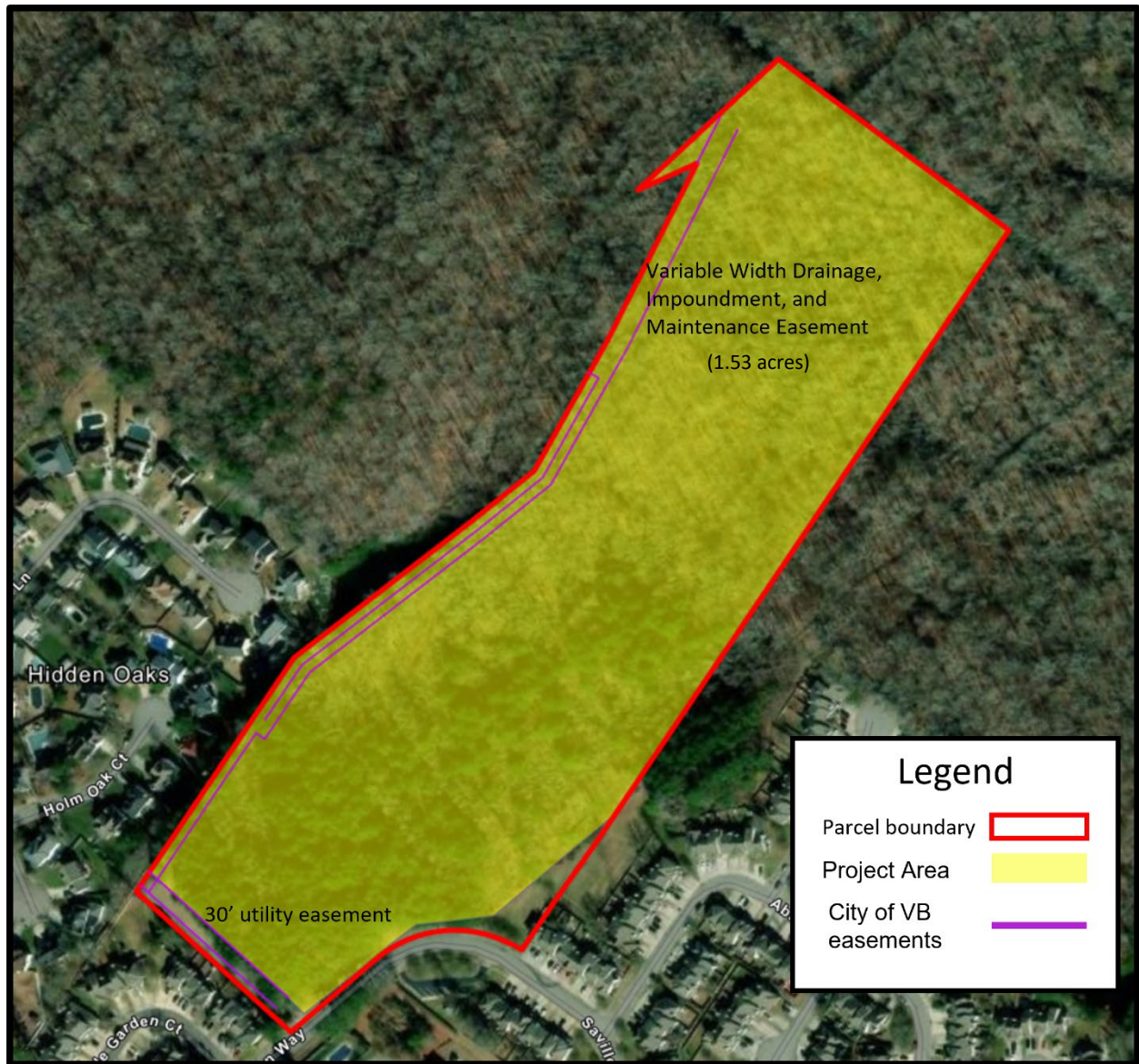
VIRGINIA: In the Clerk's Office of the Circuit Court of Virginia Beach 14<sup>th</sup> day of December 19 79 at 12:41, this instrument was received and upon the certificate of acknowledgment thereto excused, admitted to record. The tax imposed by Par. 58-54.1 of the Code has been paid, in the amount of \$ 92.50  
TESTE: JOHN V. FENTRESS, Clerk By Mary E. Cooper DC

## Elevation Map

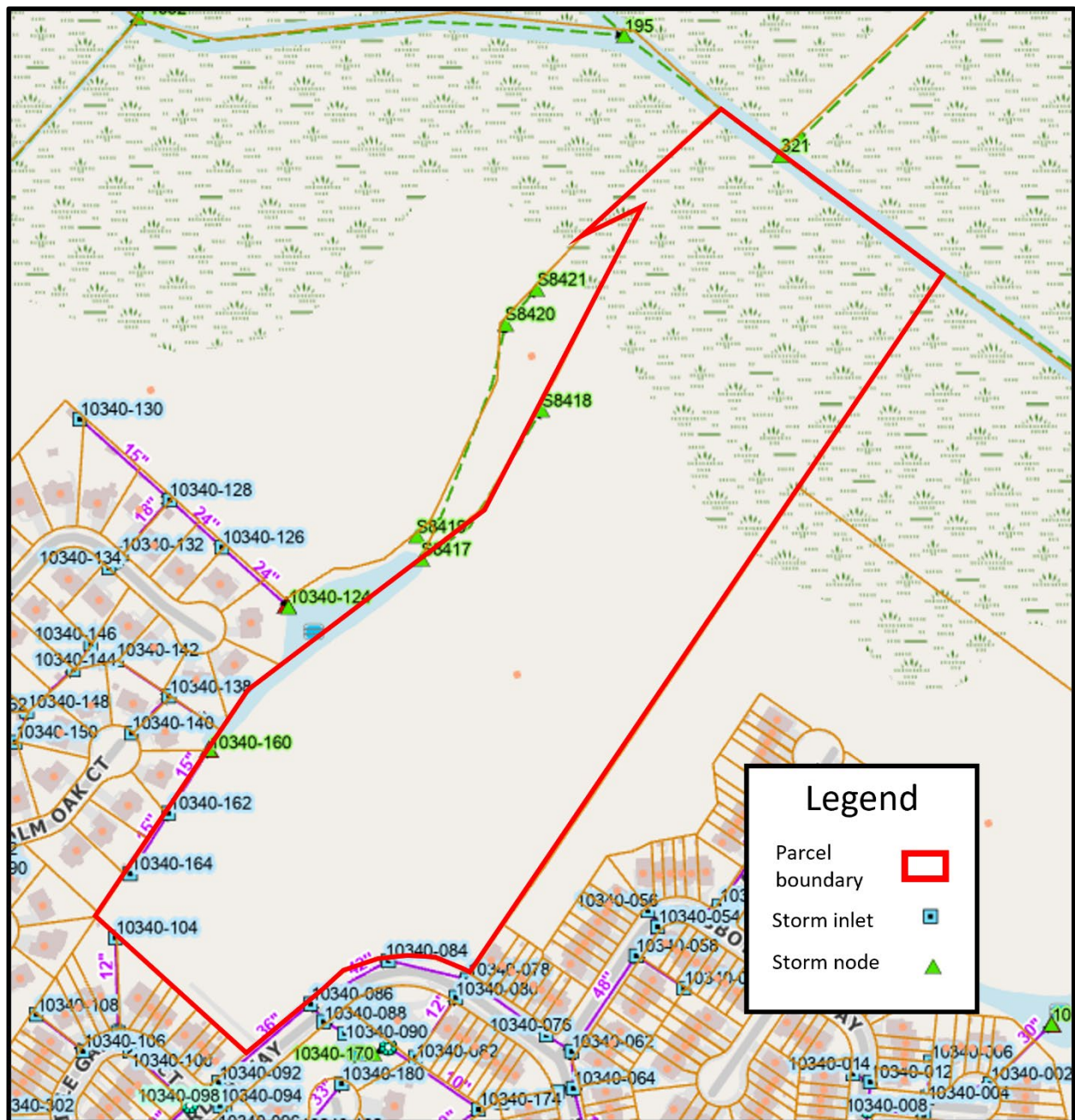




## Wilson Family Forest - City of Virginia Beach Easement Map



## City of Virginia – Stormwater Facilities



Source: [City of Virginia Beach GIS Map](#), layer folder: "Stormwater"

# Cavalier Title

Case # \_\_\_\_\_ Customers Case # \_\_\_\_\_  
Effective date: 11/9/2022 @8:00 am Backfile: ☒ Searcher:                       
Judgments: 2 TE Ucc: 0  
Problems: \_\_\_\_\_  
Buyers: \_\_\_\_\_ Judgments: \_\_\_\_\_

%% %% %% %% %% TAXES %% %% %% %% %%


Assessed in the name of: \_\_\_\_\_  
Address: Saville Garden Way, Virginia Beach Tax Bill #: 1123071968  
Gpin/Ctl/Map: 1495 43 9093 0000 Amount: \$445.50 Q: Semi Annual  
Land: 90,000 Paid thru: 1st 1/2 2021/2022  
Building:                      Del: 2nd 1/2 2021/2022 \$513.57 delinquent  
Total: 90,000 Stormwater: \_\_\_\_\_

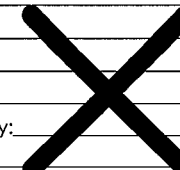
%% %% %% %% %% SOURCE %% %% %% %% %%


Db/Pg: 3309 / 1124 (developer) Date 10/23/1992  
Grantor: Hartford Development Group, Inc, a VA corp Con \$10 G&C ☒  
War GW EC ☒  
Ten TE/ROS  
Grantee: Paul L Wilson & Delores L Wilson, h/w Rec: 12/1/1993

Legal: Parcel A ( 24.939 acres) Parkside Green Section 1  
Mb/Pg: 215 / 14 et seq  
lb: 2870 / 1056

%% %% %% %% %% TRUSTS %% %% %% %% %%

Db/Pg: \_\_\_\_\_ Date: \_\_\_\_\_ Rec: \_\_\_\_\_ Type: FHA VA CONV  
Grantor:   
Trustees: \_\_\_\_\_  
Beneficiary: \_\_\_\_\_  
Amount: \_\_\_\_\_ Due: \_\_\_\_\_

Db/Pg: \_\_\_\_\_ Date: \_\_\_\_\_ Rec: \_\_\_\_\_ Type: FHA VA CONV  
Grantor:   
Trustees: \_\_\_\_\_  
Beneficiary: \_\_\_\_\_  
Amount: \_\_\_\_\_ Due: \_\_\_\_\_

Db/Pg: \_\_\_\_\_ Date: \_\_\_\_\_ Rec: \_\_\_\_\_ Type: FHA VA CONV  
Grantor:   
Trustees: \_\_\_\_\_  
Beneficiary: \_\_\_\_\_  
Amount: \_\_\_\_\_ Due: \_\_\_\_\_

Easements and Restrictions: None See Attached

# EASEMENTS AND RESTRICTIONS

Restrictions:Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_Exp:\_\_\_\_\_

Condo Declarations:Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

By-Laws:Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Supplemental: DB/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_

DB/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_

DB/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_

DB/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_

DB/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_

DB/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_

DB/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_Db/Pg:\_\_\_\_\_

Veeco:Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

Veeco:Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

Phone: Co.\_\_\_\_\_Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

Phone: Co.\_\_\_\_\_Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

Subdivision Agreement Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

Sewer and/or Water Agreement Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

Zoning Agreement Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

Other:Db/Pg: 3778 / 1510 Date: 1/21/1997 Rec: 8/25/1997

Variable Width Drainage Impoundment & Maintenance Easement

map bk 261 / 25

Other:Db/Pg: 3778 / 1506 Date: 1/21/1997 Rec: 8/25/1997

30' perpetual utility easement

MB 261 / 24

Other:Db/Pg:\_\_\_\_\_Date:\_\_\_\_\_Rec:\_\_\_\_\_

\_\_\_\_\_

Cavalier Title



0014321

BK 3778PG 1510

VARIABLE WIDTH DRAINAGE, IMPOUNDMENT AND MAINTENANCE  
EASEMENT

THIS DEED OF EASEMENT, made this 21st of January, 1997, by and between PAUL L. WILSON and DELORES L. WILSON, a husband and wife, hereinafter called the Grantors, party of the first part, and the CITY OF VIRGINIA BEACH, VIRGINIA, a municipal corporation of the Commonwealth of Virginia, hereinafter called the Grantee, party of the second part.

WITNESSETH:

That for and in consideration of the sum of Ten Dollars (\$10.00) cash in hand paid, and other good and valuable considerations, the receipt of which is acknowledged, the Grantors hereby sell, assign, transfer, grant and convey, with General Warranty and English Covenants of Title, a variable width perpetual drainage easement for purposes of construction and maintenance of Stormwater Management Facilities (SWMF) and stormwater drainage to the Grantee, its agents, assigns and successors to construct, reconstruct, alter, operate and maintain drainage facilities in, under, upon and across lands and property of the Grantors, including the right of ingress and egress to the same, and a perpetual easement for the collection, conveyance, storage, impoundment, treatment, and other associated uses of stormwater drainage over, under and across lands and property of the Grantors, including the right of ingress and egress to the same, as more particularly described as follows:

ALL THAT tract, piece or parcel of land situate in the Princess Anne Borough, City of Virginia Beach, Commonwealth of Virginia, being described as follows: Commencing at a point of intersection of the northeasterly bounds of Saville Garden Court (50' R/W) and the northwesterly bounds of Saville Garden Way (variable R/W) (Map Book 215, Page 14-19), thence N 48°04'13" E along the northwesterly bounds of Saville Garden Way 83.30' to a point in

GPIN: 1495-43-9093

MAP Book 261 Page 95

Jones, Rusotto & Walker, P.C.  
Attorneys at Law  
128 S. Lynnhaven Road  
Virginia Beach, Virginia 23452



BK3778PG1511

the southeasterly corner of Parcel A, Subdivision of Parkside Green, Section One; thence along the southerly bounds of Parcel A (Map Book 215, P. 14-19), N 49°23'30" W, 385.73; to the point of beginning in the easterly bounds of Property of Marvin W. Lucas (DB 2544, P. 36); thence N 32°37'59" E, along the easterly bounds of Property of Marvin W. Lucas, 516.82; thence N 51°05'46" E, 422.89' to a point in the southeasterly bounds of property now or formerly owned by Euphus A. Fentress & Thomas W. Fentress (D.B. 185, P.413); thence along the easterly bounds of Fentress N 46° 48' 46" E, 150.40' to a point, thence N 27°55'07" E, 285.16' to a point; thence along the easterly bounds of Fentress N 25°25'07" E, 369.80' to a point in the southerly bounds of a 100' drainage easement (Map Book 215, P. 14-19); thence along the southerly bounds of said drainage easement, S 55°02'48" E, 40.56' to a point; thence S 25°25'07" W, 464.30' to a point; thence S 27°55'07" W, 292.69' to a point; thence S 46°48'46" W, 158.55' to a point; thence S 51°05'46" W, 416.39'; thence S 32°37'59" W, 150.52' to a point; thence N 57° 22' 01", 20.00' to a point; thence S 32° 37' 59" W, 362.6' to a point; thence N 49° 23' 30" W to the point of beginning, being a variable width drainage easement containing 1.5296 acres (66,643 sq.ft.) of land.

It being a part of the same property acquired by the Grantors herein from Hartford Development Group, Inc., a Virginia corporation, by deed of gift dated October 23, 1992, and recorded in the aforesaid Clerk's Office in Deed Book 3309, at page 1124.

The Grantors by execution of this instrument acknowledge that the plans for the aforesaid project as they affect this property have been fully explained to the undersigned and that if the City of Virginia Beach, Virginia, imposes as a condition for its approval of the aforesaid project additional requirements affecting their land that they will execute appropriate documents that satisfy the City's requirements.

It is agreed between the parties hereto that the Grantee, its agents, assigns and successors shall have the right to inspect the said easements and to cut and clean all undergrowth and remove other obstructions in and along the said easements or adjacent thereto that may in any way endanger or interfere with the proper use of the same, and to make use of the adjacent property for ingress and egress and for other activities necessary to construction, reconstruction, alteration, operation and maintenance of the said facilities.


BK3778PG1512

The Grantors and their agents, assigns and successors agree that the Grantee shall not be liable for any maintenance work whatsoever to the areas encompassed in the said easements except if the Grantee is required to perform excavation within the said easement in order to effectuate maintenance or repair of said facility. All other maintenance of the areas encompassed by the said easements shall be done by the Grantors, and the Grantee shall have no duty or liability to perform any routine maintenance work in the said easement other than that work which arises out of maintaining or repairing the said facility.

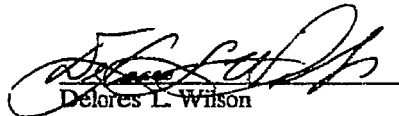
The Grantors and their agents, assigns and successors agree that when required by the Grantee, it shall remove any fence(s), structure(s), landscaping, vehicle parking or other obstruction within forty-eight hours of receipt of written notice requiring such removal. Except that in an emergency or failure to remove after written notice Grantee will remove, or have removed by others, any impediment to access, maintenance or operation and Grantors agree they are responsible for replacement of said fence(s), structure(s), landscaping, vehicle parking or other obstruction at its sole expense.

