

# Application for Listing an Improved Forest Management U.S. Forest Offset Project

## Contents

Part I. Entity Submitting Report.....	2
Part II. Offset Project Information .....	2
Part III. OPO/APD Information .....	2
Part IV. Land Ownership .....	2
Part V. Offset Project Area .....	3
Part VI. Offset Project Eligibility.....	6
Part VII. Carbon Stock Inventory .....	8
IFM-1 Standing Live .....	8
IFM-3 Standing Dead .....	9
IFM-6 Soil (if applicable).....	9
IFM-7 Carbon in in-use forest products .....	9
IFM-8 Forest product carbon in landfills .....	9
IFM- 9 Biological emissions from site preparation .....	10
IFM-14 Biological emissions/removals from change in harvesting on forestland outside the Project Area .....	10
IFM-17 Biological emissions from decomposition of forest products.....	10
Inventory Methodology.....	10
Inventory Confidence Statistics- Estimate .....	11
Reversal Risk Rating- Estimate .....	12
Part VIII. Offset Project Baseline .....	12
Part IX. Attestations and OPO Signature.....	14
Part X. Attachments .....	15
Attachment A: Forest Owner .....	15
Attachment B: Public Projects .....	15
Attachment C: Qualified Conservation Easement.....	15
Attachment D: Tribal Projects .....	15
Attachment E: Project Maps .....	15
1. Governing jurisdictions, and latitude/longitude coordinates .....	15
2. Public and private roads (map) .....	16
3. Towns (map).....	17
4. Major watercourses (4th order or greater), water bodies, and watershed description (map) .....	18
5. Topography (map).....	19
6. Townships, ranges, and sections (map) .....	19
7. Georeferenced shape file.....	19
Attachment F: Canopy Cover .....	19
Attachment G: 100-year Baseline .....	21
Attachment H: Baseline Onsite Carbon Stocks .....	22
Attachment I: Legal Constraints .....	22
Attachment J: Financial Feasibility .....	22

## Part I. Entity Submitting Report

This form being submitted by the contact person for the Authorized Project Designee (APD).

## Part II. Offset Project Information

Project Name: Blue Source - Great Mountain Forest Improved Forest Management Project

City: Norfolk

State: Connecticut

Zip: 06058

Registry: American Carbon Registry

Compliance Offset Protocol: U.S. Forest Projects

Version: June 25, 2015

Start Date: 3/10/2017

Reporting Period End Date: 9/09/2018

Crediting Period: 3/10/2017 to 3/09/2042

The commencement date is signified by the submittal of the project listing form to ACR. Per page 81 of the ARB 2015 Compliance Offset Protocol for U.S. Forest Projects, an IFM project's commencement date can be signified by the submittal of the project's listing information.

The reporting period end date is predicted to be 6 months from project commencement.

## Part III. OPO/APD Information

### **Offset Project Operator**

OPO Name: Great Mountain Forest Corporation

CITTS ID#: CA2525

Mailing Address: 201 Windrow Road Norfolk, CT 06058

Contact Person: Starling Childs

Phone Number: 860-542-5569

Email: eecostar@aol.com

### **Authorized Project Designee**

APD Name: Blue Source LLC

APD's CITTS ID#: CA1278

Contact Person: Joshua Strauss

Mailing Address: 1935 E Vine Street, Suite 300, Murray, UT 84121

Phone Number: 949-233-1501

Email: jstrauss@bluesource.com

## Part IV. Land Ownership

1. **Whether the Offset Project Operator is the owner in fee for the project area. Yes**
  - a. **If yes, provide documentation (e.g. deed of trust, title report) showing the Offset Project Operator's ownership interest in the property and its interest in the trees and standing timber on the property.**

Please see provided deeds.
  - b. **Are there other forest owners including in fee as well as third parties with existing property interests within the project area that may have an effect on the trees and standing timber**

located in the project area or parties with a material interest in the real property in the forest project?

No.

2. **A description of forestland and resource ownership for the real property within the project area.**

Great Mountain Forest Corporation is a private forestland owner.

3. **Offset project type (reforestation, improved forest management, or avoided conversion).**

Improved Forest Management

4. **A description of the management activities that will lead to increased carbon stocks in the Project Area, compared to the baseline.**

**Project Activities**

From the time of project commencement, there are no planned harvests.

