



TRAVIS COUNTY FLOODPLAIN REFORESTATION PROGRAM

Project Design Document

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PROJECT OVERVIEW

Basic Project Details

Project Name: Travis County Floodplain Reforestation Program

Project Planting Type: Riparian Planting

Project Location (*property name and city, town, or jurisdiction*): Travis County, Texas

Project Operator Name: TreeFolks

Project Operator Contact: Andreina Alexatos, Director of Reforestation, 512-443-5323, andreina@treefolks.org

Project Description

Include details of where the project will take place, how many trees will be planted, what type of planting, partners, overall project goals, and any other relevant information.

TreeFolks, Austin Office of Sustainability, Austin Watershed Protection Department and Travis County are launching the Travis County Floodplain Reforestation Program to restore healthy forest buffers of local rivers and streams in eastern Travis County. Carbon+ credits generated from this project will be sold to the City of Austin to help meet the city's 2020 carbon neutrality goal. Using funds allocated for carbon offsets to purchase local credits from these riparian plantings keeps the City of Austin's investments localized while addressing global climate change.

The pilot and program, both operated by TreeFolks, will reforest floodplain on public and private lands. TreeFolks will work with volunteers and youth service organizations to plant native saplings and provide the reforestation services to private owners free of charge. These services include, for those applicants who choose to participate and are selected, free trees, free planting services, and free consultations.

The tree planting projects will increase canopy cover and diversity in an ecosystem that needs help. The City of Austin Watershed Protection Department recently concluded that diverse wooded corridors along creeks and riparian zones here are rare.

The reforestation project also serves to engage local community members with the environment, complementing Austin's participation in the Biophilic Cities Network and the Children and Nature collaborative and aligning with citywide green infrastructure efforts. Reforesting Austin's local stream corridors will create lasting change, both within the city limits and across eastern Travis County floodplains.

The project will encompass 85.92 acres total, of which 45.54 are privately owned and the rest owned by the City of Austin or Travis County. We will be planting 47,279 saplings at 8' x 10' spacing, in order to provide canopy style coverage in these riparian zones.

LOCATION AND OWNERSHIP OF PROJECT AREA (Section 1.3, 2)

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.*

Ownership Eligibility

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

- A) Own the land, the trees, 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, own the Project trees and credits within that easement, 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 or other benefits delivered by Project trees on that landowner’s land. If Project trees are on private property, this agreement must be recorded in the property records of the county in which the land containing Project trees is located.*

Project Area Location

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

The Project Area, including all plantings, are located in the Eastern portion of Travis County, Texas along degraded riparian corridors. The Travis County Floodplain Reforestation Program meets the following 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 land owned, designated, and used by a municipal or quasi-municipal entity such as a utility for source water or water shed protection*

All plantings are within an urban boundary as defined by the 2010 Census and/or within or adjacent to Austin’s Watershed Protection jurisdiction.

The urban areas included in this PDD are: Elgin, TX (26659); Austin, TX (04384); Manor, TX (54050); Del Valle, TX or Elroy, TX (27290).

Please see attachment: TCFRP Parcel Map; Jurisdiction_Map; TCFRP Pilot Project Area; TCFRP Planting Parcels; and individual property maps located in the “Property Maps” folder

Project Area Ownership and Right to Receive Credits

Describe the property ownership and include relevant documentation including title/filename as an attachment (Declaration of Land Ownership or Agreement from Owner to Transfer Credits.)

Private Land – A and C – There were two separate scenarios for including landowners in this program:

1. The landowner agrees to allow TreeFolks to transfer credits and signs an Agreement and Declaration of Covenants.
2. The landowner agrees to allow TreeFolks to transfer credits and signs an Agreement to Transfer Potential Credits.

Please see attachments: Agreement and Declaration of Covenants – Updated and Agreement to Transfer Potential Credits - Private

City and County Land – B – City of Austin and Travis County planted areas are on public parkland and have assumed a no-mow policy in the area. City or County shall not cut, harvest, or damage trees in the Tree Project except in cases of emergency involving fire or flooding or to mitigate hazard if trees are identified as a hazard by a certified arborist.