The Grantors covenant and agree for themselves, their assigns and successors, that the consideration aforementioned shall be in lieu of any and all claims of compensation and damages by reason of the location, construction, reconstruction, alteration or maintenance of the said facility.

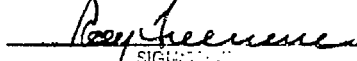
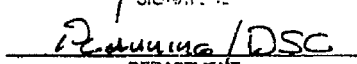
IN WITNESS WHEREOF, PAUL L. WILSON and DELORES L. WILSON, husband and wife, have caused this Declaration of Easement to be executed pursuant to due authority.

  
Paul L. Wilson

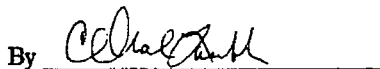
BK3778PG1513

  
Delores L. Wilson

APPROVED AS TO CONTENTS

  
SIGNED  
  
DEPARTMENT

CITY OF VIRGINIA BEACH,  
A Municipal Corporation of the  
Commonwealth of Virginia

By 

STATE OF VIRGINIA  
CITY/COUNTY OF Virginia Beach, to-wit:

I, the undersigned, a Notary Public in and for the City and State aforesaid, do hereby certify that Paul A. Wilson and Delores L. Wilson, whose names are signed to the foregoing instrument bearing date on the 21st of January, 1997, have acknowledged the same before me in my City and State aforesaid.

GIVEN under my hand this <sup>23rd</sup>~~21st~~ day of January, 1997..

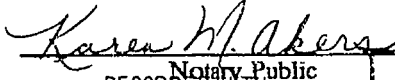
  
Notary Public

My commission expires: 8/3/97

STATE OF VIRGINIA  
CITY OF VIRGINIA BEACH, to-wit:

I, the undersigned, a Notary Public in and for the City and State aforesaid, do hereby certify that C. Dean Lambert, JR., Chief of Staff for the City of Virginia Beach, a municipal corporation of the Commonwealth of Virginia, whose name is signed to the foregoing instrument bearing date on the 21st day of January, 1997, has acknowledged the same before me in my City and State aforesaid.

GIVEN under my hand this 18th day of August 1997 km

  
Notary Public


My commission expires: 1/31/99

RECORDED WITH  
CERTIFICATE ANNEXED

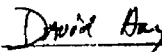
97 AUG 25 PM 1:42

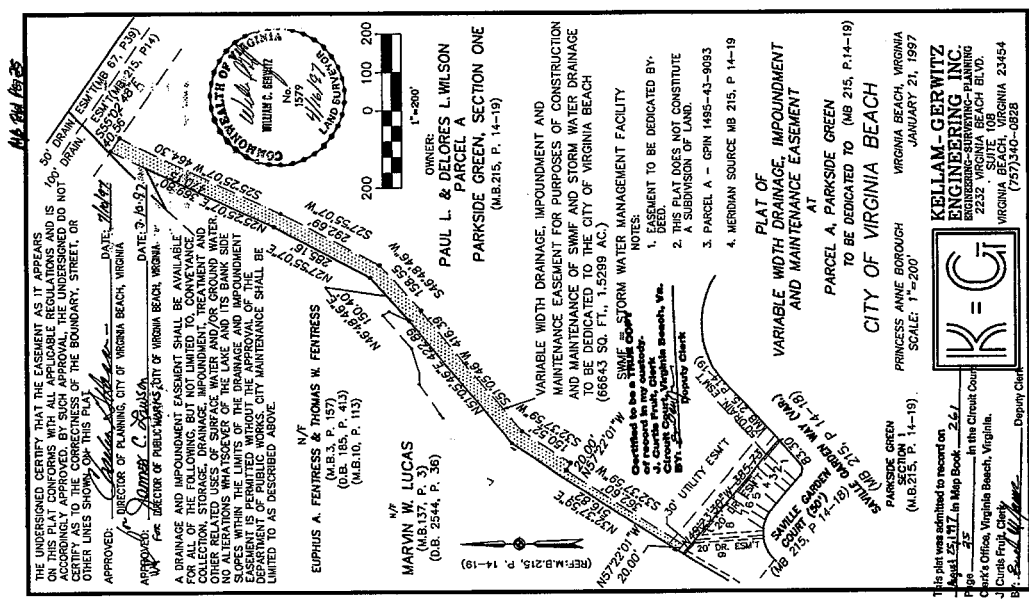
558.1-80, REV. 1-85  
VIRGINIA BEACH, VA.

TESTE:

  
CLERK, CIRCUIT COURT

APPROVED AS TO  
LEGAL SUFFICIENCY





on card 709-171

0014320

BK3778PG1506

UTILITY EASEMENT

THIS DEED OF EASEMENT, made this 21st of January, 1997 by and between PAUL L. WILSON and DELORES L. WILSON, a husband and wife, hereinafter called the Grantors, party of the first part, and the CITY OF VIRGINIA BEACH, VIRGINIA, a municipal corporation of the Commonwealth of Virginia, hereinafter called the Grantee, party of the second part.

WITNESSETH:

That for and in consideration of the sum of TEN DOLLARS (\$10.00) cash in hand paid, and other good and valuable considerations, the receipt of which is acknowledged, the Grantors hereby sell, assign, transfer, grant and convey, with GENERAL WARRANTY and ENGLISH COVENANTS OF TITLE, a 30' perpetual utility easement to the Grantee, its agents, assigns and successors to construct, reconstruct, alter, operate and maintain utility facilities in, under, upon and across lands and property of the Grantors, including the right of ingress and egress to the same, as more particularly described as follows:

ALL THAT tract, piece or parcel of land situate in the Princess Anne Borough, City of Virginia Beach, Commonwealth of Virginia, being described as follows: Commencing at a point of intersection of the northeasterly bounds of Saville Garden Court (50' R/W) and the northwesterly bounds of Saville Garden Way (variable R/W) (Map Book 215, Page 14-19), thence N 48°04'13" E along the northwesterly bounds of Saville Garden Way 98.42' to a point in the southeasterly corner of Parcel A, Subdivision of Parkside Green, Section One; thence along the southerly bounds of Parcel A (Map Book 215, P. 14-19), N 49°23'30" W, 389.8' to a point in the easterly bounds of Property of Marvin W. Lucas (DB 2544, P. 36); thence N 32°37'59" E, along the easterly bounds of Property of Marvin W. Lucas, 30.29' to a point; thence S 49° 23' 30" E 397.93' to a point on the northern boundary of Saville Garden Way (Map Book 215, P. 14); thence S 48° 04' 13" W to the point of beginning, utility easement containing 0.271 acres (11,816 sq.ft.) of land.

GPIN: 1495-43-9993

Map Book 215 Page 24

Jones, Rusotto & Walker, P.C.  
Attorneys at Law  
128 S. Lynnhaven Road  
Virginia Beach, Virginia 23452

BK 3778 PG 1507

It being a part of the same property acquired by the Grantors herein from Hartford Development Group, Inc., a Virginia corporation, by deed of gift dated October 23, 1992, and recorded in the aforesaid Clerk's Office in Deed Book 3309, at page 1124.

The Grantors by execution of this instrument acknowledge that the plans for the aforesaid project as they affect this property have been fully explained to the undersigned and that if the City of Virginia Beach, Virginia, imposes as a condition for its approval of the aforesaid project additional requirements affecting their land that they will execute appropriate documents that satisfy the City's requirements.

It is agreed between the parties hereto that the Grantee, its agents, assigns and successors shall have the right to inspect the said easement and to cut and clean all undergrowth and remove other obstructions in and along the said easements or adjacent thereto that may in any way endanger or interfere with the proper use of the same, and to make use of the adjacent property for ingress and egress and for other activities necessary to construction, reconstruction, alteration, operation and maintenance of the said facilities.

The Grantors and their agents, assigns and successors agree that the Grantee shall not be liable for any maintenance work whatsoever to the areas encompassed in the said easement except if the Grantee is required to perform excavation within the said easement in order to effectuate maintenance or repair of said facility. All other maintenance of the areas encompassed by the said easement shall be done by the Grantors, and the Grantee shall have no duty or liability to perform any routine maintenance work in the said easement other than that work which arises out of maintaining or repairing the said facility.

The Grantors and their agents, assigns and successors agree that when required by the Grantee, it shall remove any fence(s), structure(s), landscaping, vehicle parking or other

BK 3778PG1508

I, the undersigned, a Notary Public in and for the City and State aforesaid, do hereby certify that Paul A. Wilson and Delores L. Wilson, whose names are signed to the foregoing instrument bearing date on the 21st of January, 1997, have acknowledged the same before me in my City and State aforesaid.

GIVEN under my hand this 23rd day of January, 1997.

Bruce A. Johnson  
Notary Public

My commission expires: 8/31/97

STATE OF VIRGINIA  
CITY OF VIRGINIA BEACH, to-wit:

I, the undersigned, a Notary Public in and for the City and State aforesaid, do hereby certify that C. Deane Lambert, Jr., Chief of Staff for the City of Virginia Beach, a municipal corporation of the Commonwealth of Virginia, whose name is signed to the foregoing instrument bearing date on the 21st of January, 1997 has acknowledged the same before me in my City and State aforesaid.

GIVEN under my hand this 18<sup>th</sup> day of August, 1997.

Karen M. Akers  
Notary Public

My commission expires: 1/31/99

APPROVED AS TO COPY  
[Signature]

- 5 -

APPROVED AS TO  
LEGAL SUFFICIENCY  
David Gray





Map 215, P. 24

BY SUCH APPROVAL, THE UNDERSIGNED DO NOT CERTIFY AS TO THE CORRECTNESS OF THE BOUNDARY, STREET, OR OTHER LINES SHOWN ON THIS PLAT.

APPROVED: Charles O. West DATE: 7/16/77  
DIRECTOR OF PLANNING, CITY OF VIRGINIA BEACH, VIRGINIA  
APPROVED: Charles O. West DATE: 7-17-77  
DIRECTOR OF PUBLIC UTILITIES, CITY OF VIRGINIA BEACH, VIRGINIA

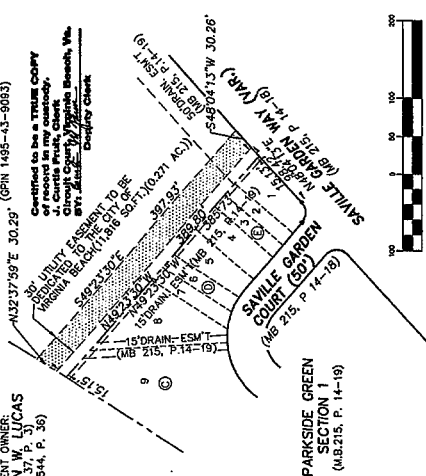
VIRGINIA:  
IN THE CLERK'S OFFICE OF THE CIRCUIT COURT OF VIRGINIA BEACH, VIRGINIA, ON THE 15<sup>TH</sup> DAY OF August, 1977, THIS PLAT WAS RECEIVED AND ADMITTED TO RECORD IN MAP BOOK 261

AT PAGE 36 TESTE: J. CURTIS FRUIT, CLERK  
By: [Signature] p.c.

CURRENT OWNER:  
PAUL L. & DELORES L. WILSON  
PARCEL A  
PARKSIDE GREEN, SECTION ONE  
(M.B. 215, P. 14-19)  
(OPN 1495-43-9093)

CURRENT OWNER:  
MARCELO J. LUCAS  
(O.B. 2544, P. 36)

Certified to be a TRUE COPY  
of the original plat on file  
in the Clerk's Office of the  
Circuit Court of Virginia Beach, Va.  
J. Curtis Fruit, Clerk  
City of Virginia Beach, Va.

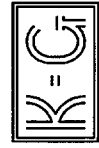


- NOTES:
1. EASEMENT TO BE DEDICATED BY DEED.
  2. THIS PLAT DOES NOT CONSTITUTE A SUBDIVISION OF LAND.
  3. PARCEL A - GPN 1495-43-9093
  4. MERIDIAN SOURCE MB 215, P. 14-19

PLAT OF  
30' UTILITY EASEMENT  
AT  
PARCEL A, PARKSIDE GREEN  
TO BE DEDICATED TO (MB 215, P. 14-19)  
CITY OF VIRGINIA BEACH



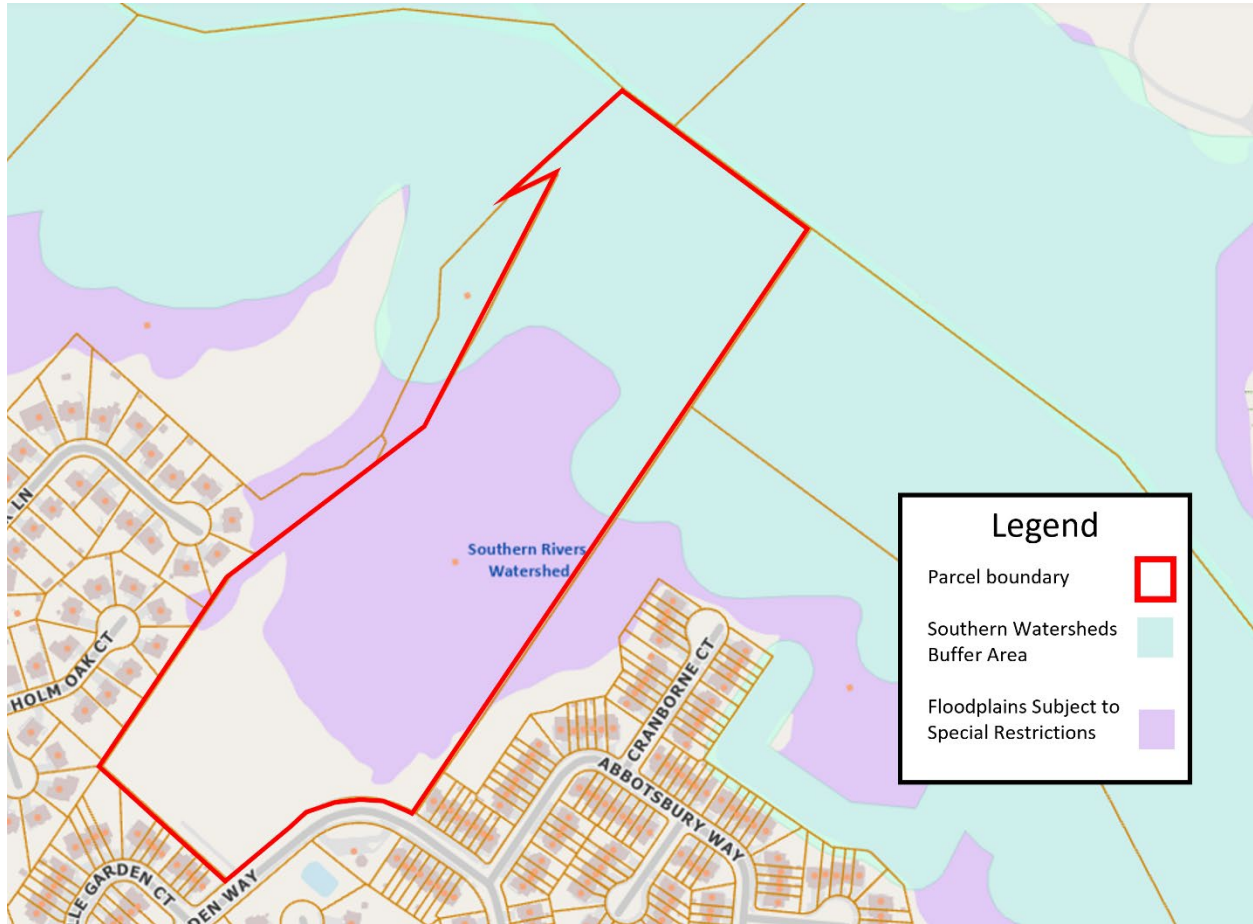
PRINCESS ANNE BOROUGH VIRGINIA BEACH, VIRGINIA  
SCALE: 1"=100'  
JANUARY 29, 1996



KELLAM-GERWITZ  
ENGINEERING, INC.  
ENGINEERING-SURVEYING-PLANNING  
2232 VIRGINIA BEACH BLVD.  
VIRGINIA BEACH, VIRGINIA 23464  
(804)340-0828

ON CARD 709-171

## Wilson Family Forest – Floodplain and Watershed Buffer Map



The following pages include relevant sections of the ordinance text, with pertinent items highlighted.