**Baseline Activities**

Baseline harvesting activities would include following Best Management Practices (BMPs) for Connecticut. Additionally, "in conjunction with the GMF conservation restrictions; clear-cuts on GMF will not exceed 15 acres in area with the exception of salvage operations resulting from natural disaster, forest pests or disease; no more than 10% of the total Forest Legacy easement area will be clear-cut within a 10-year period; and at least 50% of the crown canopy shall be maintained when 34 harvesting timber within 100 feet of a stream or water body. These restrictions specifically apply to the Forest Legacy easement portion of GMF."

5. **Indicate if the offset project occurs on public or private lands, and further specify if the offset project occurs on any of the following categories of land:**

Private Lands

- a. **Land that is owned by, or subject to an ownership or possessory interest of a Tribe;** No
- b. **Land that is "Indian lands" of a Tribe, as defined by 25 U.S.C. §81(a)(1);** or No
- c. **Land that is owned by any person, entity, or Tribe, within the external borders of such Indian lands.** No

## Part V. Offset Project Area

1. **Governing jurisdictions, and latitude/longitude coordinates**

Governing Jurisdiction: 5th Judicial District, the State of Connecticut (USA). Litchfield County, Connecticut.

Latitude/ Longitude: 41.55' N -73.14' W

2. **Existing land cover and land use**

Land Cover: The Project Area's land cover is mainly mixed hardwoods and softwood-hardwood mix. All non-forested acres will be removed from the project. Some large plantation stands and other forest types may be removed from the project due to management constraints.

Land Use: Great Mountain Forest is currently a private forest.

3. **Forest vegetation types**

Forest Type	Acres	Percent
Mixed Hardwood	1,725.52	28%
Northern Conifer	2,095.96	34%
Northern Hardwood	2,262.70	37%

#### 4. Site classes

Overall, 100% of the property is considered low site class as the annual forest productivity < 84 cubic feet/ acre. Site class will be determined using NRCS soil data and the associated NRCS Forestland Productivity reports.

#### 5. Land pressures and climate zone/classification

The primary land pressure is conversion of natural hardwood stands to plantation-style forestry. There may also be pressure for land development.

Climactic zone: The project area falls within climactic 5b on the USDA plant hardiness zone map. Average annual extreme minimum temperatures for this zone range from -15 to -10 degrees Fahrenheit. Winters are moderately cold and the temperatures during spring and autumn are moderate and summers are warm, with more than 120 days annually with temperatures above 50°F (10°C). Average annual temperature ranges from 46 to 49°F (7.7 to 9.4°C). Annual snowfall varies widely across the region from 60" to 80" (1.5m to 2.0m) with snow generally remaining on the ground throughout winter. The average annual rainfall is about 55-60 inches (1.40-1.52m).

#### 6. Historical land uses, current zoning, and projected land use within project area and surrounding areas

This property and surrounding areas has been historically used for commercial timber operations. (See management history in section 8c for more detail).

The property, along with much of the surrounding areas, is not zoned- and falls within unincorporated areas of Litchfield County. Projected land use within project area and surrounding areas is a mix of industrial and private forestland.

#### 7. Project Area Assessment Areas

Supersection	Assessment Area	Acres
Lower New England - Northern Appalachia	Lower New England - Northern Appalachia Mixed Hardwood	1,725.52
	Lower New England - Northern Appalachia Northern Conifer	2,095.96
	Lower New England - Northern Appalachia Northern Hardwood	2,262.70
TOTAL		6,084.17

#### 8. General description of the forest conditions within the Project Area:

##### a. Species (tree) composition;

This project meets the natural forest management eligibility requirement of at least 95% native species based on the sum of the carbon in standing live tree carbon stocks, as 100% of the species in the inventory are native.

Species	Frequency (%)
AMERICAN BEECH	10%

AMERICAN ELM	0%
BASSWOOD	0%
BLACK CHERRY	2%
BLACK OAK	2%
EASTERN HEMLOCK	26%
OTHER HARDWOODS	3%
OTHER OAKS	0%
OTHER SOFTWOODS	2%
RED MAPLE	16%
RED OAK	22%
RED SPRUCE	0%
SUGAR MAPLE	2%
SWEET BIRCH	3%
WHITE ASH	1%
WHITE BIRCH	0%
WHITE OAK	0%
WHITE PINE	5%
YELLOW BIRCH	3%

**b. Age class distribution;**

Age Class	Acres	% Area
0-20	175	3%
21-40	415	7%
41-60	496	8%
61-80	2138	35%
81-100	2017	33%
100+	505	8%
Not Classed	341	6%
Total	6086	100%

**c. Management history;**

This property has been historically used to produce charcoal for the smelting of iron ore from the mid 1700's through the early 1920's. The forest management during this era was heavy cutting at short, 30-year rotations. Great Mountain Forest has been used for commercial forestry and as a working forest for the last century. GMF's stewardship plan lists "a proven history of sound forestry practices and extensive research", with an emphasis on sustainable forest management practices over the last 5 decades.

