



Richmond, VA - Evergreen and East End Preservation Project Project Design Document

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PROJECT OVERVIEW

Basic Project Details

Project Name: Evergreen and East End Preservation Project

Project Number: 006

Project Type: Preservation Project (under the Tree Preservation Protocol – 40 years, version 7.40, dated June 1, 2019)

Project Start Date: November 6, 2019

Project Location: Richmond, Virginia

Project Operator Name: Enrichmond Foundation

Project Operator Contact: Jessica Maffey, Assistant Manager of Operations & TreeLab; (804) 234-3905 ext. 108 or jmaffey@enrichmond.org

Project Area Parcels

List of parcel or parcels covered by the Preservation Commitment(s), collectively defining the Properties, noting which ones contain the Project Area, each with a unique identifier

Jurisdiction / Location	Property Name	Property Parcel Number	Description / Notes
Richmond, VA	East End	E0003307011	1.83 acres – property straddles City of Richmond and Henrico County
Henrico County, VA	East End	805-721-5113	14.291 acres
Richmond, VA	Evergreen	E0003307004	59.2 acres

Project Area Ownership

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, provide agreement(s) between Project Operator and landowner authorizing Project Operator to execute this project. Include documentation including title/filename as an attachment.

Project Owner: Parity LLC

Parity, LLC is a Virginia limited liability company and the landowner of the East End and Evergreen Cemetery properties. The Enrichmond Foundation is a nonprofit who has committed to undertake a tree preservation project on the properties owned by Parity, LLC. The two parties have agreed, through a signed “Agreement to Transfer Potential Credits”, that Enrichmond is allowed to undertake the tree preservation project on the properties, including developing and selling potential carbon credits through the project.

Additional Notes:

A conservation easement was added to the Project Area and the existing trees will be managed. The Project avoids conversion of the property from a treed cemetery to a grass cemetery, and the cemetery use is not displaced.

Title and filename of relevant attachment(s):

Title: Agreement to Transfer Potential Credits

File: Evergreen and East End Agreement to Transfer Credits Final Recorded 20191212.pdf

LOCATION OF PROJECT AREA (Section 1.3, 1.4)**Location Eligibility**

Project Areas must be located in parcels within or along the boundary of at least one of the following criteria. Describe how the Project Area(s) meet the location criteria.

- A) The Urban Area boundary ("Urban Area"), defined by the most recent publication of the United States Census Bureau*
- 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 land owned, designated, and used by a municipal or quasi-municipal entity such as a utility for source water or water shed protection;*
- E) 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 above.*

Project Area(s) location eligibility description:

The Project Area is comprised of three parcels, informally known as East End Cemetery and Evergreen Cemetery. East End Cemetery straddles the City of Richmond boundary, and meets criteria A and B. Evergreen Cemetery is wholly within the City of Richmond boundary, and meets criteria A and B. The Project Area excludes one open area and is a total of 64.76 acres.

Title and filename of relevant attachment(s):

Title: East End and Evergreen Cemeteries Project Area Map

File: EnRichmond_MainMap_revised.pdf

Maps

Provide a map 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). Map should include relevant urban/town boundaries. Include title/filename of relevant attachments.

Geospatial location (boundaries) of Project Area

Title (and filename) of relevant attachment(s):

Title: EnRichmondParcelOutline_WGS84

File: EnRichmondParcelOutline_WGS84.shp

Regional-scale map of Project Area

Title (and filename) of relevant attachment(s):

Title: East End and Evergreen Cemeteries Regional Scale Map

File: EnRichmond_RegionalScaleMap_revised.pdf

Map(s) of Project Area

Title and filename of relevant attachment(s):

Title: East End and Evergreen Cemeteries Project Area Map
File: EnRichmond_MainMap_revised.pdf

DEMONSTRATION OF THREAT OF LOSS (Section 4.2, 4.3)

Project Operator must demonstrate that the Project Area is eligible per existing land use designations. Provide evidence to support the following statement: "Prior to the Preservation Commitment(s), the Project Trees were not preserved from removal through a Recorded Encumbrance, Governmental Preservation of Trees on Public Land, or other prohibitions on their removal."