## APPENDIX G - SOUTHERN RIVERS WATERSHED MANAGEMENT ORDINANCE

### Sec. 4. Definitions.

The following words and terms used in this ordinance shall have the following meanings, unless the context clearly indicates otherwise:

- (a) *Agricultural lands*: Those lands used for the planting and harvesting of crops or plant growth of any kind in the open, pasture, horticulture, dairy farming, floriculture, or the raising of poultry or livestock.
- (b) *Best management practice (BMP)*: A practice, or combination of practices, determined to be the most effective practical means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.
- (c) *Clearing*: The removal of vegetation from surface soils.
- (d) *Construction footprint*: The area of all impervious surface created by development of land, including, but not limited to, buildings, roads, construction staging areas, drives, parking areas and sidewalks, and any other land disturbed for the construction of such improvements.
- (e) *Conventional tillage*: The combined primary and secondary tillage operations normally performed in preparing a seedbed for a given crop grown in a given geographical area.
- (f) *Critical-edge habitat*: Those lands adjacent to wetlands and waterways that provide for flood control, water quality enhancement, wildlife use, public access and recreation, and aesthetics.
- (g) *Detention*: The collection and storage of surface water for subsequent gradual discharge.
- (h) *Developer*: Any person who engages in development, either as an owner, or as the agent or representative of an owner, of property.
- (i) *Development*: The construction, alteration or installation of any structure or other improvement upon a parcel of land, or any land disturbance, whether or not undertaken in connection with development, but not including activities associated with agriculture or silviculture or the construction of improvements used primarily for agricultural purposes. For floodplain management purposes, development means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, the placement of manufactured homes, streets, mining, dredging, filling, grading, paving, excavation or drilling operations, storage of equipment or materials, or the subdivision of land.
- (j) *Drainage facility*: Any manmade or artificially altered component of the drainage system.
- (k) *Drainage system*: The system through which water flows from the land, including all watercourses, water bodies and wetlands.
- (l) *Erosion*: The wearing or washing away of soil by the action of wind, water or other natural processes.
- (m) *Flood*: A general or temporary condition of partial or complete inundation of normally dry land areas from:
  - (1) The overflow of inland or tidal waters; or
  - (2) The unusual and rapid accumulation of runoff of surface waters from any source, or Mudflows, which are proximately caused by flooding as defined in paragraph (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.

The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which that results in flooding as defined in paragraph 1(a) of this definition.

- (n) *Floodplain*: Any land area susceptible to being inundated by water from any source.
- (o) *Forebay*: An extra storage area provided near the inlet to a best management practice facility to trap incoming sediments.
- (p) *Grade control structures*: A mechanical device used to collect surface water from a given elevation and outlet it at a lower elevation for purposes of minimizing erosion of a slope or ditch bank.
- (q) *Hoe drain or power take-off drain*: A shallow surface drain constructed perpendicular to the orientation of rows of crops, used for the purpose of collecting and transporting excessive water.
- (r) *Impervious surface*: A surface which is compacted or covered with a layer of material so that it is highly resistant to infiltration by water, including, but not limited to, most conventionally surfaced streets, roofs, sidewalks, parking lots, and other similar structures.
- (s) *Land disturbance*: Any activity which causes, contributes to, or results in the removal, destruction or covering of the vegetation upon any land, including, but not limited to, clearing, dredging, filling, grading or excavating. The term shall not include minor activity such as home gardening, individual home landscaping and home maintenance.
- (t) *Natural heritage resources*: Rare, threatened or endangered species and their habitat, rare or state-significant natural communities or geologic sites, and similar features of scientific interest benefiting the welfare of the citizens of the commonwealth pursuant to the Virginia Natural Area Preserves Act of 1989.
- (u) *Natural system*: A system which predominantly consists of or uses those communities of plants, animals, bacteria and other flora and fauna which occur indigenously on the land, in the soil, or in the water.
- (v) *Nontidal wetlands*: Those wetlands, other than tidal wetlands, that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, as identified or referred to in the City of Virginia Beach Soil Survey by soil names Backbay Mucky Peat; Duckston portion of Corolla-Duckston Fine Sands; Dorovan Mucky Peat; Duckston Fine Sand; Nawney Silt Loam; Pamlico Mucky Peat; Rapahannock Mucky Peat, Strongly Saline or Pocaty Peat; and any other lands which under normal conditions are saturated to the ground surface and connected by surface flow and contiguous to tidal wetlands or tributary streams.
- (w) *Noxious weed*: A plant which is undesirable because it conflicts with, restricts or otherwise interferes with management objectives of this ordinance, including, but not limited to, Johnsongrass, Purple Loosestrife and Shattercane.
- (x) *Person*: An individual, fiduciary, corporation, firm, partnership, association, organization, municipal corporation or other entity or combination thereof.
- (y) *Property line ditch*: A ditch or canal used as, or located upon, a boundary between adjacent properties in private ownership.
- (z) *Receiving body*: Any water body, watercourse or wetland into which surface waters flow, either naturally, in manmade ditches or in a closed conduit system.
- (aa) *Retention*: The collection and storage of runoff without subsequent discharge to surface waters.
- (bb) *Sediment*: Particulate material, whether mineral or organic, that is in suspension or has settled in a water body.
- (cc) *Sedimentation facility*: Any structure or area which is designed to hold runoff water until suspended sediments have settled.
- (dd) *Shoreline*: The interface between land and the ordinary high-water mark.
- (ee) *Silviculture*: The care and cultivation of forest trees.

- (ff) *Site*: Any tract or parcel of land, or combination of tracts, lots or parcels of land which are in common ownership or are contiguous and in diverse ownership where development is to be performed as part of a subdivision or construction project.
- (gg) *Special flood hazard area*: The land in the floodplain subject to the one (1) percent or greater chance of being flooded in any given year as set forth in the Floodplain Ordinance (Appendix K).
- (hh) *Structure*: That which is built or constructed, an edifice or building of any kind or any piece of work artificially built up or composed of parts joined together in some definite manner, but not including fences or signs. For floodplain management purposes, a structure means a walled and roofed building, including a gas or liquid storage tank that is principally above ground, as well as a manufactured home.
- (ii) *Subdivision*: The division of any parcel of land into two (2) or more lots or parcels. The term shall include all changes in lot lines, the creation of new lots involving any division of an existing lot or lots and, if a new street is involved in such division, any division of a parcel of land. When appropriate to the context, the term shall also include the process of subdividing and the territory subdivided.
- (jj) *Tidal wetlands*: Vegetated and nonvegetated wetlands, as defined in section 1401 of the City Zoning Ordinance [Appendix A].
- (kk) *Tillage equipment*: Farm equipment commonly used to invert the soil surface layer, including, but not limited to, disc harrows and moldboard plows.
- (ll) *Tributary stream*: A watercourse contiguous to wetlands or shorelines, as defined in this ordinance.
- (mm) *Vegetation*: All plant growth, including, but not limited to, trees, shrubs, vines, ferns, herbs, mosses and grasses.
- (nn) *Waters or community of waters*: Any and all water on or beneath the surface of the ground, including the water in any watercourse, water body or drainage system and diffused surface water and water percolating, standing or flowing beneath the surface of the ground, as well as coastal waters.
- (oo) *Watercourse*: Any natural or artificial lake, stream, river, creek, channel, ditch, canal, waterway, gully, ravine, swale or wash in which water flows, either continuously, periodically, or intermittently, and which has a definite channel, bed or banks.
- (pp) *Water-dependent facility*: A development of land which must be located on a shoreline by reason of its intrinsic nature, including, but not limited to, ports, intake and outfall structures of power plants, water treatment plants, sewage treatment plants, storm sewer outfalls, marinas and other boat docking structures, beaches and other public water-oriented recreational areas, fisheries or other marine resource facilities and shoreline protection measures as authorized under the provisions of the Wetlands Zoning Ordinance. [Appendix A, § 1400 et seq.]. In the case of facilities having both water-dependent components and components which are not water-dependent, only those portions which are water-dependent shall fall within this definition.
- (qq) *Wetlands*: Tidal and nontidal wetlands as defined herein.

(Ord. No. 2562 9-14-99; Ord. No. 2673, 10-23-01; Ord. No. 3315, 11-26-13)

## **Sec. 5. Applicability.**

This ordinance shall apply to:

- (a) Development upon any lands or waters within the watershed of the North Landing River, the Northwest River, the Small Coastal South Watershed, or Back Bay, which watersheds are collectively referred to herein as the Southern Rivers Watershed;
- (b) Any artificial alteration of the level or flow of any watercourse or impoundment of water; and
- (c) To the extent set forth in section 10 of this ordinance, agricultural activities within the Southern Rivers Watershed.

(Ord. No. 2603, 7-14-2000; Ord. No. 3370, 9-16-14)

## **Sec. 10. Agricultural lands.**

- (a) Persons engaged in agricultural activities are encouraged to explore and make use of all available resources offered in connection with the conservation of agricultural lands, including personal contacts, on-site field studies concerning the usage of potential agricultural best management practices, focused educational programs, demonstration and education projects, cost-share incentives and technical assistance provided by city, state and federal resource agencies.
- (b) The director of the department of agriculture, in concert with the Virginia Department of Agriculture and Consumer Services, Virginia Department of Forestry and the United States Department of Agriculture, Soil Conservation Service, shall coordinate the exploration of all available resources as described in section 10(a) of this ordinance. The director shall maintain a record of all efforts relating to the development of individual farm conservation plans, cost-share incentives, focused educational programs and the development and implementation of agricultural best management facility projects, and shall report thereupon every six (6) months to the city council.

(Ord. No. 2562, 9-14-99)



## APPENDIX K – FLOODPLAIN ORDINANCE

### Sec. 1.2. Applicability.

These provisions shall apply to all privately and publicly owned lands within the jurisdiction of the City of Virginia Beach and identified as areas at risk of flooding by the City of Virginia Beach or shown on the Flood Insurance Rate Map (FIRM) or included on the flood insurance study (FIS) that are provided to the City of Virginia Beach by the Federal Emergency Management Agency (FEMA) and dated January 16, 2015.

(Ord. No. 3309, 11-26-13; Ord. No. 3376, 10-7-14; Ord. No. 3685, 2-1-22)

### Sec. 1.3. Definitions.

*Base flood.* The flood having a one (1) percent chance of being equaled or exceeded in any given year; also referred to as the one hundred (100) year flood.

*Base flood elevation.* The FEMA designated one (1) percent annual chance water surface elevation. The water surface elevation of the base flood in relation to the datum specified on the city's FIRM.

*Basement.* Any area of the building having its floor sub-grade (below ground level) on all sides.

*Breakaway wall.* A wall that is not part of the structural support of the building and is intended, through its design and construction, to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or the supporting foundation system.

*City council.* The body designated to review appeals made by individuals with regard to decisions of the floodplain administrator in the interpretation of this ordinance.

*City manager.* The City Manager of the City of Virginia Beach, or his designees.

*Design Flood Elevation (regulatory flood protection elevation).* The base flood elevation plus the freeboard required by this ordinance.

*Development.* Any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, the placement of manufactured homes, streets, mining, dredging, filling, grading, paving, excavation or drilling operations, storage of equipment or materials, or the subdivision of land.

*Elevated building.* A non-basement building built to have the lowest floor elevated above the ground level by means of solid foundation perimeter walls, pilings, or columns (posts and piers).

*Encroachment.* The advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures, or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

*Existing construction.* Structures for which the "start of construction" commenced before the effective date of the most recent FIRM (January 16, 2015) "Existing construction" may also be referred to as "existing structures."

*Flood or flooding.*

1. A general or temporary condition of partial or complete inundation of normally dry land areas from:
  - a. The overflow of inland or tidal waters;
  - b. The unusual and rapid accumulation or runoff of surface waters from any source; or
  - c. Mudflows, which are proximately caused by flooding as defined in paragraph 1.b. of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
2. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or

suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event that results in flooding as defined in paragraph 1.a. of this definition.

*Flood Insurance Rate Map (FIRM).* An official map of the city, on which FEMA has delineated both the special flood hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).

*Flood Insurance Study (FIS).* A report by FEMA that examines, evaluates, and determines flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation, and determination of mudflow and flood-related erosion hazards.

*Floodplain.* Any land area susceptible to being inundated by water from any source.

*Flood proofing.* Any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, or structures and their contents.

*Floodway.* The channel of a river or other watercourse and the adjacent land areas that shall be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot. The "floodway" may also be referred to as the "regulatory floodway".

*Freeboard.* A factor of safety usually expressed in feet above the base flood elevation for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization in the watershed. When a freeboard is included in the height of a structure, the flood insurance premiums may be less expensive.

*Highest adjacent grade.* The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

*Historic structure.* Any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
3. Individually listed on a state inventory of historic places in states with historic preservation programs that have been approved by the Secretary of the Interior; or
4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
  - a. By an approved state program as determined by the Secretary of the Interior; or
  - b. Directly by the Secretary of the Interior in states without approved programs.

*Hydrologic and Hydraulic Engineering Analysis.* Analyses performed by a professional engineer licensed by the Commonwealth of Virginia, in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the base flood, other frequency floods, flood elevations, floodway information and boundaries, and flood profiles.

*Letters of map change (LOMC).* A letter of map change is an official FEMA determination, by letter, that amends or revises an effective FIRM or FIS. Letters of map change include:

1. *Letter of map amendment (LOMA)*: An amendment based on technical data showing that a property was incorrectly included in a designated special flood hazard area (SFHA). A LOMA amends the current effective FIRM and establishes that a land as defined by metes and bounds or a structure is not located in a SFHA.
2. *Letter of map revision (LOMR)*: A revision based on technical data that may show changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features. A letter of map revision based on fill (LOMR-F) is a determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer exposed to flooding associated with the base flood. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the city's floodplain management ordinance.
3. *Conditional letter of map revision (CLOMR)*: A formal review and comment as to whether a proposed flood protection project or other project complies with the minimum National Flood Insurance Program (NFIP) requirements for such projects with respect to delineation of SFHAs. A CLOMR does not revise the effective FIRM or FIS.

*Lowest floor*. The lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Federal Code 44CFR § 60.3.

*Manufactured home*. A structure, transportable in one or more sections, that is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term "manufactured home" also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than one hundred eighty (180) consecutive days, but does not include a recreational vehicle.

*Manufactured home park or subdivision*. A parcel (or contiguous parcels) of land divided into two (2) or more manufactured home lots for rent or sale.

*Market value*. The value of a structure, established prior to the damage in question, as determined by property values used for tax assessment purposes (assessment) as adjusted by the Virginia Beach Real Estate Assessor (market factor) to reflect current market conditions, or as determined by an independent appraisal done by a professional appraiser.

*New construction*. For the purposes of determining insurance rates, structures for which the "start of construction" commenced on or after October 3, 1970 and includes any subsequent improvements to such structures. For floodplain management purposes, new construction means structures for which the start of construction commenced on or after the effective date of a floodplain management ordinance adopted by the city and includes any subsequent improvements to such structures.

*Post-FIRM structures*. A structure for which construction or substantial improvement occurred after October 3, 1970.

*Pre-FIRM structures*. A structure for which construction or substantial improvement occurred on or before October 3, 1970.

*Recreational vehicle*. A vehicle that is:

1. Built on a single chassis;
2. Four hundred (400) square feet or less when measured at the largest horizontal projection;
3. Designed to be self-propelled or permanently towable by a light duty truck; and
4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.

*Repetitive loss.* Flood-related damages to a structure sustained on two (2) separate occasions during a ten-year period for which the cost of repairs at the time of each flood event, on average, equals or exceeds twenty-five (25) percent of the market value of the structure before the most recent damage occurred.

*Special flood hazard area (SFHA).* The land in the floodplain subject to a one (1) percent or greater chance of being flooded in any given year as set forth in this ordinance. These areas are designated as AE, AH, AO, A, and VE on the FIRM.

*Start of construction.* For other than new construction and substantial improvement under the Coastal Barrier Resources Act (P.L. 97-348), means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement, or other improvement was within one hundred eighty (180) days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of the construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

*Structure.* For floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

*Substantial damage.* Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred.

*Substantial improvement.* Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure before the start of construction of the improvement. This term includes structures that have incurred substantial damage regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications that have been identified by the local code enforcement official and are the minimum necessary to assure safe living conditions; or
2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.
3. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, shall comply with all ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement will cause removal of the structure from the National Register of Historic Places or the State Inventory of Historic places shall be obtained from the Secretary of the Interior or the State Historic Preservation Officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.

*Violation.* The failure of a structure or other development to be fully compliant with the provisions of the floodplain ordinance in effect at the time of construction or development. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this ordinance is presumed to be in violation until such time as that documentation is provided.

*Watercourse.* Any natural or artificial lake, river, creek, stream, ditch, channel, waterway, gully, ravine, swale, or wash in which water flows, either continuously, periodically, or intermittently, and which has a definite channel, bed, or banks.

(Ord. No. 3309, 11-26-13; Ord. No. 3376, 10-7-14; Ord. No. 3580, 2-5-19; Ord. No. 3685, 2-1-22)

#### **Sec. 4.4. Floodway requirements.**

The following provisions shall apply within the Floodway District of an AE zone:

- A. Within any floodway area, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment will not affect normal flood flow, result in any increase in flood levels within the community, increase erosion within or adjoining to the floodway, cause the diversion of floodwaters during the occurrence of the base flood discharge, increase peak flows or velocities in a manner likely to lead to added property damage or hazards to life, or increase the amounts of damaging materials that might be transported in floods. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently-accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the floodplain administrator.