**9. Indicate whether the project will employ a Qualified Conservation Easement.**

No.

## Part VI. Offset Project Eligibility

1. **A statement as to whether any GHG reductions or GHG removal enhancements associated with the Project Lands have ever been listed or registered with, or otherwise claimed by, another registry or program, or sold to a third party prior to listing, including;**
  - a. **Have any lands within the Project Area ever been listed or registered with an offset project registry or program in the past?**
  - b. **Have greenhouse gas emission reductions or removal enhancements associated with lands within the Project Area been credited or claimed for the purpose of greenhouse gas mitigation or reduction goals, whether in a voluntary or regulatory context?**
  - c. **If yes, identify the registry or program (include vintages and reporting period).**

None of the Project Lands have ever been listed, registered with, or otherwise claimed by, another registry or program. No greenhouse gas emission reductions or removal enhancements associated with lands within the Project Area have ever been credited or claimed for the purpose of greenhouse gas mitigation or reduction goals, whether in a voluntary or regulatory context.

2. **A statement as to whether the project is being implemented and conducted as the result of any law, statute, regulation, court order, or other legally binding mandate? If yes, explain.**

The project is not being implemented and conducted as the result of any law, statute, regulation, court order, or other legally binding mandate.

3. **Declaration that the offset project does *not* employ broadcast fertilization.**

The offset project does not employ broadcast fertilization.

4. **If the Forest Project is located on public land, a description and copies of the documentation demonstrating explicit approval of the offset project's management activities and baseline including any public vetting processes necessary to evaluate management and policy decisions concerning the offset project.**

This project does not occur on public lands, so therefore this section is not applicable.

5. **If the Forest Project is located on the following categories of land, a description and copies of documentation demonstrating that the land within the Project Area is owned by a tribe or private entities:**

This project does not occur on tribal lands, so therefore this section is not applicable.

6. **If commercial harvesting is either planned or ongoing within the Project Area, a description of how the Forest Owner satisfies one of the three requirements for employing and demonstrating sustainable long-term harvesting practices on all of its forest landholdings (refer to Section 3.8.1).**

☐ **Not applicable; no commercial harvesting is occurring within the Project Area.**

☒ **Third party certification under the Forest Stewardship Council, Sustainable Forestry Initiative, or Tree Farm System, whose certification standards require adherence to and verification of harvest levels which can be permanently sustained over time.**

☐ Adherence to a renewable long-term management plan that demonstrates harvest levels which can be permanently sustained over time and that is sanctioned and monitored by a state or federal agency.

☐ Employ uneven-aged silvicultural practices and maintain canopy retention averaging at least 40% across the forest, as measured on any 20 acres within the entire forestland owned by the Forest Owner, including land within and outside of the Project Area (areas impacted by Significant Disturbance may be excluded from this test).

7. A description of how the offset project meets (or will meet) the definition of “Natural Forest Management” (refer to Section 3.8.2), including:

a. Composition of native species;

The project area naturally consists of a mixed species distribution where no single species’ prevalence (as shown in Part V. Section 8.a. in this listing document), measured as the percent of basal area of all live trees in the Project Area, exceeds the percentage value of standing live carbon shown under the heading ‘Species Diversity Index’ in the Assessment Area Data File.

Supersection	Assessment Area	Threshold
Lower New England - Northern Appalachia	Lower New England - Northern Appalachia Mixed Hardwood	65%
	Lower New England - Northern Appalachia Northern Conifer	60%
	Lower New England - Northern Appalachia Northern Hardwood	60%

b. Distribution of age classes / sustainable management;

Across the project area, no more than 3% of the project’s forestlands are currently maintained in age classes less than 20 years old.

c. Structural elements (standing and lying dead wood);

Live C	Dead C	% Standing Dead
165.75	9.95	7%

Currently, the quantity of lying dead wood is commensurate with recruitment from standing dead trees as the project maintains an average of at least one metric ton of carbon (C) per acre.

