



## Project Design Document

### TABLE OF CONTENTS

Project Overview .....	2
Location of Project Area .....	3
Demonstration of Threat of Loss .....	4
Preservation Commitments .....	5
Monitoring and Reporting Plans .....	6
Carbon Quantification Documentation.....	7
Co-Benefits Quantification Documentation .....	10

## PROJECT OVERVIEW

### Basic Project Details

**Project Name:** King County 2018 Urban Forest Carbon Project

**Type:** Preservation Project

**Project Location:** Near Sammamish in King County, Washington

**Project Operator Name:** King County Department of Natural Resources and Parks

### 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	Unique Identifier	Description / Notes
King County	Soaring Eagle Regional Park Addition	252506-9090	Protected by the 12/13/2017 conservation easement (updated 11/15/2018) and contains Project Area
King County	Soaring Eagle Regional Park Addition	252506-9091	Protected by the 12/13/2017 conservation easement (updated 11/15/2018) and contains Project Area

### 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.*

King County is the landowner and project operator.

### Additional Notes:

Title and filename of relevant attachment(s):

Amended Transfer of Development Rights Conservation Easement (Soaring Eagle Phase 2 Amended CE 11-15-2018\_RECORDERED.pdf)

Project Area has been drawn to exclude portions of the Preservation Commitment where (pre-existing) critical areas restrictions may protect trees from removal; see *Demonstration of Threat of Loss* section.

## **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 Areas meet location eligibility criteria A and B.

Title and filename of relevant attachment(s):

Location Eligibility Map (CFC\_KC2018Batch\_LocationEligibilityMap.v201907.pdf)

Location Eligibility Local-Scale Map for Soaring Eagle Park Addition Property  
(CFC\_KC2018Batch\_SoaringEagle\_LocalScaleLocationEligibilityMap.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):**

[n/a – shapefiles] (CFC\_KC2018Batch\_SoaringEagle\_ProjectArea.zip)

### **Regional-scale map of Project Area. Title and filename of relevant attachment(s):**

Project Locator Map (CFC\_KC2018Batch\_ProjectLocatorMap.v201907.pdf)

### **Map(s) of Project Area. Title and filename of relevant attachment(s):**

Map of Project Area – Soaring Eagle Park Addition Property  
(CFC\_KC2018Batch\_SoaringEagle\_MapOfProjectArea.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:**

King County zoning RA-5 zone, residential use allowed

**Overall Explanation:**

The Soaring Eagle Regional Park Addition appraisal concluded that highest and best use (HBU) was residential development outside of environmentally sensitive areas and demonstrated pre-existing easements & restrictions did not preserve the project trees. It also showed that HBU of residential development without preservation commitment is valued multiple times greater than conservation use after the preservation commitment.

Mapped critical areas are present on the Property but are not known to prevent tree removal and development in the areas that have been included in the Project Area. King County Critical Areas which are known to significantly restrict clearing and development include wetlands and their buffers, wildlife habitat networks, steep slopes and landslide hazard, waterbodies / watercourses and their buffers, channel migration zones, and floodways and 100-year floodplains. Relevant to the Soaring Eagle Park Addition Property are the following: streams and a maximum 165 foot riparian buffer around them; wetlands and a maximum 300 foot buffer around them; points at which the wildlife habitat network enters and exits tax parcels and a 150 foot buffer around those points, as well as a freely movable 300 foot-wide corridor connecting the entry and exit points. For each of these relevant Critical Areas, buffers actually required on the Soaring Eagle Park Addition Property in the case of residential development are unlikely to be of the maximum possible size (given site conditions); however, the Project Area assumes maximum possible buffers in order to be conservative in crediting. Potential steep slope hazard areas are also present on the property, but do not, on their own, completely prevent development (though they do typically make development more expensive). To be conservative in crediting, Project Area has been drawn to provide at least a 50-foot buffer around potential steep slope hazard areas, as would be required if they were landslide hazard areas (given the < 200ft rise of their slopes). Potential steep slope hazard areas are frequently cleared and developed within King County.

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

Appraisal of Soaring Eagle Park Addition Property Prior to Preservation Commitment  
(SoaringEagle\_2016-81\_Appraisal\_GreenbirdLLC.pdf)

See “summary of salient facts and conclusions” section and “environmentally sensitive areas” section of appraisal.

## **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/filename:** Amended Transfer of Development Rights Conservation Easement (Soaring Eagle Phase 2 Amended CE 11-15-2018\_RECORDERED.pdf)

**Date:** 12/13/2017, updated 11/15/2018

**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.*

Monitoring and reporting will be done by the staff of the King County Forest Carbon Program, which is a program of the Department of Natural Resources & Parks of King County.

The project properties will be managed in accordance with the terms of the conservation easements which have been placed over them, which permanently protect the conservation values of the properties. There are no specific locations planned for future activities, though limited development of non-motorized forest trails and associated trailhead facilities is allowed by easements and is contemplated. Consequently, conservative (maximum estimated) deductions have been made from creditable Project Area (via deductions to avoided biomass and soil emissions calculations) to avoid claiming carbon credits from any trees that may be removed and soil that may be disturbed for such limited enhancement of passive recreation opportunities on the parcels.

## 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):

Utilized the i-Tree Canopy tool to estimate % tree canopy cover.

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

The afforestation tables from Appendix B of the US Forest Service General Technical Report (GTR) NE-343 (USFS GTR NE-343) for Pacific Northwest, West, alder-maple stands (B21) and Douglas-fir stands (B22) are used for carbon quantification.