Encroachments, including fill, new construction, substantial improvements, and other development within the floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge is specifically prohibited. No variance shall be granted for any development, use, or activity that would cause any increase in the water surface elevation of the base flood.

If the above provisions are satisfied, all new construction and substantial improvements shall comply with all applicable provisions of article 4.

- B. The placement of new or replacement manufactured homes (mobile homes) is prohibited.

(Ord. No. 3309, 11-26-13; Ord. No. 3685, 2-1-22)

#### **Sec. 4.5. AE or AH Zone requirements.**

The following provisions shall apply in the AE or AH Zones:

- A. Until a regulatory floodway is designated, no new construction, substantial improvements or other development (including fill) shall be permitted within the areas of special flood hazard, designated as Zone AE or AH on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the city.
- B. Notwithstanding the criteria set forth in section 4.10, development activities in Zones AE or AH on the City of Virginia Beach FIRM that increase the water surface elevation of the base flood by more than one (1) foot may be allowed, provided that the applicant first applies, with the City of Virginia Beach's endorsement, for a conditional letter of map revision, and receives the approval of FEMA.

(Ord. No. 3309, 11-26-13; Ord. No. 3376, 10-7-14)

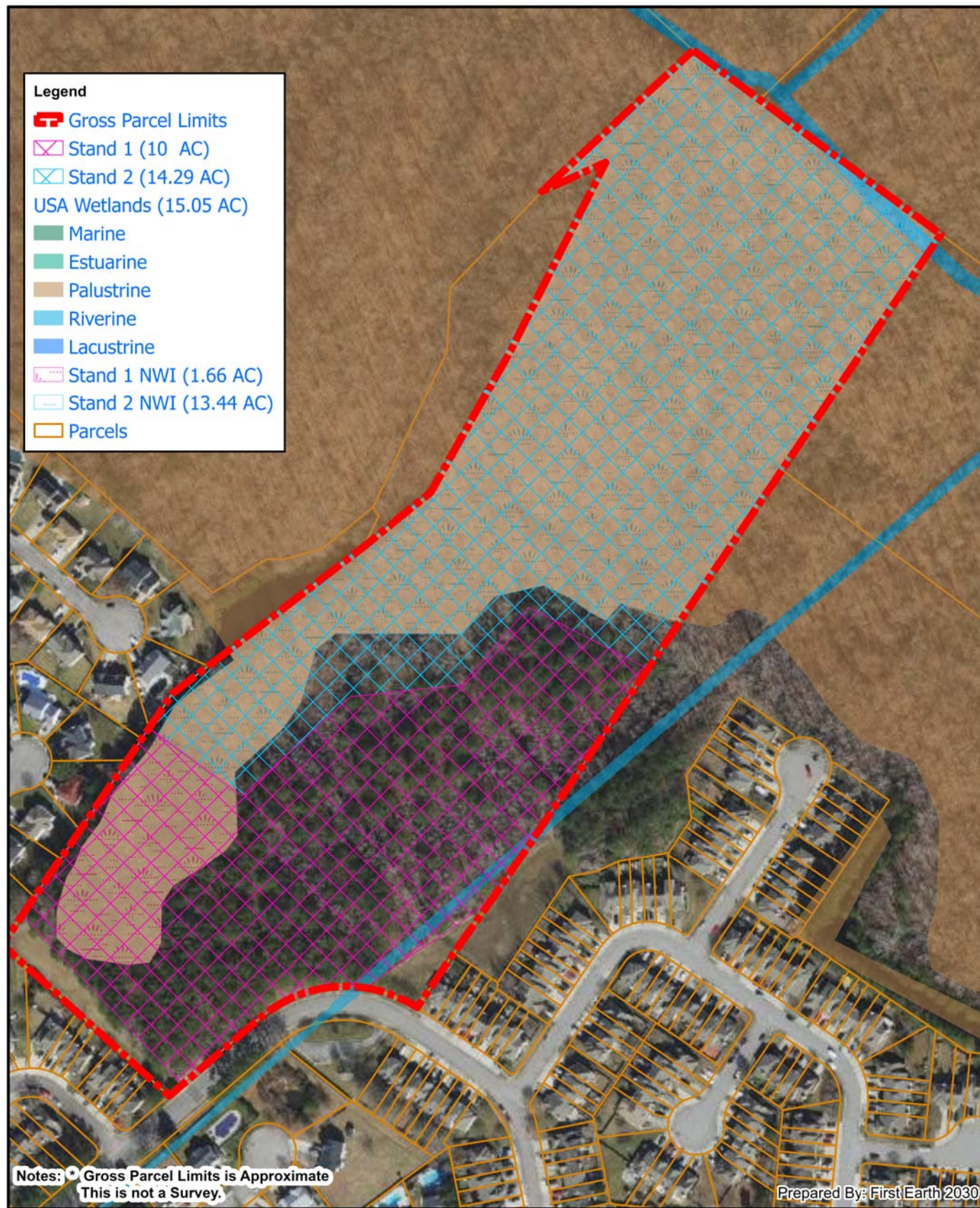
#### **Sec. 4.10. Floodplain subject to special restrictions.**

- A. All SFHAs that ultimately drain to Back Bay or the Currituck Sound shall be identified as a floodplain subject to special restrictions.

- B. The following provisions shall apply within the floodplain subject to special restrictions:
1. Notwithstanding any provision of this ordinance to the contrary, no filling shall be permitted, including filling with material excavated from the same floodplain except for:
    - a. The purpose of public roadway or other similar public works construction undertaken by the Department of Public Works or Virginia Department of Transportation, or their agent for construction. This construction includes flood protection and flood mitigation projects;
    - b. The maintenance, alteration, or relocation of bona fide agricultural ditches, swales, or agricultural pathways or those ditches required for proper lot drainage;
    - c. For shoreline stabilization or maintenance projects, such as riprap revetment, bulkheads, or other treatment used to stabilize and protect the banks of waterways, the city manager or his designee may approve the placement of fill provided the following criteria are met:
      - i. A joint permit application is submitted;
      - ii. The alignment of the stabilization structure is along the escarpment or in line with adjacent stabilization structures;
      - iii. If there is an existing shoreline stabilization structure, any proposed replacement structure shall be no more than six (6) inches higher than the existing structure; and
      - iv. Fill must be the minimum necessary to support the stabilization project.
  2. The city manager, or his designee, may approve the placement of fill provided that the following criteria are met:
    - a. Proposed fill within the floodplain:
      - i. Shall be mitigated to result in no decrease in flood storage volume on the site;
      - ii. Shall be mitigated entirely on the same site that will incur the fill;
      - iii. Shall be contiguous to the existing floodplain that is being filled; and
      - iv. Shall be limited to the smallest amount of area and volume possible to correct irregularities within the boundary of the project.
    - b. The combined areas of fill and mitigation shall not exceed five (5) percent of the total area within the floodplain located on the site that will incur the fill.
  3. Residential dwelling structures shall not be located within the floodplains subject to special restrictions on lots created after October 23, 2001. Residential dwelling structures located in a SFHA and constructed prior to October 23, 2001 may be expanded with attached additions to a total footprint of less than one thousand (1,000) square feet; such additions shall also comply with the requirements set forth in article V of this ordinance.
  4. On lots where single family dwellings are permitted by right and which were recorded on or before October 23, 2001 and meet the requirements of section 402(b) of the city zoning ordinance, the minimum fill necessary shall be permitted only for the following:
    - a. A driveway or other on-site parking area;
    - b. To ensure the proper functioning of a septic system;
    - c. To ensure proper lot drainage given the existing and proposed development in the immediate area; and
    - d. To meet the VA USBC requirements for slab or crawl foundations.

(Ord. No. 3309, 11-26-13; Ord. No. 3371, 9-16-14; Ord. No. 3685, 2-1-22)





## Wilson Family Forest Stand Map (NWI Exhibit)

Prepared By:  
First Earth 2030  
tee@firstearth.eco  
804.687.1869

## **Wilson Family Forest - US Army Corps of Engineers - No Permit to Harvest Trees**

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**Subject:** RE: [URL Verdict: Unknown][Non-DoD Source] USACE Rep in Virginia beach dealing with timber harvest

---

**From:** Kube, Peter R CIV USARMY CENAO (USA) <[Peter.R.Kube@usace.army.mil](mailto:Peter.R.Kube@usace.army.mil)>

**Sent:** Thursday, March 16, 2023 2:49 PM

**To:** [tee@broadwaterinnovations.org](mailto:tee@broadwaterinnovations.org)

**Subject:** RE: [URL Verdict: Unknown][Non-DoD Source] USACE Rep in Virginia beach dealing with timber harvest

Tee,

Not sure exactly what you are asking, but no permit is required to cut trees above the soil surface in wetlands. As long as there is no discharge of fill material in jurisdictional areas, no Section 404 Clean Water Act permit is required.

Thanks.

Peter Kube, Chief

Eastern Virginia Regulatory Section

US Army Corps of Engineers

803 Front Street

Norfolk, VA 23510

Phone (757) 201-7504

The Norfolk District is committed to providing the highest level of support to the public. In order for us to better serve you, we would appreciate you completing our Customer Satisfaction Survey located at <http://per2.nwp.usace.army.mil/survey.html>. We value your comments and appreciate your taking the time to complete the survey.

---

**From:** Richardson, Jeanne C CIV USARMY CENAO (USA) <[Jeanne.C.Richardson@usace.army.mil](mailto:Jeanne.C.Richardson@usace.army.mil)>

**Sent:** Thursday, March 16, 2023 2:07 PM

**To:** Kube, Peter R CIV USARMY CENAO (USA) <[Peter.R.Kube@usace.army.mil](mailto:Peter.R.Kube@usace.army.mil)>

**Cc:** [tee@broadwaterinnovations.org](mailto:tee@broadwaterinnovations.org)

**Subject:** FW: [URL Verdict: Unknown][Non-DoD Source] USACE Rep in Virginia beach dealing with timber harvest

Peter,

I am sending this to you as the project appears to be in VA Beach. Would you mind forwarding to one of your PMs so they can address Tee's question.

Thanks, J

*Jeanne C. Richardson*

Western Virginia Regulatory Section  
Compensatory Mitigation Team Lead

\*\*\*NOTE NEW PHONE NUMBER\*\*\*  
(C) 434.459.8160



\*\*\*NOTE NEW MAILING ADDRESS\*\*\*

US Army Corps of Engineers-Norfolk District  
Lynchburg Field Office  
803 Front Street  
Norfolk, VA 23510

The Norfolk District is committed to providing the highest level of support to the public. In order for us to better serve you, please complete our Customer Satisfaction Survey at:

<https://regulatory.ops.usace.army.mil/ords/f?p=136:4>

---

**From:** [tee@broadwaterinnovations.org](mailto:tee@broadwaterinnovations.org) <[tee@broadwaterinnovations.org](mailto:tee@broadwaterinnovations.org)>

**Sent:** Thursday, March 16, 2023 1:08 PM

**To:** Richardson, Jeanne C CIV USARMY CENAO (USA) <[Jeanne.C.Richardson@usace.army.mil](mailto:Jeanne.C.Richardson@usace.army.mil)>

**Subject:** [URL Verdict: Unknown][Non-DoD Source] USACE Rep in Virginia beach dealing with timber harvest

Jeanne,

I hope things are well. Quick question outside of BWI work.

I am working on a carbon project with another entity. We are trying to prove that a section of timber within the wetlands inventory could be harvested in order to get credit for not harvesting it.

I know it can be harvested, I just need to get a letter to that effect, ideally from someone at the Corps. Do you know who I would talk to about that? The project is in Va Beach.

Thanks!

Tee


Tee Clarkson  
Executive Director, Broad Water Innovations  
[Broad Water Innovations](#)  
804-687-1869


## Threat of Loss Demonstration

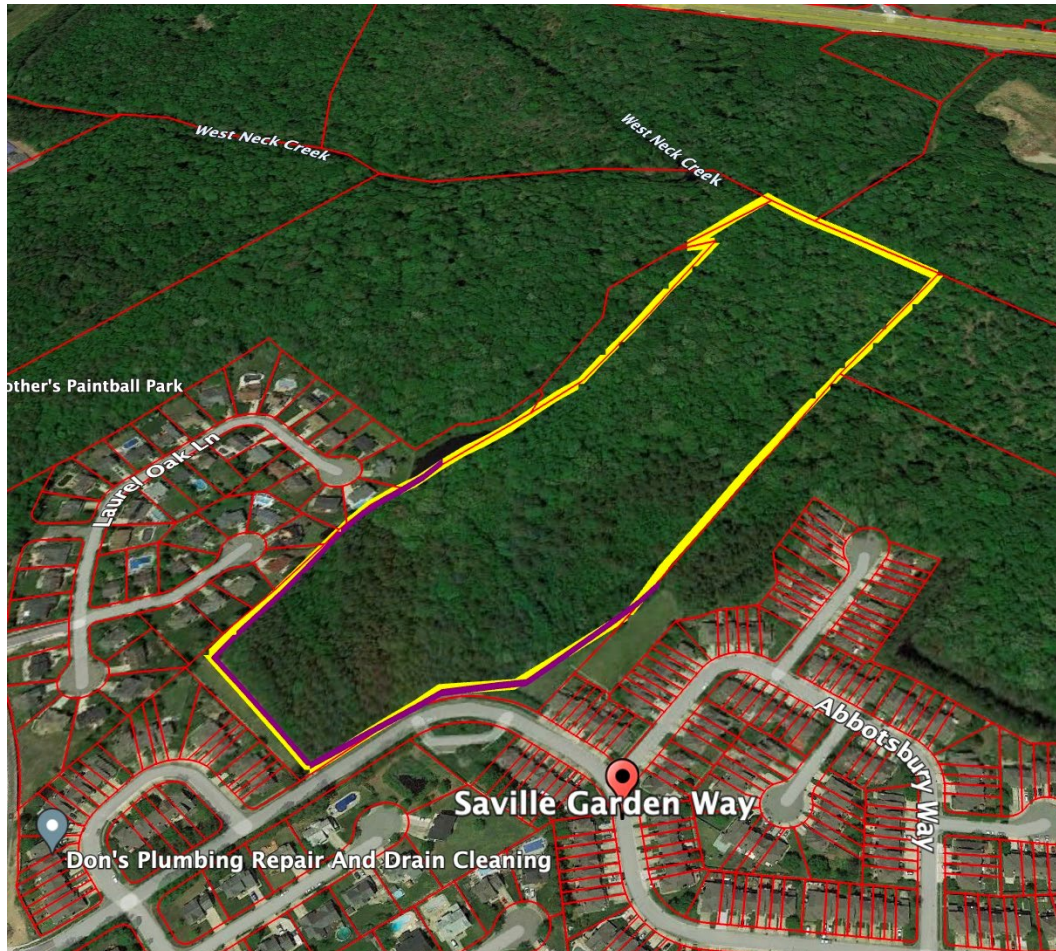
# Wilson Family Forest – Perimeter Development Map

## Legend

Parcel Boundary - 

Project Perimeter - .96 miles - 

Developed Perimeter - .35 miles - 



## Attestation of No Double Counting and No Net Harm



## Wilson Family Forest Preservation Project Attestation of No Double Counting of Credits & No Net Harm

I am the conservation account manager of Mosaic Carbon LLC and make this attestation regarding the no double counting of credits and no net harm from this tree preservation project, Wilson Family Forest Preservation Project.

### 1. Project Description

The Project that is the subject of this attestation is described more fully in both our Application and our Project Design Document (PDD), both of which are incorporated into this attestation.

### 2. No Double Counting by Applying for Credits from another Registry

Mosaic Carbon LLC has not and will not seek credits for CO<sub>2</sub> for the project trees or for this project from any other organization or registry issuing credits for CO<sub>2</sub> storage.

### 3. No Double Counting by Seeking Credits for the Same Trees or Same CO<sub>2</sub> Storage

Mosaic Carbon LLC has not and will not apply for a project including the same trees as this project nor will it seek credits for CO<sub>2</sub> storage for the project trees or for this project in any other project or more than once.

### 4. No Net Harm

The trees preserved in this project will produce many benefits, as described in our Application and PDD. Like almost all urban trees, the project trees are preserved for the benefits they deliver to people, communities, and the environment in a metropolitan area.

The project trees will produce many benefits and will not cause net harm. Specifically, they will not:

- Displace native or indigenous populations
- Deprive any communities of food sources
- Degrade a landscape or cause environmental damage

Signed on November\_16 in 2022, by Colin Fraser, for Mosaic Carbon LLC.

*Colin Fraser*

Signature

256.710.4225

Phone

Colin@firstearth.eco

Email

## Attestation of Additionality



## Wilson Family Forest Attestation of Additionality

I am the conservation account manager of Mosaic Carbon LLC and make this attestation regarding additionality from this tree preservation project, Wilson Family Forest.