8. All listing information that reference carbon stocks must be submitted with the oversight of a Professional Forester.

Name of Forester: Russell Russ

State of Certification: Connecticut

Qualification: Certified Forester

## Part VII. Carbon Stock Inventory

### IFM-1 Standing Live

All live trees will be recorded for species, DBH (to nearest 0.1 inch), % missing/rotten wood (using procedure outlined below), and decay class (using the Domke et al. 2011 classification system). If a tree will be snapped, the height as the tree originally stood, as well as the height in the tree's current condition (in feet), will be recorded.

Total height will be measured to the nearest foot for all trees sampled on every plot. Total heights will be recorded for each tree; however, in the instances where heights could not be recorded due to landscape limitations, the missing heights will be regressed by species using all measured total heights.

Missing and cull deductions will be calculated by dividing each damaged tree into thirds (considering the height of the tree as it originally stood, based on the height of similar nearby trees) and estimating the percentage that will be missing or rotten in each third. This percentage figure will be then multiplied by the approximate percentage of tree biomass found in each third of a typical tree (65% in the bottom third, 25% is in the middle third, and 10% is in the top third according to CAR's FPP 3.3 Quantification Guidance document) to get the total deduction percentage.

Additional detail on the measurement of standing live can be found in the Inventory Methodology below.

Biomass will be computed using the component ratio method and Jenkins coefficients following the procedures and equations outlined in "The Forest Inventory and Analysis Database: Database Description and User's Manual Version 4.0 for Phase 2," and as specifically described in Appendix J Tables 1 through 4.

Gross cubic foot volume and sound cubic foot volume will be calculated using equations outlined in Woodall et al. 2011, "Methods and Equations for Estimating Aboveground Volume, Biomass, and Carbon for Trees in the U.S. Forest Inventory, 2010".

The belowground portion of live and dead trees is calculated using the component ratio method ("CRM") described in Appendix J of the FIA documentation cited in the Protocol.

	Weighted Average tCO <sub>2</sub> e/acre	Total tCO <sub>2</sub> e
Start Date Estimate	<b>136.88</b>	<b>832,794.33</b>

Projected Growth: The Northeast (NE) variant of the Forest Vegetation Simulator (Keyser 2010) will be used to model forest growth, mortality and harvest over 100 years. Plot data will be entered into a database readable by FVS, with each plot entered as an individual stand and each tree record multiplied by the appropriate factor to determine trees per acre. After entry into FVS, the "forest" will be grown 100 years and the resulting tree list used to calculate biomass.

In cases where species are not included in biomass equations required by ARB, substitutions will be made based on Forest Inventory and Analysis (FIA) guidance provided by ARB.

Site index will be determined cores collected during the inventory.

Adjustments for Start Dates: To determine CO<sub>2</sub> stocks at the project commencement date, the tree data will be degrown from the date of inventory to the project's start date of 3/10/17. This adjustment will take place by growing individual trees backwards at the appropriate seasonal rate based on FVS predicted diameter growth rates for each tree. Each sapling and tree will be grown from the inventory date for 10 years to calculate the annual reduction in tree per acre (TPA) for each tree. This method for determining individual tree mortality will be done separately for trees and saplings. The default mortality settings for the NE Variant of FVS will be used for all of the baseline modeling.



Adjustments for Reporting Period Calculations: To determine CO2 stocks at the end of the reporting period, all trees will be grown forward to the reporting period end date set at the appropriate seasonal rate based on FVS predicted diameter growth rates for each tree (the same method used for the start date calculations). In addition, the mortality that occurred between the inventory and the reporting period will be simulated by decreasing or increasing the trees per acre for each tree record at the appropriate rate based on the FVS predicted mortality rate for each tree. All plots harvested during the reporting period will be re-inventoried so that all harvested trees will be removed from the inventory for the reporting period calculations.

### IFM-3 Standing Dead

All standing dead trees of  $\geq 5''$  DBH and  $\geq 15'$  of height will be recorded for species (if possible), height as the tree originally stood, height in the tree's current condition (in feet), DBH (to nearest 0.1 inch), % missing/rotten wood (using procedure outlined above), and decay class (using the Domke et al. 2011 classification system).