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

CFC\_KC2018Batch\_CarbonQuantSpreadsheet.v201907.xls

CFC\_KC2018Batch\_CarbonQuantSpreadsheet.v201907.pdf

### Summary numbers from Carbon Quantification Spreadsheet

Project Area (acres)	15.1
Does carbon quantification use stratification (yes or no)?	No
Percent tree canopy cover within Project Area	92
Project stock / acre (tCO <sub>2</sub> e/acre)	490
Accounting Stock / acre (tCO <sub>2</sub> e/acre)	392
On-site avoided biomass emissions (tCO <sub>2</sub> e / acre)	268
On-site avoided soil carbon emissions (tCO <sub>2</sub> e / acre)	6
Deduction for displaced biomass emissions (tCO <sub>2</sub> e / acre)	49
Deduction for displaced soil emissions (tCO <sub>2</sub> e / acre)	2
Credits from avoided biomass emissions (tCO <sub>2</sub> e / acre)	219
Credits from avoided soil emissions (tCO <sub>2</sub> e / acre)	4
Total credits from avoided biomass and soil emissions (tCO <sub>2</sub> / acre)	223
Credits attributed to the project (tCO <sub>2</sub> ), excluding future growth	3,361
Contribution to Registry reversal pool	336
<b>Total credits to be issued to the Project Operator (tCO<sub>2</sub>) (excluding future growth)</b>	<b>3,025</b>



## **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.*

Used option A – estimation of Accounting Stock using USFS GTR NE-343

Title and filename of relevant attachment(s):

[n/a – the relevant afforestation tables, Appendix B, from USFS GTR NE-343 already included in Carbon Quantification Spreadsheet]

### **If stratification is used, maps of strata and stratum definitions**

Stratification is not used for carbon quantification.

### **Stand Maps**

Explanation / statement of method(s) used:

Stand boundaries drawn in ArcGIS based on approximate age of establishment (see Forest Age Info below) given all stands in species grouping of conifer-deciduous mix best represented in GTR tables by PNW West Douglas fir – alder-maple. Stand areas measured in ArcGIS.

Title and filename of relevant attachment(s):

[n/a – shapefile] (CFC\_KC2018Batch\_SoaringEagle\_Stands.zip)

Map of Forest Stands for Soaring Eagle Park Addition Property  
(CFC\_KC2018Batch\_SoaringEagle\_MapOfStands.pdf)

### **Forest Age**

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

Utilized historical aerial imagery series to document presence (and persistence) of substantially complete tree cover on Project Area, by Property and stand.

Title and filename of relevant attachment(s):

Soaring Eagle Historic Aerials Series (CFC\_KC2018Batch\_SoaringEagle\_HistoricAerialImagery.pdf)

### **Forest Composition**

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

Utilized the i-Tree Canopy tool (with its built-in satellite imagery viewer, random point sampling, and manual classification process) to estimate coniferous-deciduous mix at the same time as canopy cover. Conducted on a Property basis given all stands in species grouping of conifer-deciduous mix utilizing both Douglas-fir and alder-maple PNW West GTR tables.

Title and filename of relevant attachment(s):

i-Tree Outputs

(CFC\_KC2018Batch\_SoaringEagle\_iTreeData.dat)

(CFC\_KC2018Batch\_SoaringEagle\_iTreeExport.csv)

(CFC\_KC2018Batch\_SoaringEagle\_iTreeReport.pdf)

### **Canopy Cover**

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

Utilized the i-Tree Canopy tool to estimate % tree canopy cover. Conducted by Property.

Title and filename of relevant attachment(s):

i-Tree Outputs

(CFC\_KC2018Batch\_SoaringEagle\_iTreeData.dat)

(CFC\_KC2018Batch\_SoaringEagle\_iTreeExport.csv)

(CFC\_KC2018Batch\_SoaringEagle\_iTreeReport.pdf)

### **Fraction of Biomass at Risk**

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

Appraisal states HBU as residential development, with 6 units on the Project parcels.

Title and filename of relevant attachment(s):

Appraisal of Soaring Eagle Park Addition Property Prior to Preservation Commitment

(SoaringEagle\_2016-81\_Appraisal\_GreenbirdLLC.pdf)

### **Impervious Limits**

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

Table 21A.12.030 in King County Code, using RA-5 zoning based on appraisal.

Title and filename of relevant attachment(s):

King County code (n/a – external source)

[https://www.kingcounty.gov/council/legislation/kc\\_code/24\\_30\\_Title\\_21A.aspx](https://www.kingcounty.gov/council/legislation/kc_code/24_30_Title_21A.aspx)

Appraisal of Soaring Eagle Park Addition Property Prior to Preservation Commitment

(SoaringEagle\_2016-81\_Appraisal\_GreenbirdLLC.pdf)

### **Existing Impervious Area**

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

Mapped known existing impervious surfaces.

Title and filename of relevant attachment(s):

Soaring Eagle Property Map of Known Existing Impervious Surfaces

(CFC\_KC2018Batch\_SoaringEagle\_MapOfExistingImpervious.pdf)

**Planned Project Activities**

Description / statement of method(s) used:

There are not currently specific locations planned for future activities, though limited development of non-motorized forest trails and associated trailhead facilities is allowed by easement and is contemplated. Consequently, conservative (maximum estimated) deductions have been made from creditable Project Area (via deductions to avoided biomass and soil emissions calculations) to avoid claiming carbon credits from any trees that may be removed and soil that may be disturbed for such limited enhancement of passive recreation opportunities on the parcels. These area-based deductions have been distributed across forest stands on a forest stand area-weighted basis.

Title and filename of relevant attachment(s):

Amended Transfer of Development Rights Conservation Easement (Soaring Eagle Phase 2 Amended CE 11-15-2018\_RECORDERED.pdf)

**Additional Notes**

**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.*

[n/a – not assessed]