- Project Description
  - The Project that is the subject of this attestation is described more fully in our Application and our Project Design Document (PDD), both of which are incorporated into this attestation.
- Prior to the start of the project, the trees in the project area were not protected via easement or recorded encumbrance or in a protected zoning status that preserves the trees
- The zoning in the project area currently allows for a non-forest use
- The trees in the project area face a threat or risk of removal or conversion out of forest
- Mosaic Carbon LLC recorded in the public land records an easement, covenant, or deed restriction specifically protecting the trees for the project duration of 40 years.
- Additionality is also embedded in the quantification methodology that our project followed. Projects cannot receive, and our project will not receive, credits for trees that would have remained had development occurred, nor can they receive soil carbon credits for soil that would have been undisturbed had development occurred. Our project also had to apply a discount to credited carbon for potential displaced development due to the project.
- Project Implementation Agreement for Project Duration
  - Mosaic Carbon LLC signed a Project Implementation Agreement with City Forest Credits for 40 years.

Signed on December 13, 2022 in 2022, by Colin Fraser, for Mosaic Carbon LLC.

*Colin Fraser*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Colin Fraser  
Printed Name

\_\_\_\_\_  
256-710-4225  
Phone

\_\_\_\_\_  
Colin@firstearth.eco  
Email

# Carbon Quantification Tool



City Forest Credits - Preservation Protocol Carbon Quantification Calculator

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Project Operator	Mosaic Carbon LLC
Project Name	Wilson Family Forest
Project Location	Virginia Beach, VA

Carbon Quantification Summary		Protocol Section	Supplemental Information/Notes
24.290	Total Project Area Acres		include project area for all parcels enrolled in carbon project
Table B43 Oak Gum Cypress, Table B43 Oak G	US Forest Service General Technical Report NE-343 - Table Number	11.1.A	based on the GTR regions map and primary forest type
65.29847674	Stand age (years)	11.1.A	determine using aerial photos
53.36204199	Biomass tC/ac	11.1.A	use appropriate GTR table and stand age, use bottom half of table, find years on the left and use 'total nonsoil' number
195.7	Biomass tCO2e/ac	11.1.A	
100%	Percent cover	11.1.A	include i-Tree Canopy file containing coordinates of evaluated points
4.753	Project Stock, tCO2e	11.1.A	
3.802	Accounting Stock, tCO2e	11.1.A	
90%	Fraction at risk of tree removal	11.2	Based on zoning - see 11.2 in preservation protocol
3.422	Avoided Biomass Emissions, tCO2e	11.2	
34%	Avoided impervious surface, percent	11.4	Based on zoning - see 11.4 in preservation protocol
8.271	Avoided impervious surface, acres	11.4	
993	Avoided Soil Carbon Emissions, tCO2e	11.4	
18.3%	Displacement	11.5	Fraction of avoided development that cannot be served by development or re-development of existing non-treed properties within the urban area
626	Displaced Biomass Emissions, tCO2e	11.5	
301	Displaced Soil Emissions	11.5	Assumes that redevelopment causes increase in impervious surface on redeveloped parcels
2,796	Credits from Avoided Biomass Emissions, tCO2e		
692	Credits from Avoided Soil Emissions, tCO2e		
3,487	Total Credits attributed to the project, tCO2e		
349	Registry Reversal Pool Account (10%), tCO2e		
3,139	Total credits issued to the project, tCO2e		
129	Total credits issued to the project, tCO2e/acre		

Year	Credits Issued This Year		Cumulative Credits Issued
1		3139	3139
2		0	3139
3		0	3139
4		0	3139
5		0	3139

Stand	Total Acres	NWI Acres	Non-NWI acres	Soil Carbon Deduction	Soil Carbon Acres	Soil Carbon Percentage
Stand 1	10	1.66	8.34	0.9	7.506	0.7506
Stand 2	14.29	13.44	0.85	0.9	0.765	0.05353394
Total	24.29	15.1	9.19			

City Forest Credits - Preservation Protocol Carbon Quantification Calculator

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Project Operator	Mosaic Carbon LLC
Project Name	Wilson Family Forest
Project Location	Virginia Beach, VA
Stand & Zoning	Stand 1 - Agriculture

Carbon Quantification Summary	Protocol Section	Supplemental Information/Notes
10.000 Total Project Area Acres		include project area for all parcels enrolled in carbon project
Table B43 Oak Gum Cypress US Forest Service General Technical Report NE-343 - Table Number	11.1.A	based on the GTR regions map and primary forest type
30 Stand age (years)	11.1.A	determine using aerial photos
27.3 Biomass tC/ac	11.1.A	use appropriate GTR table and stand age, use bottom half of table, find years on the left and use 'total nonsoil' number
100.1 Biomass tCO2e/ac	11.1.A	
100% Percent cover	11.1.A	include i-Tree Canopy file containing coordinates of evaluated points
1,001 Project Stock, tCO2e	11.1.A	
801 Accounting Stock, tCO2e	11.1.A	
90% Fraction at risk of tree removal	11.2	Based on zoning - see 11.2 in preservation protocol
721 Avoided Biomass Emissions, tCO2e	11.2	
75% Avoided impervious surface, percent	11.4	Based on zoning - see 11.4 in preservation protocol
7.506 Avoided impervious surface, acres	11.4	
901 Avoided Soil Carbon Emissions, tCO2e	11.4	
18.3% Displacement	11.5	Fraction of avoided development that cannot be served by development or re-development of existing non-treed properties within the urban area
132 Displaced Biomass Emissions, tCO2e	11.5	
273 Displaced Soil Emissions	11.5	Assumes that redevelopment causes increase in impervious surface on redeveloped parcels
589 Credits from Avoided Biomass Emissions, tCO2e		
628 Credits from Avoided Soil Emissions, tCO2e		
1,217 Total Credits attributed to the project, tCO2e		
122 Registry Reversal Pool Account (10%), tCO2e		
1,094.97 Total credits issued to the project, tCO2e		
109.50 Total credits issued to the project, tCO2e/acre		

City Forest Credits - Preservation Protocol Carbon Quantification Calculator

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Project Operator	Mosaic Carbon LLC
Project Name	Wilson Family Forest
Project Location	Virginia Beach, VA
Stand & Zoning	Stand 1 - Agriculture

Carbon Quantification Summary	Protocol Section	Supplemental Information/Notes
14,290 Total Project Area Acres		include project area for all parcels enrolled in carbon project
Table B43 Oak Gum Cypress US Forest Service General Technical Report NE-343 - Table Number	11.1.A	based on the GTR regions map and primary forest type
90 Stand age (years)	11.1.A	determine using aerial photos
71.6 Biomass tC/ac	11.1.A	use appropriate GTR table and stand age, use bottom half of table, find years on the left and use 'total nonsoil' number
262.5 Biomass tCO2e/ac	11.1.A	
100% Percent cover	11.1.A	include i-Tree Canopy file containing coordinates of evaluated points
3,752 Project Stock, tCO2e	11.1.A	
3,001 Accounting Stock, tCO2e	11.1.A	
90% Fraction at risk of tree removal	11.2	Based on zoning - see 11.2 in preservation protocol
2,701 Avoided Biomass Emissions, tCO2e	11.2	
5% Avoided impervious surface, percent	11.4	Based on zoning - see 11.4 in preservation protocol
0.765 Avoided impervious surface, acres	11.4	
92 Avoided Soil Carbon Emissions, tCO2e	11.4	
18.3% Displacement	11.5	Fraction of avoided development that cannot be served by development or re-development of existing non-treed properties within the urban area
494 Displaced Biomass Emissions, tCO2e	11.5	
28 Displaced Soil Emissions	11.5	Assumes that redevelopment causes increase in impervious surface on redeveloped parcels
2,207 Credits from Avoided Biomass Emissions, tCO2e		
64 Credits from Avoided Soil Emissions, tCO2e		
2,271 Total Credits attributed to the project, tCO2e		
227 Registry Reversal Pool Account (10%), tCO2e		
2,043.74 Total credits issued to the project, tCO2e		
143.02 Total credits issued to the project, tCO2e/acre		

# Wilson Family Forest Stand Map

## Stand 1

Legend

Stand 1 – 10 acres

Project Boundary -

Parcel Boundary -





## Stand 2

### Legend

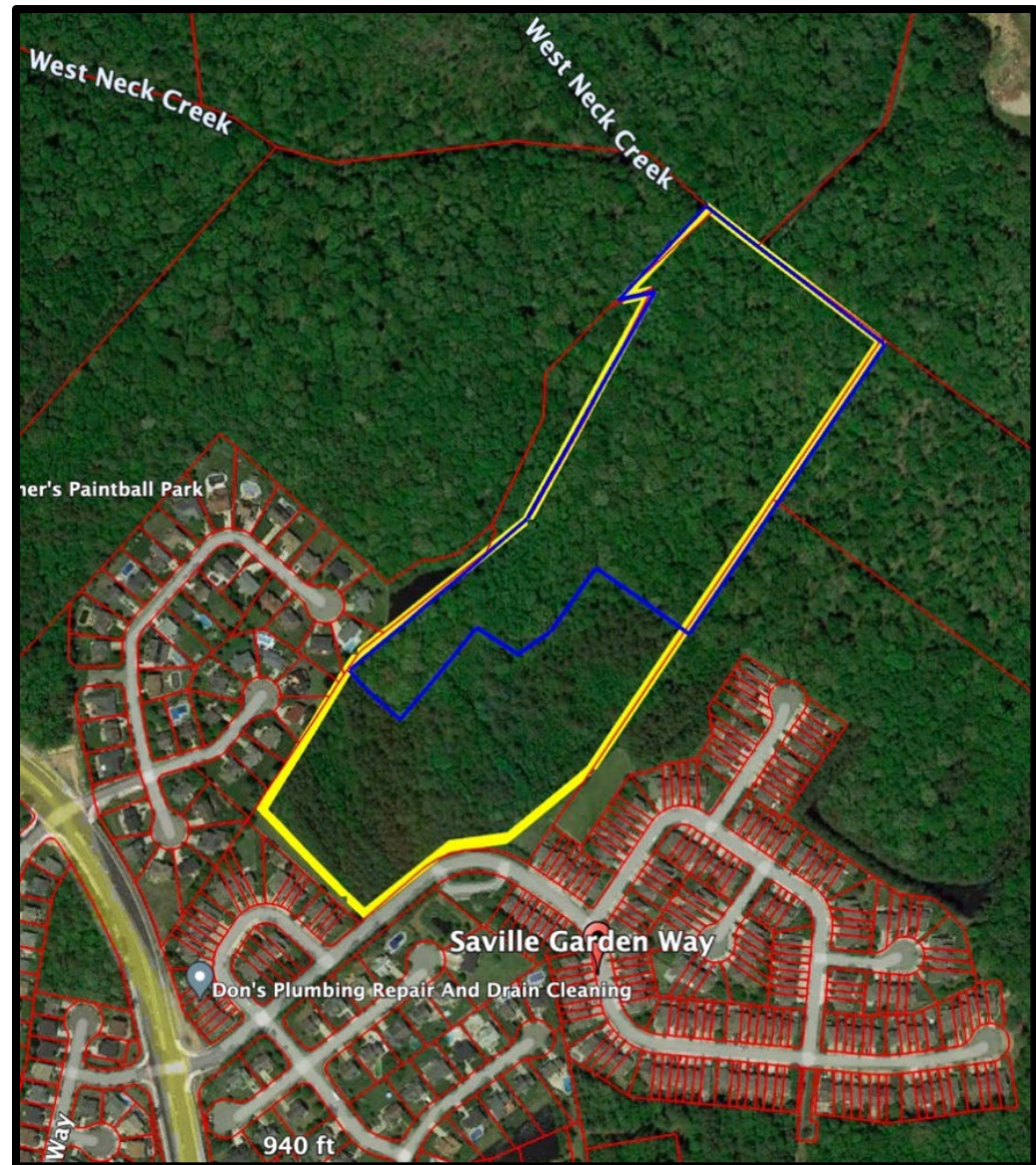
Stand 2 – 14.29 acres



Project Boundary -

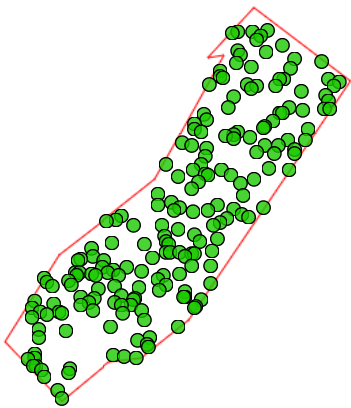


Parcel Boundary -



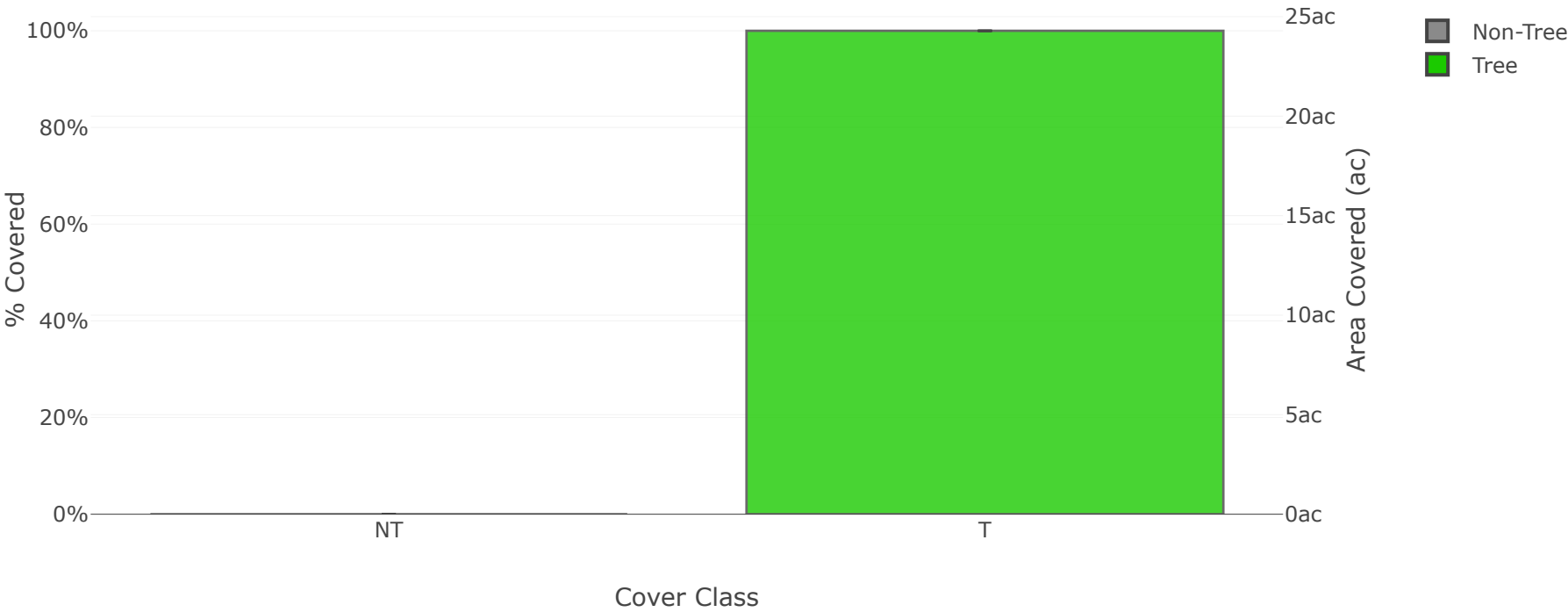
## iTree Canopy Report





Google

Land Cover



Abbr.	Cover Class	Description	Points	% Cover ± SE	Area (ac) ± SE
NT	Non-Tree	All other surfaces	0	0.00 ± 0.00	0.00 ± 0.00
T	Tree	Tree, non-shrub	200	100.00 ± 0.00	24.29 ± 0.00
Total			200	100.00	24.29

Tree Benefit Estimates: Carbon (English units)

Description	Carbon (T)	±SE	CO <sub>2</sub> Equiv. (T)	±SE	Value (USD)	±SE
Sequestered annually in trees	33.15	±0.00	121.57	±0.00	\$5,655	±0
Stored in trees (Note: this benefit is not an annual rate)	832.63	±0.00	3,052.99	±0.00	\$142,006	±0

Currency is in USD and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Amount sequestered is based on 1.365 T of Carbon, or 5.005 T of CO<sub>2</sub>, per ac/yr and rounded. Amount stored is based on 34.281 T of Carbon, or 125.697 T of CO<sub>2</sub>, per ac and rounded. Value (USD) is based on \$170.55/T of Carbon, or \$46.51/T of CO<sub>2</sub> and rounded. (English units: T = tons (2,000 pounds), ac = acres)

Tree Benefit Estimates: Air Pollution (English units)

Abbr.	Description	Amount (lb)	±SE	Value (USD)	±SE
CO	Carbon Monoxide removed annually	27.44	±0.00	\$18	±0
NO2	Nitrogen Dioxide removed annually	151.59	±0.00	\$33	±0
O3	Ozone removed annually	1,170.98	±0.00	\$1,521	±0
SO2	Sulfur Dioxide removed annually	74.52	±0.00	\$5	±0
PM2.5	Particulate Matter less than 2.5 microns removed annually	59.82	±0.00	\$3,184	±0
PM10*	Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	332.35	±0.00	\$1,042	±0
Total		1,816.70	±0.00	\$5,803	±0

Currency is in USD and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Air Pollution Estimates are based on these values in lb/ac/yr @ \$/lb/yr and rounded:  
CO 1.130 @ \$0.67 | NO2 6.241 @ \$0.22 | O3 48.211 @ \$1.30 | SO2 3.068 @ \$0.07 | PM2.5 2.463 @ \$53.23 | PM10\* 13.683 @ \$3.13 (English units: lb = pounds, ac = acres)

Tree Benefit Estimates: Hydrological (English units)

Abbr.	Benefit	Amount (gal)	±SE	Value (USD)	±SE
AVRO	Avoided Runoff	201.19	±0.00	\$2	±0
E	Evaporation	4,517.96	±0.00	N/A	N/A
I	Interception	4,547.37	±0.00	N/A	N/A
T	Transpiration	4,278.14	±0.00	N/A	N/A
PE	Potential Evaporation	29,055.90	±0.00	N/A	N/A
PET	Potential Evapotranspiration	23,963.60	±0.00	N/A	N/A

Currency is in USD and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Hydrological Estimates are based on these values in gal/ac/yr @ \$/gal/yr and rounded:  
AVRO 8.283 @ \$0.01 | E 186.013 @ N/A | I 187.224 @ N/A | T 176.139 @ N/A | PE 1,196.288 @ N/A | PET 986.628 @ N/A (English units: gal = gallons, ac = acres)

About i-Tree Canopy

The concept and prototype of this program were developed by David J. Nowak, Jeffery T. Walton, and Eric J. Greenfield (USDA Forest Service). The current version of this program was developed and adapted to i-Tree by David Ellingsworth, Mike Binkley, and Scott Maco (The Davey Tree Expert Company)

Limitations of i-Tree Canopy

The accuracy of the analysis depends upon the ability of the user to correctly classify each point into its correct class. As the number of points increase, the precision of the estimate will increase as the standard error of the estimate will decrease. If too few points are classified, the standard error will be too high to have any real certainty of the estimate.