Describe all "overlay zones", 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). If such pre-existing tree/forest restrictions cover any portion of the Project Area, explain how such restrictions still permitted development and tree removal (such that there was a verifiable threat of loss consistent with your Quantification) and provide supporting evidence including a map.

Land use designation(s) for the Project Area:

The Evergreen parcel is zoned R5- Residential (Single Family), and the East End parcels are zoned R5 and M-2 (General Industrial District).

Overall Explanation:

The total perimeter of the Property Area is 9,561.13 ft and is made up of 84.73% land in developable uses, including land that is privately-owned and zoned as light industrial and general industrial. The surrounding properties include Gillies Creek Industrial Recycling, Reese Sandblasting, and land used for cellular towers. The perimeter measurements were done using ArcGIS Pro 2.4.2. The Property Area is bordered by Stony Run Creek and Gillies Creek, two small waterways that are not subject to any critical environmental designations. The East End and Evergreen Cemetery properties are held on and subject to one conservation easement. There are no other critical area designations on the Project Area.

Title (and filename) of relevant attachment(s):

Title: East End and Evergreen Cemeteries Project Area Map
File: EnRichmond_MainMap_revised.pdf

PRESERVATION COMMITMENT

Provide a complete copy of the written Preservation Commitment. Include title/filename, date, and term. If the Project Operator (PO) is not the same as the landowner and the carbon rights (right of PO to receipt and disposal of credits) are not established in the Preservation Commitment itself, then attach the agreement establishing these rights. If Project Area does not have the same boundaries as Preservation Commitment, please state the reasons why, and reference the PDD section(s) where those reasons are discussed in detail.

Title and filename of relevant attachment(s):

Title: 1) Declaration of Restrictive Covenants, 2) Deed of Easement

File: 1) Evergreen East End Declaration of Restrictive Covenants Final Recorded 20191212, 2) Evergreen Easement Amendment Add East End Final Recorded.pdf

Date: 1) December 12, 2019 (Recorded), 2) December 11, 2018, amended September 11, 2019 (signed), September 23, 2019 (Recorded)

Preservation Term (years applicable): In perpetuity.

Additional Notes:

MONITORING AND REPORTING

Describe your plans for continuity of operation of this Carbon+ Project, including monitoring and reporting. If Project Operator plans to claim credits for future growth, describe methods that will be used to quantify future growth.

The Enrichmond Foundation will monitor the Project Area and report to City Forest Credits every three years for forty years, in accordance with the Tree Preservation Protocol. The Project Area is a place of great historical and environmental significance; the plans for its restoration include best practices in forestry management and keeping the space safe and accessible for visitors. Currently, Enrichmond recruits volunteers to assist with removal of invasive species, including invasive trees, meant to increase the overall health and longevity of the forest. Enrichmond has engaged the Virginia Department of Forestry, which offered its recommendations for maintaining a healthy forest on the properties in two Community Forest Management reports. Enrichmond plans to follow these management reports, which will include invasive species removal and management, tree health assessment, as well as mitigation or removal of dead or dying trees. In its annual report, Enrichmond will comment on overall forest health as well as estimate the percentage of trees removed.

Enrichmond currently hosts weekly volunteer clean ups at the cemetery, as well as grave recording and data entry. Enrichmond will continue its regular volunteer opportunities and host annual events, such as a Martin Luther King, Jr. Day of Service and other large-scale volunteer opportunities to further reach out to the surrounding community. A volunteer advisory board, made up of family members and other stakeholders, is leading the execution of the master plan for restoration at the properties. Enrichmond staff will continue to work with the advisory board members to ensure that the work on the ground is reflective of the long-term vision for the properties, with consideration for the health of the forest and environment. Going forward, Enrichmond will continue to develop community investment in the space through volunteer events, grave recording activities, and educational programming led by experts in the cultural and historical content present at the properties.

QUANTIFICATION DOCUMENTATION (Section 10)

Follow detailed instructions in the Protocol for conducting quantification and utilize 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 % canopy or carbon stocking in any way.

Method for determining canopy cover (e.g. i-Tree, inventory, other):

iTree Canopy.