Standing dead wood carbon will be calculated by estimating above and below ground biomass in the same manner it will be for live trees and then converting this figure to CO<sub>2</sub>e. Domke et al. 2011 will be used to apply Structural Loss Adjustments and Density Reduction Factors for standing dead trees.

The estimates of standing dead wood will be calculated on a per acre basis for each stratum. A project-wide estimate of standing dead wood is calculated using a weighted average with weights assigned based on stratum size.

Estimates of standing dead will be updated in the project scenario every time new inventory data is collected. For the baseline, standing dead is projected to remain constant over the 100 year baseline at 9.95 tonnes CO<sub>2</sub> per acre.

	Weighted Average tCO <sub>2</sub> e/acre	Total tCO <sub>2</sub> e
Start Date Estimate	9.95	60,549.09

### IFM-6 Soil (if applicable)

Excluded.

### IFM-7 Carbon in in-use forest products

Carbon in in-use forest products will be calculated based on standing tree inventory data. No specific inventory processes apply.

Wood products calculations will be completed using an excel model based on the ACR Forest Project Calculation worksheet. (Provided separately for verification purposes.)

A default regional value will be used for mill efficiency and product mix based on weighted average of relative acreage.

### End of Reporting Period Estimate

Baseline Harvested Wood Products Summary	Total (tCO <sub>2</sub> e)	tCO <sub>2</sub> e / acre
Total Harvested Wood Products	2,592.51	0.43
Long-term storage in in-use wood products	343.51	0.01

### IFM-8 Forest product carbon in landfills

Forest product carbon in landfills will be calculated based on standing tree inventory data. No specific inventory processes apply. Forest product carbon in landfills will be calculated in accordance with the procedures described per Appendix C of the Forest Protocol.

## End of Reporting Period Estimate

Baseline Harvested Wood Products Summary	Total (tCO <sub>2</sub> e)	tCO <sub>2</sub> e / acre
Long-term storage in wood products in landfills	274.81	0.01

IFM- 9 Biological emissions from site preparation

NA

IFM-14 Biological emissions/removals from change in harvesting on forestland outside the Project Area

NA

IFM-17 Biological emissions from decomposition of forest products

Biological emissions from decomposition of forest products will be calculated based on standing tree inventory data. No specific inventory processes apply. Biological emissions from decomposition of forest products will be quantified as a component of carbon stored in in-use forest products (IFM-7) and landfills (IFM-8).

## Inventory Methodology

For all applicable carbon pools, the following inventory methodology will be employed:

Project Boundary: The offset Project Area will be determined using the most recent geospatial file of the of the property. All roads, right-of-ways, major water bodies, and other non-forested areas will be removed from the Project Area. Some forested areas may be removed due to management considerations.

Stratification: The Project will be stratified into three distinct strata. The stratification is be based on the most recent stands geospatial file and inventory in order to reduce the sampling error below 5.1%.

Plot Number and Locations: A network of randomly selected permanent inventory plots will be be installed across the project area. Using the Random Point Generator tool in ArcGIS, plots will be selected across the entire project area, placed the plots at least 74.4 feet apart, ensuring no overlapping plot boundaries.

Monumentation: Permanent inventory plot centers will be monumented with a rebar pole pounded into the ground and topped with a small rebar cap flush with the ground.

Sampling Method: Permanent, fixed-radius plots will be established across the Great Mountain Forest, LLC property to facilitate precise tracking of individual tree growth and ease of verification. At each plot location, a 1/10th-acre (37.2' radius) fixed-radius plot will be established to measure all trees greater than or equal to 5.0" in diameter at breast height (DBH); and a 1/100th-acre (11.8' radius) sub-plot will be taken to capture woody trees and saplings less than 5" (1.0 to 4.9" DBH). This plot design gave forest managers the opportunity to consistently track the growth and development of specific trees over an extended timeline and will allow for improved ease of plot location during field work and site verifications.

The protocol defines trees as "A woody perennial plant, typically large and with a well-defined stem or stems carrying a more or less definite crown with the capacity to attain a minimum diameter at breast height of 5 inches and a minimum height of 15 feet with no branches within 3 feet from the ground at maturity." As a result, please measure all species  $\geq 1$ " DBH that meet this definition (a master list of FIA species coeds for trees found on the property can be found on the final page of this document).