Additional support provided by:



Use of this tool indicates acceptance of the [EULA](#).

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Forest Composition Report and Site Photos

# Wilson Family Forest Forest Composition Report

I am, Colin Fraser, Conservation Account Manager for Mosaic Carbon, and created this Forest Composition Report for the Wilson Family Forest (Project 035) on October 12, 2022. I, Colin Fraser, conducted the site assessment, having worked in the forest carbon sector for the last four years and with experience managing reforestation and water quality projects as well as tree planting projects. Forest transects to measure DBH and stems per acre were conducted with the guidance of a registered forester.

These descriptions were based on two site visits, the first in July 2022 and the second in early October 2022. Images from the October 2022 visit are included as Exhibit A to this document. The forest transects were conducted on November 22, 2022 (Exhibit B).

The Wilson Family Forest is 24.29 acres of forest adjacent to a residential development. The property is currently privately owned and not actively used recreationally. The forest appears healthy with no evidence of disease or pests. There is no significant presence of invasive species. The site can be divided into two stands differing in age, tree density, and species composition (Exhibit C).

- Stand 1: Sweetgum and loblolly pine forest (10 acres)
- Stand 2: Oak Sweetgum forest (14.29 acres)

The age of the forest stands was determined using aerial imagery data from the City of Virginia Beach – Historical Imagery Viewer (Exhibit D).

- Stand 1 - aerial imagery shows that Stand 1 was cleared for agricultural production as recently as 1982. However, there is no evidence of any harvest or cultivation in the next available imagery from 1994 or any of the ensuing years. To be conservative, the forest age was estimated at 30 years old.
- Stand 2 – aerial imagery from as early as 1937 shows the stand to be fully forested. There is no evidence, either observable in the forest transect or in historical imagery, of any clearing. Therefore, the forest is estimated at 90 years old.

## Stand 1 – Sweetgum and loblolly pine forest

Stand 1 consists of dense mid-successional forest of sweetgum and loblolly pine. There is very little understory as shade and pine needle mulch have suppressed it. There are however, occasional beech saplings, small holly, and cat greenbrier. Five forty-foot transects were used to determine stem density and breast height diameter. Results within the stand were consistent. On average, there were 1,200 stems per acre. The average sweetgum DBH was 5” and the average loblolly pine DBH was 14”.

Table 1. Forest composition breakdown for Stand 1

<b>Stand size (acres)</b>	10 acres
<b>Stand age (years)</b>	30 years old
<b>GTR table</b>	GTR Table B43 Oak Gum Cypress
<b>Species</b>	<b>Percentage</b>
Sweetgum	60%
Loblolly Pine	30%
Black Cherry	5%
Other	5%

As Sweetgum was the dominant tree species, making up the majority of forest at 60%, table B43 Oak Gum Cypress was determined to be representative.

### Stand 2 – Oak Sweetgum Forest

Stand 2 consists of low-lying mature hardwood forest with no evidence of harvest or clearing, mostly represented by white oak, willow oak, red maple, pawpaw, and occasional mature loblolly and sweetgum. Small pawpaw groves are appearing in a disused trail. In a lower lying area adjacent to West Neck Creek, giant cane, bacharis, and buffel grass make up the understory. Five forty-foot transects per stand were used to determine stem density and breast height diameter. On average, there were 300 stems per acre. The average oak DBH was 18", the average sweetgum DBH was 16" and the average loblolly pine DBH was 20". Results within the stand were consistent.

Table 2. Forest composition breakdown for Stand 2

<b>Stand size (acres)</b>	14.29 acres
<b>Stand age (years)</b>	90 years old
<b>GTR table</b>	GTR Table B43 Oak Gum Cypress
<b>Species</b>	<b>Percentage</b>
White Oak	10%
Willow Oak	10%
Sweetgum	30%
Loblolly Pine	30%
Red Maple	10%
Pawpaw	5%
Other (Hornbeam, etc.)	5%

In Stand 2, oak and sweetgum together make up 50% of the forest, so Oak Gum Cypress was determined to be sufficiently representative.

In both Stands, Loblolly Pine comprises about a third of the forest. This would correspond to GTR Table B39 Loblolly Shortleaf Pine. However, to be conservative, the lower carbon storage estimates of Table B43 were used for the entirety of both stands.

Signed on December 15, 2022, by Colin Fraser, Account Manager, Mosaic Carbon LLC.

*Colin Fraser*

---

Signature

256 710 4225

Phone

Colin@Firstearth.eco

Email

## Exhibit A – Forest Photos and Data



South East Portion October 2022



South East Portion October 2022



North West Portion October 2022





North West Portion October 2022

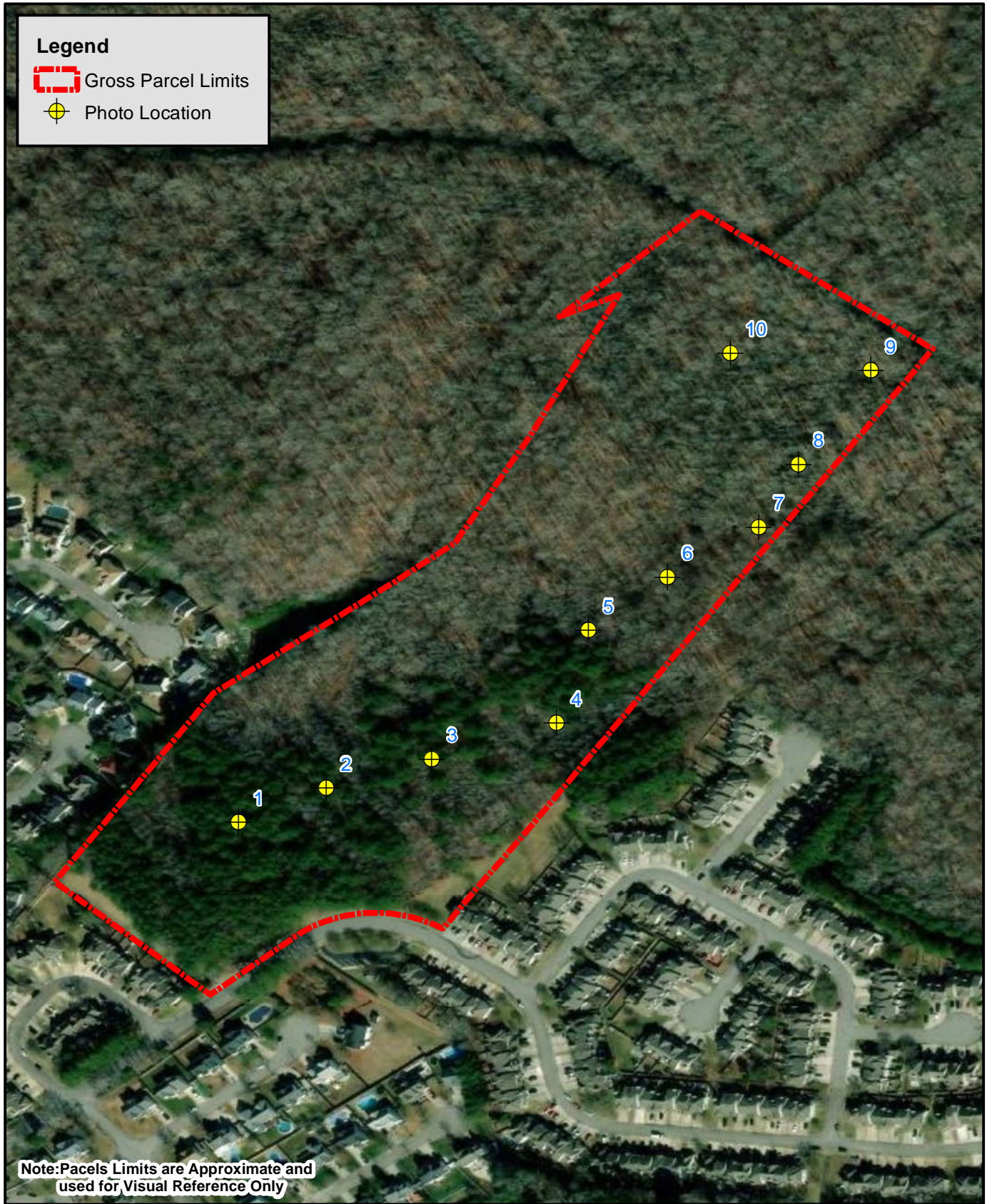




North West Portion October 2022 (Emergent Pawpaw Grove)