Brief description of approach to quantifying carbon (e.g. Forest Service tables, inventory, other):

We used approach 10.1.A found in the Tree Preservation Protocol, which includes referencing US Forest Service General Technical Report (GTR) NE-343 tables to determine the type of stand. The stand age was determined by referencing historical aerial photos of the properties. The percent canopy cover was determined using iTree Canopy with a shapefile of the exact property boundaries minus an open area that is not part of the Project Area. The calculations were completed using the Carbon Quantification Spreadsheet.

Title and filename of attached Excel version of your completed Carbon Quantification Spreadsheet:

Title: East End and Evergreen Carbon Quantification

File: JM Calculations_Evergreen and East End Carbon Quantification Calculator 20191024.xlsx

Summary numbers from Carbon Quantification Spreadsheet

Project Area (acres)	64.76
Does carbon quantification use stratification (yes or no)?	No
Percent tree canopy cover within Project Area	82%
Project stock / acre (tCO ₂ e/acre)	8,296
Accounting Stock / acre (tCO ₂ e/acre)	6,637
On-site avoided biomass emissions (tCO ₂ e / acre)	5,913
On-site avoided soil carbon emissions (tCO ₂ e / acre)	0
Deduction for displaced biomass emissions (tCO ₂ e / acre)	--
Deduction for displaced soil emissions (tCO ₂ e / acre)	--
Credits from avoided biomass emissions (tCO ₂ e / acre)	5,973
Credits from avoided soil emissions (tCO ₂ e / acre)	--
Total credits from avoided biomass and soil emissions (tCO ₂ / acre)	5,973
Credits attributed to the project (tCO ₂), excluding future growth	5,973
Contribution to Registry reversal pool	597
Total credits to be issued to the Project Operator (tCO₂) <i>(excluding future growth)</i>	5,376

Data Sources & Filenames Referenced in Carbon Quantification Spreadsheet (Section 10)

The following list of information is only a summary for ease of navigation of your PDD.

Accounting Stock Measurement Method

Description of quantification, including methods, forest type, and data sources.

We used the method 10.1.A from City Forest Credit's Tree Preservation Protocol. We referenced the US Forest Service General Technical Report (GTR) NE-343, Appendix B, Table B44. The forest type (B44, Oak-hickory, Southeast) was determined by referencing the Community Forest Management Plans prepared for Enrichmond by the Virginia Department of Forestry for both East End and Evergreen Cemeteries. The canopy cover percentage was determined using iTree Canopy.

Title (and filename) of relevant attachment(s):

Title: East End Cemetery Community Forest Management Plan, 2019

File: EastEndCemetery Forest Management Plan.pdf

Title: Evergreen Cemetery Community Forest Management Plan, 2019

File: EvergreenCemetery Forest Management Plan.pdf

GTR: https://www.nrs.fs.fed.us/pubs/gtr/ne_gtr343.pdf

If stratification is used, maps of strata and stratum definitions

Stratification was not used for carbon quantification.

Stand Maps

Explanation / statement of method(s) used:

The stand map was determined using the property boundaries, minus one open area not included in the Project Area. SKTWorks, a professional environmental surveying firm, prepared the map using ArcGIS Pro 2.4.2.

Title (and filename) of relevant attachment(s):

Geospatial location (boundaries) of Project Area

Title: EnrichmondParcelOutline_WGS84

File: EnrichmondParcelOutline_WGS84.shp

Map of Project Area

Title: East End and Evergreen Cemeteries Project Area Map

File: EnRichmond_MainMap_revised.pdf

Forest Age

Age and explanation / statement of method(s) used:

The forest age was determined to be 40-50 years. The final age was determined taking the median of that estimate, 45 years. We based this determination on aerial imagery of the properties from 1936 and 1953.

Title (and filename) of relevant attachment(s):

Title: 1936 Aerial map of East End and Evergreen

File: east-end-and-evergreen-1936-hi-res.jpg

Title: 1953 Aerial map of East End and Evergreen

File: east-end-and-evergreen-1953-hi-res.jpg

Forest Composition

Composition and explanation / statement of method(s) used:

The forest composition, according to the GTR, is Oak-hickory, Southeast. The primary tree species present on the properties are oak, hickory, maple, poplar, and pine, with oak and hickory consistently prominent across both properties. We referenced the US Forest Service General Technical Report (GTR) NE-343, Appendix B, Table B44. The forest type (B44, Oak-hickory, Southeast) was determined by referencing the Community Forest Management Plans prepared for Enrichmond by the Virginia Department of Forestry for both East End and Evergreen Cemeteries. The Forest Management plans were prepared using on-site surveying by Virginia Department of Forestry staff with the ESRI Collector app.