Please see attachments: Agreement to Transfer Potential Credits – Public

All signed and notarized agreements are saved in the “Right to Receive Credits” folder and labeled by property owner name. The original templates are also saved in the same folder.

Maps

Provide a detailed map of the Project Area. Also provide a map that shows the Project Area within the context of relevant urban/town boundaries. Include title/filename of relevant attachments.

1) Map of Project Area

TCFRP Pilot Project Area.JPG

Jurisdiction_Map.PDF

2) Regional-scale map of Project Area

TCFRP Planting Parcels.JPG

TCFRP Parcel Map.PDF

TCFRP Pilot Project Area.PDF

Note: Individual property maps are located in the “Property Maps” folder by owner name.

Additional Notes

PLANTING DESIGN

Describe planting design. Will the trees be planted as scattered single trees, clustered groups like parks plantings, or as riparian plantings (closely spaced with high expected mortality)?

Planting occurs during the winter months (Nov-Feb) through volunteer events or contracted labor. Planting is done on an 8'x 10' grid-like system with only 25% of the seedlings expected to reach maturity. The dense planting accounts for such a high mortality rate due to the fact that the seedlings are not cared for once planted. This method is called the Rapid Riparian Revegetation method (Guillozet et al., 2014) and it is intended to speed up the rate of natural recruitment by mimicking nature and adding native woody competition. Over time, the grasses and shrubs that initially take over the riparian area begin to lend way to other (more permanent) species that make up the future riparian forest. Sites will be chosen for reforestation if the planting area is within a floodplain, not already forested, and not be a highly incised bank (due to lack of connection to the water table).

Describe your data collection on Project Trees. For example, Project Operator can use the data collection sheet contained in the CFC quantification tool or your own method.

TreeFolks will use a range of tools to collect data on Project Trees, including geographic information systems (GIS) and the Theodolite app. GIS will be used to continually update Project maps and store data. The Theodolite app will be used to record photo points for all planting areas. The app includes a range of information on each photo, including coordinates and cardinal directions.

MONITORING AND REPORTING PLANS

Project Operator is required to submit an annual monitoring report. The report must contain any changes in eligibility status of the Project Operator and any significant tree loss. Confirm and describe your plans for annual monitoring of this project.

Monitoring of Project Trees will be done with geographic information systems (GIS), the Theodolite app, and canopy will be analyzed in year 4 and onward using i-Tree as well as any canopy information provided by USGS. GIS will be used to continually update Project maps and store data. The Theodolite app will be used to record photo points for all planting areas. The app includes a range of information on each photo, including coordinates and cardinal directions to ease the ongoing collection of survival data. TreeFolks will submit annual monitoring reports containing the required information using the template provided by City Forest Credits and in conformance with the attached CFC Planting Riparian Quantification and Monitoring Standards South Central document.

[Attachment – CFC Planting Riparian Quantification and Monitoring Standards South Central.pdf](#)

CARBON AND CO-BENEFITS QUANTIFICATION DOCUMENTATION (Section 12 and Appendix B)

Describe which quantification approach you anticipate using. When requesting credits after planting or in Years 4 or 6, attach one of the three documents below and provide the data you have collected for Project Trees.

- 1) *Single Tree Quantification Tool*
- 2) *Canopy Quantification Tool*
- 3) *Riparian Quantification with CO2 calculated per acre*

If your project is a riparian planting, provide the following:

- *General location of plantings on a map*
- *Most common 4 or 5 species and numbers of trees to be planted*
- *Approximate number of trees per acre*
- *Total acreage planted*

Canopy/Riparian

The approach for establishing carbon dioxide stored by tree canopy is outlined in a separate document prepared by Dr. Greg McPherson. Per the Riparian Quantification Approach, the CO2 Index is 106.7 t CO2 per acre of tree canopy. Therefore, this project is estimated to generate 9,167.66 credits. We request the issuance of 10% of the total (916 credits), less a 5% (45 credits) for the buffer pool upon successful third-party verification, for a total of 871 credits.