**Legend**

-  Gross Parcel Limits
-  Photo Location



Base Imagery Provided By: ESRI

0 100 200 400 Feet



**Exhibit B - Forest  
Transect Map**



## Exhibit C - Forest Stand Map

### Stand 1

#### Legend

Stand 1 – 10 acres



Project Boundary -



Parcel Boundary -





## Stand 2

### Legend

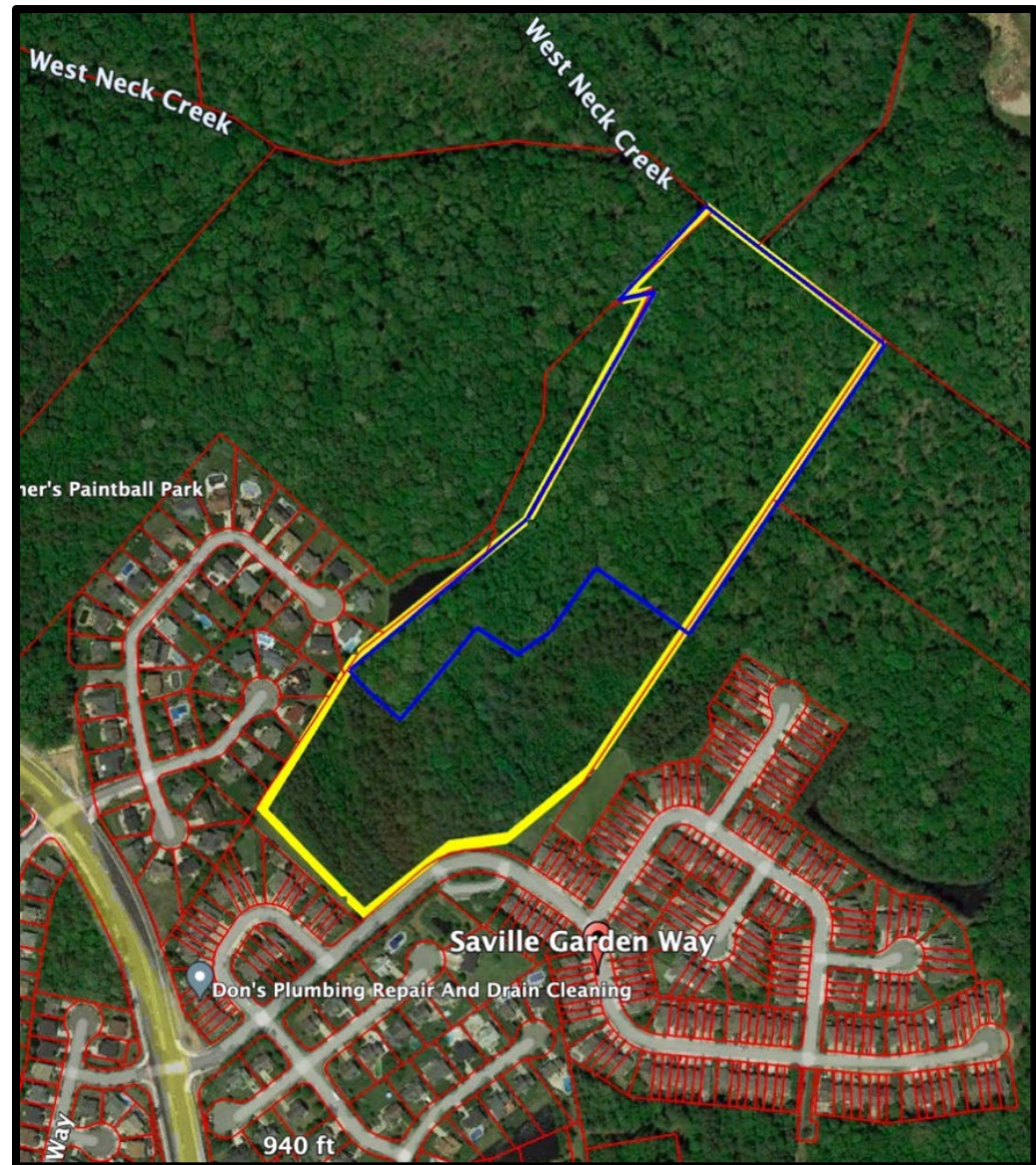
Stand 2 – 14.29 acres



Project Boundary -

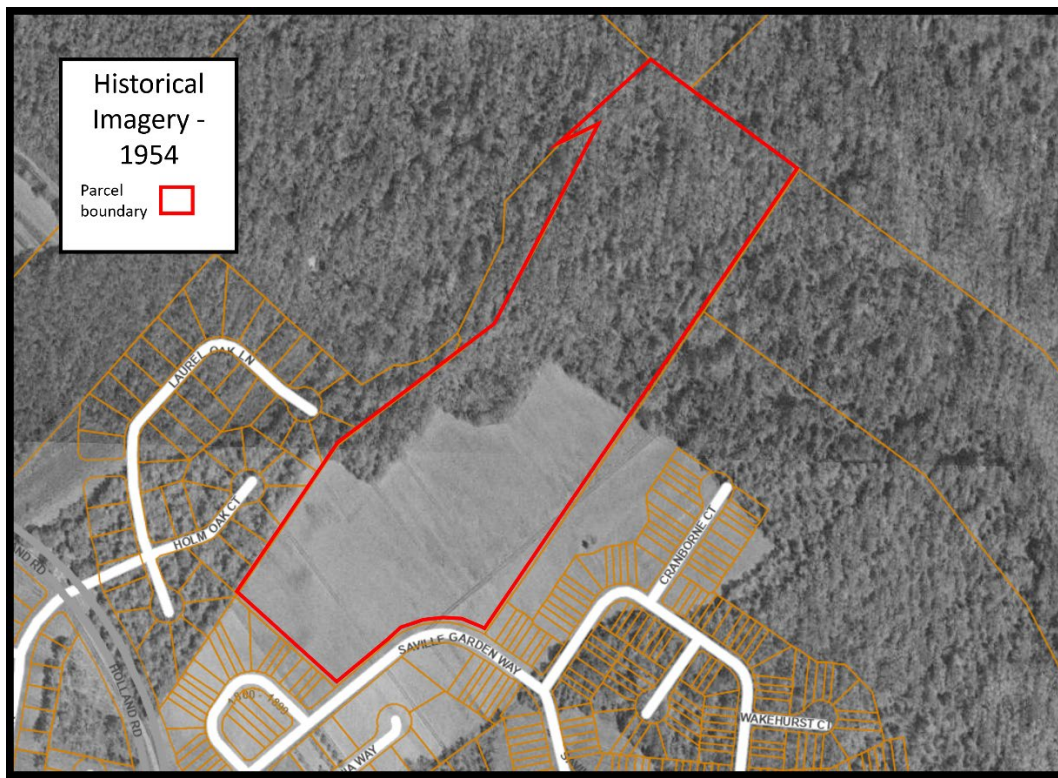
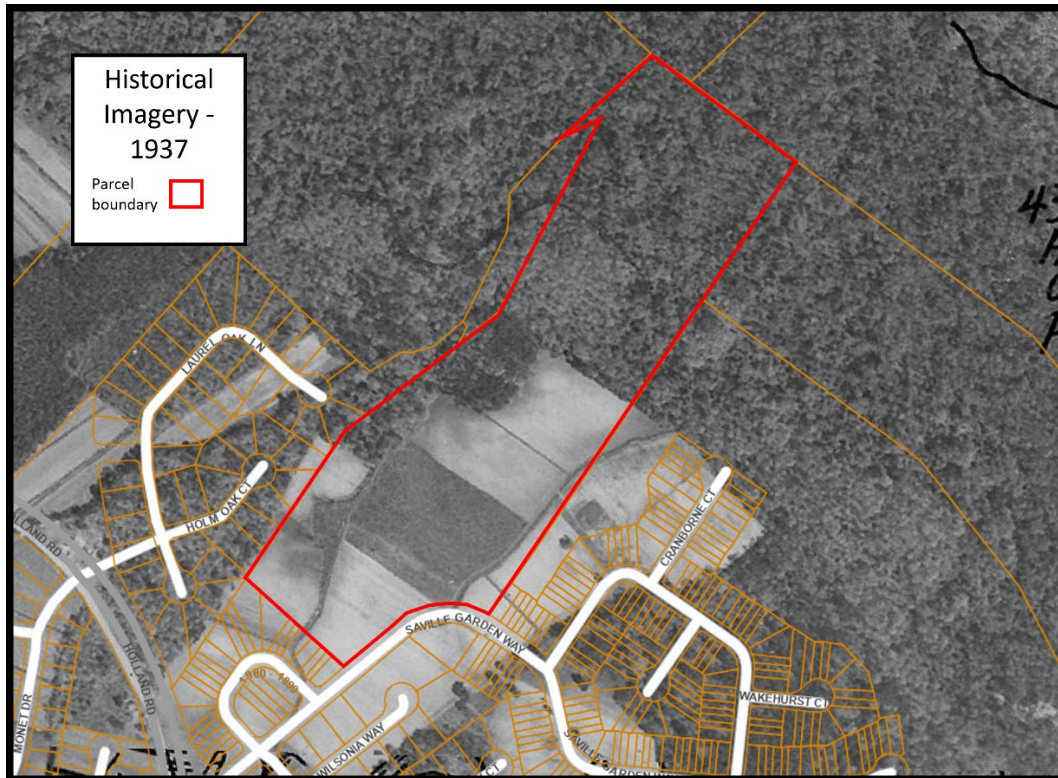


Parcel Boundary -

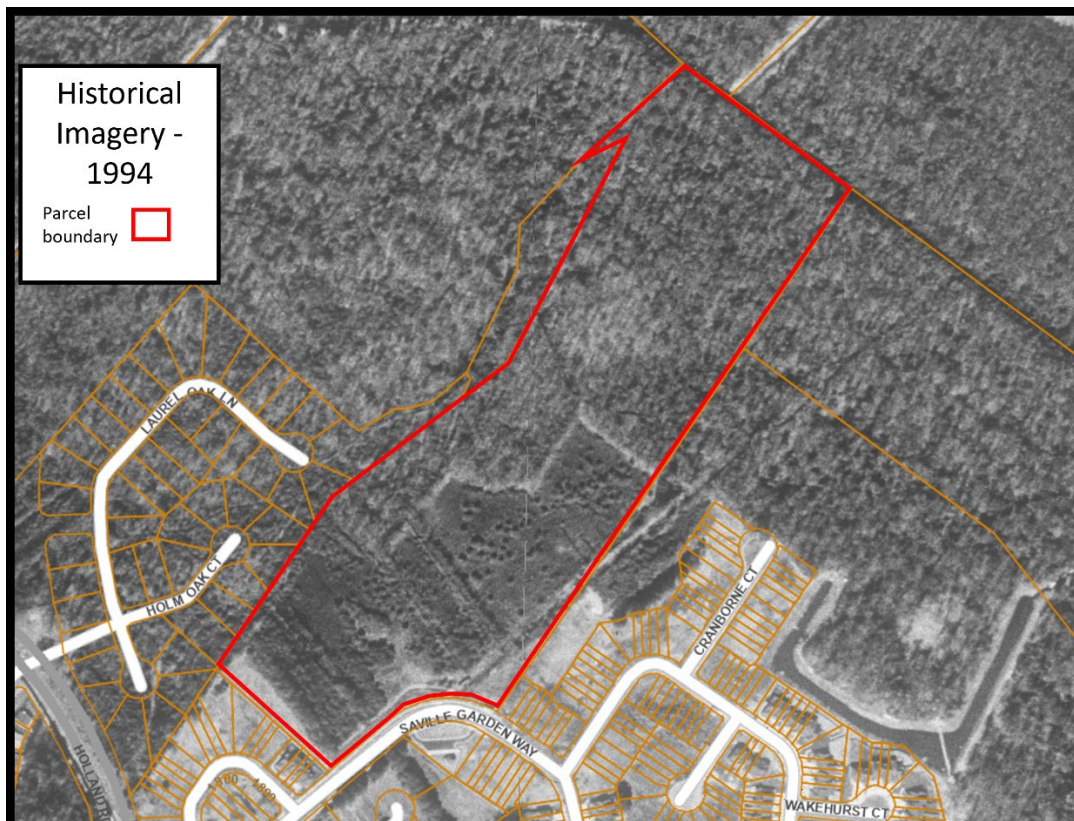




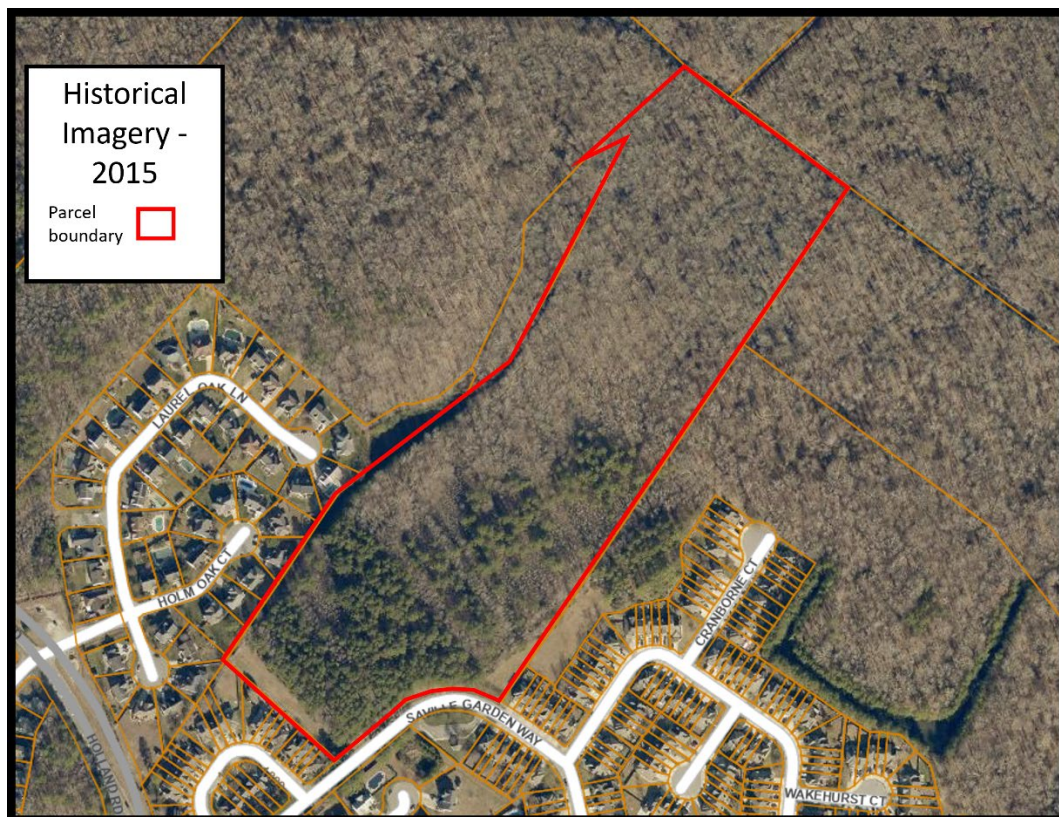
## Exhibit D - Historical Imagery











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Audit trail date format	MM / DD / YYYY
Status	● Signed

## Document History



SENT

**12 / 16 / 2022**

20:03:39 UTC

Sent for signature to Colin Fraser (colin@firstearth.eco)  
from bwi@broadwaterinnovations.org  
IP: 129.222.218.87



VIEWED

**12 / 16 / 2022**

20:04:00 UTC

Viewed by Colin Fraser (colin@firstearth.eco)  
IP: 129.222.218.87



SIGNED

**12 / 16 / 2022**

20:04:31 UTC

Signed by Colin Fraser (colin@firstearth.eco)  
IP: 129.222.218.87



COMPLETED

**12 / 16 / 2022**

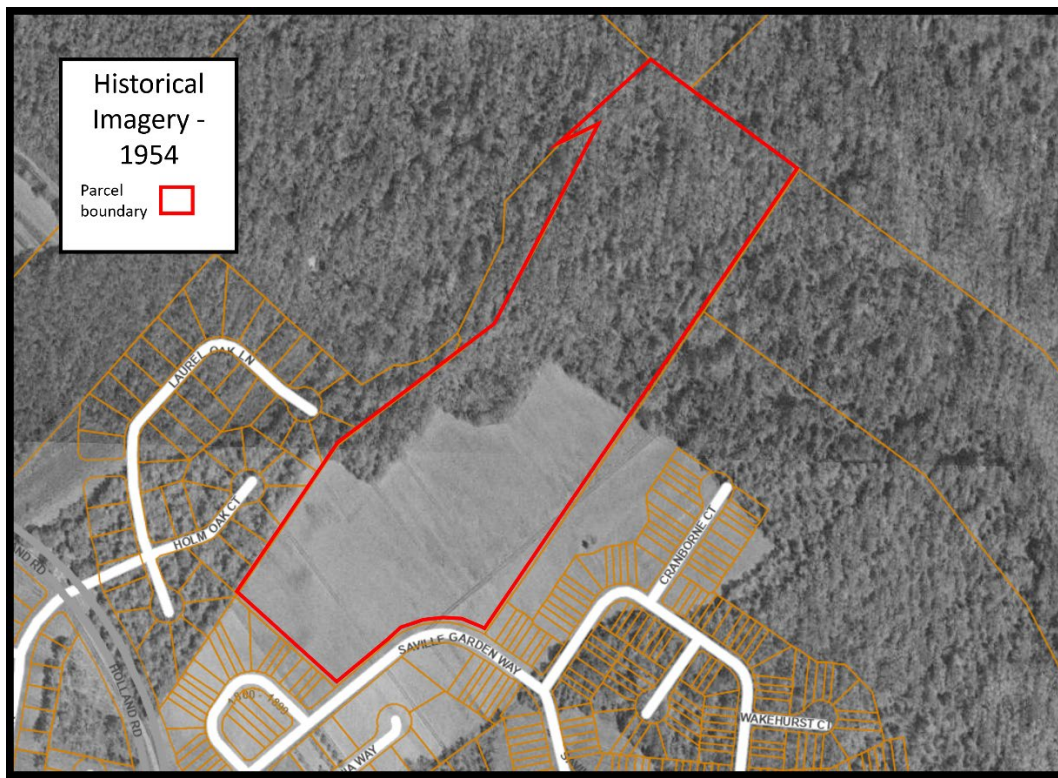
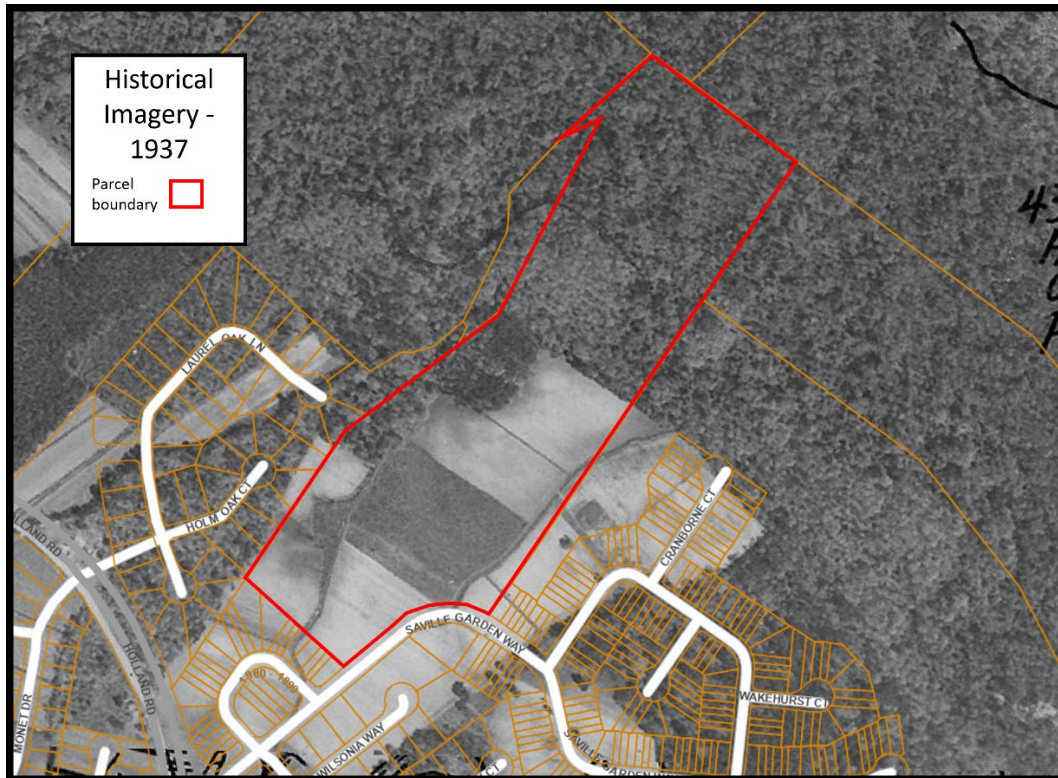
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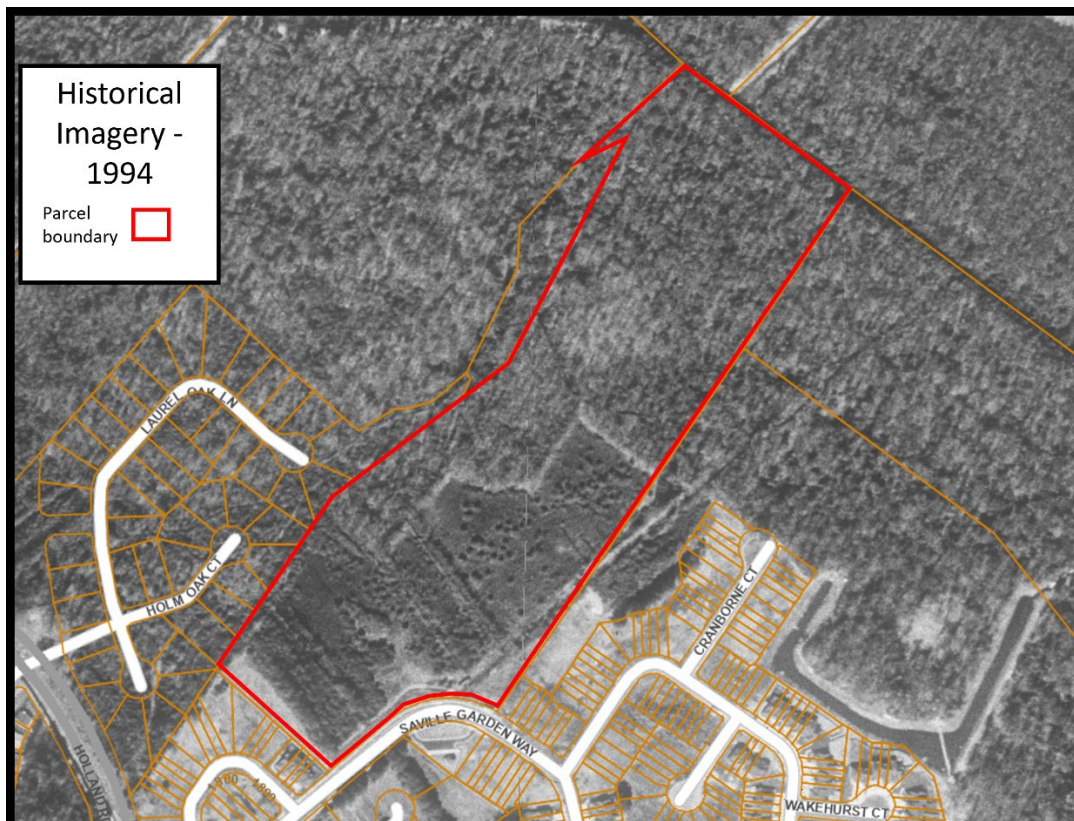
## Historical Photos