Title and filename of relevant attachment(s):

Title: East End Cemetery Community Forest Management Plan, 2019

File: EastEndCemetery Forest Management Plan.pdf

Title: Evergreen Cemetery Community Forest Management Plan, 2019

File: EvergreenCemetery Forest Management Plan.pdf

GTR: https://www.nrs.fs.fed.us/pubs/gtr/ne_gtr343.pdf

Canopy Cover

Percent cover and explanation / statement of method(s) used:

The canopy cover of the Project Area is 82%. The percentage was determined using iTree Canopy with a shapefile of the exact property boundaries minus an open area that is not part of the Project Area. Through iTree, a total of 51 points were surveyed, with a standard error of 5%.

Title (and filename) of relevant attachment(s):

Title: Survey of iTree Points

File: Evergreen and East End Canopy Cover_iTree_first pass (2)

Title: Spreadsheet of iTree Points

File: Evergreen and East End Canopy Cover_iTree_first pass.csv

Fraction of Biomass at Risk

Fraction at risk and explanation / statement of method(s) used:

A conservation easement was added to the Project Area and the existing trees will be managed instead of converted to grass, while continuing cemetery use. The Project Area contains parcels zoned for

residential and commercial/industrial uses. The Tree Preservation Protocol section 10.2 states that areas zoned as residential or commercial/industrial have 90% avoided clearance. Since the Project Area contains both of those zoning designations and would otherwise have been converted to grass, the biomass at risk for clearance is 90%.

Title (and filename) of relevant attachment(s): N/A

Impervious Limits

Maximum fraction impervious cover and explanation / statement of method(s) used:

The Project avoids conversion of the property to grass, corresponding to the Tree Preservation Protocol section 10.4C, which states that no soil carbon loss is avoided if the property were to retain live vegetation on the ground as its developed use. Therefore, the avoided soil carbon emissions are zero, since if the property were to be developed, it would be converted to grass and would not include impervious cover.

Title (and filename) of relevant attachment(s): N/A

Existing Impervious Area

Existing impervious cover fraction and explanation / statement of method(s) used:

The Project has zero displaced development because the avoided conversion due to development is avoiding a conversion of the treed cemetery to a grass cemetery, thus the cemetery use is not displaced. The Tree Preservation Protocol section 10.5 does not apply to the Project Area, as there is no displaced development to quantify.

Title (and filename) of relevant attachment(s): N/A

Planned Project Activities

Description / statement of method(s) used:

Enrichmond will engage volunteers and staff to conduct maintenance on the property, including following best practices in forestry management to contribute to the longevity of the trees and safety of the properties. The project activities include removal of invasive species of plants, removal of dead or dying trees, and monitoring tree health. Please see the "Monitoring and Reporting" section for more information.

Title (and filename) of relevant attachment(s): N/A

Additional Notes

If the Project Area were developed, it would be converted to grass and retain its use as a cemetery. The Project avoids conversion of the property from a treed cemetery to a grass cemetery, and the cemetery use is not displaced.

CO-BENEFITS QUANTIFICATION DOCUMENTATION

Optional: If Project Operators has conducted co-benefits quantification for this Project, please summarize results and list source / supporting files here.

The co-benefits quantification for the Project Area is based on an 85% deciduous and 15% coniferous tree canopy, over 64.76 acres in the South climate zone.

The calculator indicates that the Project Area yields a total of \$42,218.39 worth of ecosystem services per year. The ecosystem services include rain interception (\$30,112.12 total), CO2 avoided (\$766.13 total), air quality (\$4,078.25 total), and energy savings (\$7,261.90 total). The Project Area yields \$651.92 per acre of tree canopy, per year.

File: Evergreen and East End CoBenefits Quant Final 20191203.xlsx