[Attachment – CFC Planting Riparian Quantification and Monitoring Standards South Central.pdf](#)

[Attachment – South Preservation CoBenefits 20191205.xls](#)

General Location of Plantings:

Please see maps

Most Common Species:

Pecan – *Carya illinoensis* – 7,215
American Sycamore – *Platanus occidentalis* – 4,925
Bald Cypress – *Taxodium distichum* – 3,565
Honey Locust – *Gleditsia tiacanthos* – 3,060
Mexican Buckeye – *Ungnadia speciose* – 2,465

Total Trees Planted:

47,279

Total Acreage Planted:

85.92

Number of Trees per Acre

550/acre

	Deciduous Tree Cover	Coniferous Tree Cover	Total Tree Cover	Non-Tree	Total Project Area
Percent (%)	90%	10%	100%	0%	100%
Area (sq miles)	0.121	0.013	0.134	0.000	0.13
Area (m2)	312,933	34,770	347,703	0	347,703
Area (acres)	77.328	8.59	85.92	0.00	85.92

Ecosystem Services	Resource Units Totals	Res Unit/Acre Tree Canopy	Total \$	\$/Acre Tree Canopy
Rain Interception (m3/yr)	13,356.1	155.4	\$34,933.95	\$ 406.59
CO2 Avoided (t, \$20/t/yr)	48.3	0.6	\$966.77	\$ 11.25
Air Quality (t/yr)				
O3	1.3742	0.0160	\$4,082.85	\$ 47.52
NOx	0.3484	0.0041	\$1,035.10	\$ 12.05
PM10	0.7755	0.0090	\$875.89	\$ 10.19
Net VOCs	-0.2091	-0.0024	-\$593.66	\$ (6.91)
Air Quality Total	2.2890	0.0266	\$5,400.17	\$62.85
Energy (kWh/yr & kBtu/yr)				
Cooling - Elec.	113,415	1,320	\$8,608.18	\$ 100.19
Heating - Nat. Gas	55,469	646	\$576.34	\$ 6.71
Energy Total (\$/yr)			\$9,184.52	\$106.90
Grand Total (\$/yr)			\$50,485.42	\$587.59

ADDITIONAL INFORMATION (OPTIONAL)

Include additional noteworthy aspects of the project. Examples include collaborative partnerships, community engagement, or project investors.

Partnerships. Strong partnerships with Travis County and City of Austin has meant regular and substantive support as we go about implementing the program. We have had the support of County and City administrations as we begin talks for program funding sustainability. The City of Austin’s Watershed Protection Department has been regularly available for technical assistance in addition to providing a

\$55,000 match. This initiative is funded in part by the Nature Conservancy in partnership with the Doris Duke Charitable Foundation.

Outreach. Initial outreach on behalf of the program was smooth. Data from Travis County Appraisal District was used to identify eligible parcels, with an initial batch of 119 parcels identified by our City of Austin partners as most desirable due to the lack of canopy cover along the riparian/floodplain area. From the Travis County 100-year floodplain database, 954 additional parcels were selected for their Farm and Ranch Improvement designation (as to avoid sending mailers to highly urban residential or commercial lots). Direct mailers were prepared for all 1,073 parcels and sent on 12/15/18.

Other outreach methods included active outreach to community groups including Wilbarger Creek Conservation Alliance, Pines and Prairies Land Trust, Austin-Bastrop River Corridor Partnership, Gilleland Creek Neighborhood Association, and the Colorado River Land Trust. “Campaign-style” highway signs were developed and deployed in areas near rural street intersections, and some were also given to program participants to advertise their participation and encourage neighbors to do the same. Finally, the program received press in the form of articles published in Texas Living Waters, Biophilic Cities, City Lab, and Pacific Standard.