Statistical Standard: Mean volume estimates (e.g. above ground carbon per acre) for the ownership will be reported with a minimum statistical precision of  $\pm 5\%$  of the mean at the 95% confidence level. These objectives may be adjusted for more or less precision based on a property-specific analysis of data collection cost relative to return.

Sampling Frequency: Full project-level inventories of the carbon project will be conducted at 6-12 year intervals. Inventories of select portions of the Project Area will be updated periodically in response to natural disturbance or

significant forest management activities. Traditional pre-and post-harvest monitoring techniques will be employed to inform land managers of potential needs to implement a more comprehensive monitoring of carbon pools (refer to Pearson, Brown, Birdsey 2007).

**Harvest Re-Measurement:** If a plot is harvested, the plot will be re-measured within 6 months of yarding to assess which trees will be taken out so that the inventory can be updated for the current reporting period. Blue Source will work with Great Mountain Forest to determine which plots have been harvested during the reporting period.

**Data Collection Materials:** Data will be collected on hand held electronic data recorders. If data recorders are not available, field data can be collected on paper tally sheets and manually entered into a computer for data analysis. All data sheets will be scanned and sent to Blue Source.

**QA/QC Field Procedures:** At least 5% of the plots will be checked by a different forester than cruised the plot, preferably by someone senior to the field crew. This will involve full plot measurement to identify any problems with determining in/out trees, species calls, defect measurements, DBH measurements, and height measurements. Any consistent height, species, DBH, or defect errors will be resolved by talking with the foresters.

**QA/QC Desk Procedures:** The following QA/QC approach is designed to ensure that field data, once input, is appropriately managed and maintained, and that subsequent calculations using that data to determine onsite carbon stocks and associated ARBOC issuance are correctly implemented. A three-stage QA/QC process with a defined review group for the project will be established, engaging both personnel intimately familiar with all project files and documentation, as well as independent reviewers are able to bring “fresh eyes” to key outputs.

**Independent Forester Review:** The project implementation team (Blue Source) has a team of foresters with intimate knowledge of the files, models and documents. The development of quantitative components, such as Access databases, FVS model runs and Excel workbooks, are led by one of these foresters. Prior to finalization, a second forester who did not lead development of that component is tasked with a QA/QC review including random examinations and data checks to identify and fix any errors.

**Technical Review:** Once quantitative outputs are finalized, exported from Access/FVS to Excel, and are ready to be transferred into the Offset Project Data Report (OPDR) and other project documents, an independent manager reviewed these outputs. This individual performs data checks by tracing key outputs back from final ARBOC calculations through the chain of Excel documents to the underlying Access/FVS database.

**Senior Management Review:** Once outputs have been transferred from Excel to the OPDR and other project documents, a senior manager reviews these documents and checks that all quantitative elements have been correctly exported from the underlying workbook. At this stage, the senior manager (or other individual not involved in document preparation) also reviews text, grammar and formatting for presentation and accuracy.

**Data Processing and Storage:** Manually and electronically filed data are stored and archived. Backup copies of all electronically stored data -are maintained in a separate data center with scheduled archiving to assure data protection. Future revisions to project documents after initial verification and registration will be clearly identified by saving them as separate files and including the date of revision in any modified documents. All data will be stored on Dropbox or similar online cloud storage service as well as on an external hard drive and kept by Blue Source for a minimum of 15 years.

#### Inventory Confidence Statistics- Estimate

Total	n	Stratified Standard Error	Bound	Sampling Error
1,068,857	250	32,000	52,640	4.9%

The inventory sampling error is calculated as follows:

- 1)  $32,000 * 1.645 = 52,640$
- 2)  $(52,640/1,068,857) * 100 = 4.9$

The calculated sampling error of % is below 5.1%, so no confidence deduction is applied to the inventory results.

#### Reversal Risk Rating- Estimate

Reversal Risk Rating will be calculated using the following formula:

Reversal Risk=  $100\% - (1-\text{Financial Failure}) \times (1-\text{Illegal Forest Biomass Removal}) \times (1-\text{Conversion}) \times (1-\text{Over Harvesting}) \times (1-\text{Social Risk}) \times (1-\text{Wildfire}) \times (1-\text{Disease/Insect Outbreak}) \times (1-\text{Other Catastrophic Events})$

$$= 1 - (1-0.05) * (1-0.0) * (1-0.02) * (1-0.02) * (1-0.02) * (1-(.04*0.5)) * (1-0.03) * (1-0.03)$$

=17.6%

## Part VIII. Offset Project Baseline

1. The aboveground Common Practice (CP) value is 101.14 mtCO<sub>2</sub>e/acre with a live value of 122.5 mtCO<sub>2</sub>e/acre. The project's ICS live carbon stocks of 165.73 mtCO<sub>2</sub>e/acre is above the CP value.