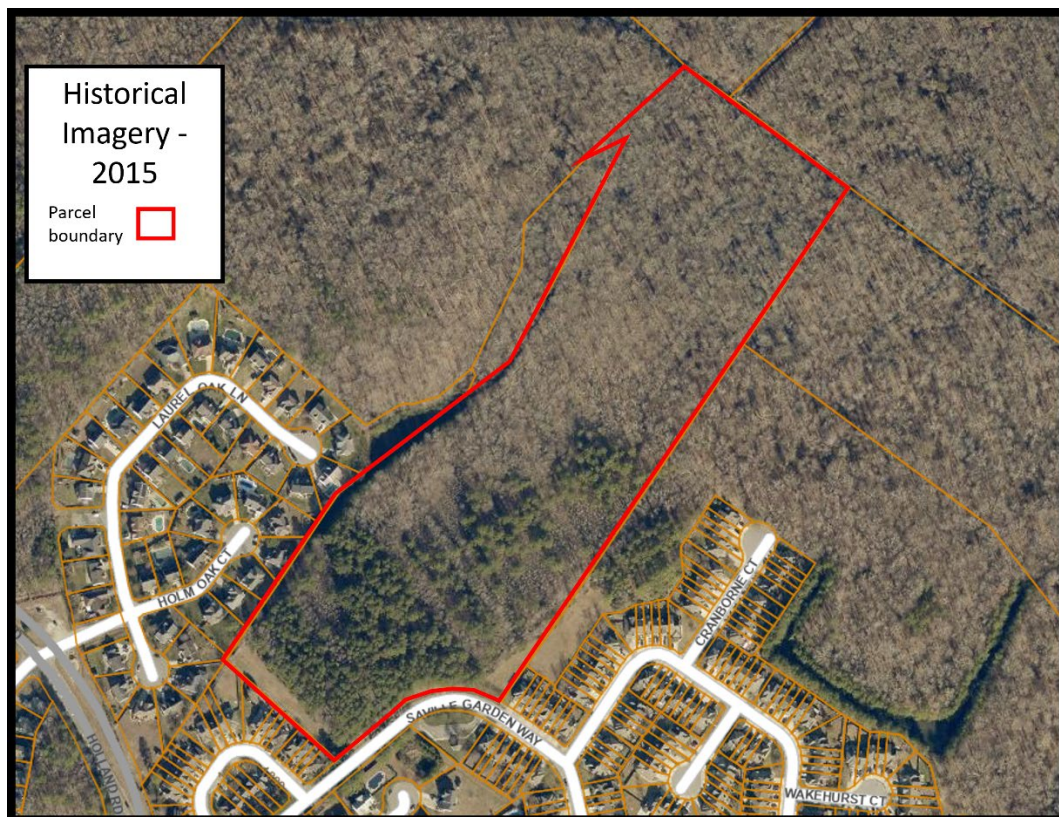
## Wilson Family Forest Historical Imagery











Cobenefit Calculator

Light yellow background denotes an input cell ->



**Directions**

- 1) Use i-Tree Canopy, or another tool, to estimate the amount of deciduous and coniferous tree cover area (acres) (Cell C20 and D20).
- 2) Use i-Tree Canopy, or another tool, to estimate the amount of non-tree cover area (acres) (Cell F20) in the project area.
- 3) In Cell G20 the total area of the project is calculated (acres). Prompt i-Tree Canopy to provide an estimate of the project area by clicking on the gear icon next to the upper right portion of the image and selecting "Report By Area."
- 4) Total Project Area, cell G17 should equal 100%.

**Table 1. Tree Cover**

	Deciduous Tree Cover	Coniferous Tree Cover	Total Tree Cover	Non-Tree	Total Project Area
Percent (%)	70%	30%	100%	0%	100%
Area (sq miles)	0.027	0.011	0.038	0.000	0.04
Area (m2)	68,808	29,489	98,297	0	98,297
Area (acres)	17.003	7.29	24.29	0.00	24.29

		Species Composition			
	Acres	Deciduous	Loblolly pine	Acres deciduous	Acres coniferous
Stand 1	10	0.7	0.3	7	3
Stand 2	14.29	0.7	0.3	10.003	4.287
Total				17.003	7.287



This copy assigned to Mosaic Carbon LLC. Proprietary and confidential CFC information. Do no

Using the information you provide on tree canopy cover, the tool provides estimates of co-benefits in Resource Units and \$ per year.

**Table 2. Co-Benefits per year with current tree canopy cover.**

Ecosystem Services	Resource Units Totals	Total \$
Rain Interception (m3/yr)	5,944.9	\$15,549.49
Air Quality (t/yr)		
O3	0.4633	\$1,376.57
NOx	0.1226	\$364.16
PM10	0.2853	\$322.19
Net VOCs	-0.1846	-\$524.25
Air Quality Total	0.6865	\$1,538.67
Energy (kWh/yr & kBtu/yr)		
Cooling - Elec.	38,654	\$2,933.82
Heating - Nat. Gas	16,528	\$171.73
Energy Total (\$/yr)		\$3,105.56
Grand Total (\$/yr)		\$20,193.72

\$807,748.72

# Social Impacts

# City Forest Carbon Project

## Social Impacts



### *UN Sustainable Development Goals*

The 17 United Nations Sustainable Development Goals (SDGs) are an urgent call for action and global partnership among all countries, representing key benchmarks for creating a better world and environment for everyone. Well-designed and managed urban forests make significant contributions to the environmental sustainability, economic viability and livability of cities. They help mitigate climate change and natural disasters, reduce energy costs, poverty and malnutrition, and provide ecosystem services and public benefits. See more details in the CFC Carbon Project Social Impact Reference Guide.

### *Instructions*

This template sets out all relevant SDGs and lists various urban forest project activities that fall within each SDG. Evaluate the SDGs to determine how your carbon project provides social impacts that may contribute towards achievement of the global goals. Check the box(es) that contain one of your project activities and describe in no fewer than two sentences how your project activities align with the corresponding SDG. On page 12, select the icon for three to five of the most relevant SDGs to your project and provide any additional information.

## SDG 3 - Good Health and Well Being

Goal: Ensure healthy lives and promote well-being for all at all ages.

Examples of project activities include, but are not limited to:

- ☒ Plant or protect trees to reduce or remove air pollutants
- ☐ If planting trees, select trees for reduced pollen counts and irritant production
- ☒ Plant or protect trees to create shade, provide UV exposure protection, reduce extreme heat negative effects, and/or reduce temperatures to relieve urban heat effects
- ☐ Design project to buffer sounds, optimize biodiversity, or create nature experiences
- ☐ Locate project near vulnerable populations, such as children or elderly
- ☒ Locate project near high volume roads to screen pollutants
- ☐ Locate project near people to encourage recreation, provide new parks or green space, or otherwise promote an active lifestyle
- ☐ Locate project near schools, elderly facilities, or mental health services to promote nature-based wellness, attention restoration, or other mental well-being
- ☐ Locate project in area with conditions of project-defined high inequity to trees, such as at schools, affordable or subsidized housing, formerly redlined neighborhoods, areas with high property vacancy rates, or area with high proportion of renters
- ☒ Reduce stormwater runoff or improve infiltration rates
- ☐ Design project to reduce human exposure to specific pollutants or toxins
- ☐ Other

The Wilson family Forest project will protect trees to remove air pollutants, create shade, reduce extreme heat and reduce stormwater runoff into West Neck Creek. It will help screen pollutants off of Holland Road.

## SDG 6 - Clean Water and Sanitation

Goal: Ensure availability and sustainable management of water and sanitation for all

Examples of project activities include, but are not limited to:

- ☐ Research and assess environmental injustices related to water in project area
- ☒ Locate project near high-traffic roads or to otherwise improve, mitigate, or remediate toxic landscapes near water
- ☐ Protect or plant trees to improve historically or culturally important sites related to water that have been degraded and/or neglected
- ☒ Reduce stormwater by planting or protecting trees
- ☐ Plant forested buffers adjacent to streams, rivers, wetlands, or floodplains
- ☐ Prevent soil erosion by protect steep slopes
- ☐ Improve infiltration rates
- ☐ Improve, mitigate, or remediate toxic landscapes and human exposure to risk
- ☐ Drought resistance, such as selecting appropriate water-efficient trees for project climate zone
- ☐ Other

The Wilson Family Forest will help remediate the impact of a high value roadway, Holland Road. The project will reduce stormwater runoff into West Neck.

## SDG 8 - Decent Work and Economic Growth

Goal: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Examples of project activities include, but are not limited to:

- ☐ Community participation in project implementation, including such things as providing access to financial resources for ongoing community-based care
- ☐ Emphasize local hiring and support small businesses
- ☐ Promote local economic opportunities through workforce training, career pathway development, or other employment
- ☐ Other



## SDG 10 - Reduced Inequalities

Goal: Reduce inequalities within and among countries

Examples of project activities include, but are not limited to:

- ☐ Provide connections and cohesion for social health, such as create or reinforce places that promote informal interactions, engage local residents and users in tree management, include symbolic or cultural elements, or other events
- ☐ Research, understand, and design to address understand historic and current sociocultural inequities, community health conditions, environmental injustices, or prior local greening efforts in community
- ☐ Locate project near vulnerable populations, such as children or elderly, to provide air quality improvements or buffer against extreme heat effects
- ☒ Locate project in high-density residential areas or where there is a lack of trees to improve access and promote an active lifestyle
- ☐ Locate project near schools, elderly facilities, or mental health services to promote nature-based wellness, attention restoration, or other mental well-being
- ☐ Locate project in area with conditions of project-defined high inequity to trees, such as at schools, affordable or subsidized housing, formerly redlined neighborhoods, areas with high property vacancy rates, or area with high proportion of renters
- ☒ Locate project near high-traffic roads or to otherwise improve, mitigate, or remediate toxic landscapes
- ☐ Protect or plant trees to improve historically or culturally important sites that have been degraded and/or neglected
- ☐ Community engagement in project design, including such things as engaging and respecting existing relationships and social networks, community cultural traditions, and public participation methods that are empowering and inclusive
- ☐ Community participation in project implementation, including such things as addressing and removing barriers to participation, promote ongoing community-based care and access to financial resources
- ☐ Emphasize local hiring and support small businesses
- ☐ Research and consider potential for gentrification and displacements
- ☐ Promote local economic opportunities through workforce training, career pathway development, or other employment
- ☐ Other

The Wilson Family Forest is located in an area rife with suburban sprawl and high traffic volume. Preserving canopy cover will help protect residents from environmental impacts.

## SDG 11 - Sustainable Cities and Communities

Overall: Make cities inclusive, safe, resilient, and sustainable.

Examples of project activities include, but are not limited to:

- ☒ Plant or protect trees to reduce or remove air pollutants
- ☐ If planting trees, select trees for reduced pollen counts and irritant production
- ☒ Locate project near high volume roads to screen pollutants
- ☐ Locate project near vulnerable populations, such as children or elderly
- ☒ Plant or protect trees to create shade, provide UV exposure protection, reduce extreme heat negative effects, and/or reduce temperatures to relieve urban heat effects
- ☐ Locate project near people to encourage recreation, provide new parks or green space, or otherwise promote an active lifestyle
- ☐ Design project to improve wellness and mental health, such as planting trees to buffer sounds, optimize biodiversity, optimize views from buildings, or create nature experiences
- ☐ Locate project near schools, elderly facilities, or mental health services to promote nature-based wellness, attention restoration, or other mental well-being
- ☐ Provide connections and cohesion for social health, such as create or reinforce places that promote informal interactions, engage local residents and users in tree management, include symbolic or cultural elements, or other events
- ☐ Research, understand, and design to address understand historic and current sociocultural inequities, community health conditions, environmental injustices, or prior local greening efforts in community
- ☐ Locate project in area with conditions of project-defined high inequity to trees, such as at schools, affordable or subsidized housing, formerly redlined neighborhoods, areas with high property vacancy rates, or area with high proportion of renters
- ☐ Community engagement in project design, including such things as engaging and respecting existing relationships and social networks, community cultural traditions, and public participation methods that are empowering and inclusive
- ☐ Community participation in project implementation, including such things as addressing and removing barriers to participation, promote ongoing community-based care and access to financial resources
- ☐ Other

The Wilson Family Forest project will help remove air pollutants and reduce heat island effects. The City of Virginia Beach has experienced rapid growth and lost a tremendous amount of its forest. The project will provide critical resilience.

## SDG 12 - Responsible Production and Consumption

Goal: Ensure sustainable consumption and production patterns

Examples of project activities include, but are not limited to:

- ☒ Plant or protect trees to create shade or reduce temperatures to relieve urban heat effects
- ☐ Provide cooling benefits and energy savings by shading impervious surfaces such as streets or parking lots, or planting trees on south and west sides of buildings
- ☐ Other

The Wilson Family Forest will be protected to create shade in densely populated residential and commercial area. It abuts a dense housing subdivision.

## SDG 13 - Climate Action

Goal: Take urgent action to combat climate change and its impacts.

Examples of project activities include, but are not limited to:

- ☒ Plant or protect trees to reduce or remove air pollutants
- ☒ Plant or protect trees to create shade or reduce temperatures to relieve urban heat effects
- ☐ Promote community capacity for social and climate resilience by engaging local residents or users in tree management, or other events to connect people to the project
- ☐ Reflect cultural traditions and inclusive engagement for climate resilience
- ☒ Design project to improve soil health
- ☐ Provide cooling benefits and energy savings by shading impervious surfaces such as streets or parking lots, or planting trees on south and west sides of buildings
- ☒ Plant or protect trees to reduce stormwater runoff
- ☐ Select water-efficient trees for climate zone and drought resistance
- ☒ Create and/or enhance wildlife habitat
- ☐ Other

The Wilson Family Forest will reduce air pollutants and relieve urban heat island effects. The protection of the land in a forest state will preserve soil health above any other permitted land uses and well as reduce runoff. The forest is home to abundant wildlife populations including migratory waterfowl such as wood ducks.

## SDG 14 - Life Below Water

Goal: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Examples of project activities located in areas with marine ecosystems include, but are not limited to:

- ☒ Locate project near high-traffic roads or to otherwise improve, mitigate, or remediate toxic landscapes near water
- ☒ Plant or protect trees in project areas to reduce stormwater runoff
- ☐ Plant forested buffers adjacent to streams, rivers, wetlands, or floodplains
- ☐ Prevent soil erosion into by protecting steep slopes
- ☐ Improve infiltration rates
- ☐ Improve, mitigate, or remediate toxic landscapes and human exposure to risk
- ☐ Drought resistance, such as selecting appropriate water-efficient trees for project climate zone
- ☐ Enhance wildlife habitat, such as riparian habitat for fish, birds, and other animals
- ☐ Other

The Wilson family Forest is located between Holland Road, a highly travelled four lane road, and West Neck Creek. The project will serve to protect water quality in the creek.

## SDG 15 - Life on Land

Goal: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Examples of project activities include, but are not limited to the following with increased functionality of green infrastructure:

- ☒ Plant or protect trees to reduce stormwater runoff
- ☐ Select water-efficient trees for climate zone and drought resistance
- ☒ Create and/or enhance wildlife habitat to improve local biodiversity
- ☐ Plant forested buffers adjacent to streams, rivers, wetlands, or floodplains
- ☐ Prevent soil erosion by protect steep slopes
- ☐ Improve infiltration rates
- ☐ Other

The Wilson Family Forest will reduce runoff into West Neck Creek and protect wildlife habitat. West Neck has been preserved in a natural state in nearby areas, and the project will help connect wildlife populations.



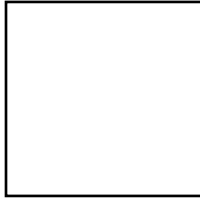
## SDG 17 - Partnerships for the Goals

Overall: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Examples of project activities include, but are not limited to:

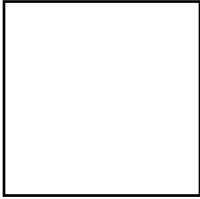
- ☐ Promote community connections and capacity for social resilience by engaging local residents or users in tree management, or other events to connect people to the project
- ☐ Community engagement in project design, including such things as engaging and respecting existing relationships and social networks, community cultural traditions, and public participation methods that are empowering and inclusive
- ☐ Community participation in project implementation, including such things as addressing and removing barriers to participation, promote ongoing community-based care and access to financial resources
- ☐ Other

## Summary of Project Social Impacts



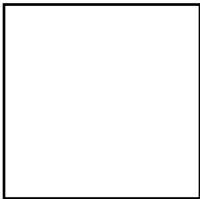
### Climate Action

Project will sequester atmospheric CO2 and help mitigate climate change.



### Life Below Water

Due to its proximity to West Neck creek, preservation of this forest will have a positive impact on the fish and wildlife of the creek.



### Life on Land

The forest is already home to thriving mammal and bird populations. Its preservation will in turn sustain them. This is in an area of rapid development and habitat destruction.