Supersection	Assessment Area	Site Class	CP	Acres
Lower New England - Northern Appalachia	Lower New England - Northern Appalachia Mixed Hardwood	Low	98.93	1,725.52
	Lower New England - Northern Appalachia Northern Conifer	Low	101.10	2,095.96
	Lower New England - Northern Appalachia Northern Hardwood	Low	102.87	2,262.70
Weighted Average/ Total			101.14	6,084.17

2. Baseline Carbon Stocks

Aboveground (mtCO <sub>2</sub> e/acre)	Belowground (mtCO <sub>2</sub> e/acre)	Live (mtCO <sub>2</sub> e/acre)	Dead (mtCO <sub>2</sub> e/acre)	Standing (mtCO <sub>2</sub> e/acre)
101.1	21.3	122.5	9.95	132.4

3. Minimum Baseline Level for above-ground standing live tree carbon stocks (MBL)

The LMU is the same as the Project Area, thus the WCS is equal to the ICS. Because the ICS is above the CP, we use the equation  $MBL = \text{MAX}(\text{CP}, \text{MIN}(\text{ICS}, \text{CP} + \text{ICS} - \text{WCS}))$  for calculating the MBL. In this case, the MBL is the ICS (initial above-ground standing live tree carbon stock per acre within the project area), or 136.88 (MTCO<sub>2</sub>e/acre).

4. If the Forest Project's initial standing live carbon stocks are below Common Practice, a determination of the "High Stocking Reference" for the Project Area.

Because the project's initial standing live carbon stocks are above common practice, this section is non-applicable.

## 5. Estimated Baseline Wood Products

Baseline Harvested Wood Products Summary	Total (tCO <sub>2</sub> e)	tCO <sub>2</sub> e / acre
Baseline Carbon Harvested for Wood Products (tonnes CO <sub>2</sub> e)	22,937.48	0.56
Baseline Carbon Delivered to Mill (tonnes CO <sub>2</sub> e)	12,156.86	0.30
Baseline Carbon Stored in Wood Products – Excl. Landfill (tonnes CO <sub>2</sub> e)	3,039.22	0.07
Baseline Carbon Stored in Wood Products – Incl. Landfill (tonnes CO <sub>2</sub> e)	5,470.59	0.13

## 6. Baseline Modeling

As stated in section 6.2.1.2 of the protocol, all legal constraints that could affect the baseline growth and harvesting must be incorporated. Thus, all legal constraints (detailed in Attachment I) will be modeled into the baseline. Site index for each plot will be measured as outlined in Part VII IFM-1. FVS will be calibrated as described in Part VII IFM-1.

All FVS (NE variant) defaults for the will be used besides the following calibration components:

- The location code
- Age of the stands
- Site index values derived from a site index tree at each plot
- Minimum acceptable harvest volume of 3000 cubic feet per acre
- Minimum DBH for all harvests is 10" for sawtimber trees
- Trees less than 10" DBH will be harvested for pre-commercial thins and during the clearcuts

## Part IX. Attestations and OPO Signature

I certify under penalty of perjury under the laws of the State of California the GHG reductions and/or GHG removal enhancements for Blue Source - Great Mountain Forest Improved Forest Management Project from 3/10/2017 to 3/09/2042 will be measured in accordance with the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015,, and all information required to be submitted to ARB is true, accurate, and complete.

Initial: RW

I understand I am voluntarily participating in the California Greenhouse Gas Cap-and-Trade Program under title 17, article 5, and by doing so, I am now subject to all regulatory requirements and enforcement mechanisms of this program and subject myself to the jurisdiction of California as the exclusive venue to resolve any and all disputes arising from the enforcement provisions in this article.

Initial: RW

I understand that the offset project activity and implementation of the offset project must be in accordance with all applicable local, regional, and national environmental and health and safety laws and regulation that apply to the offset project location. I understand that offset projects are not eligible to receive ARB or registry offset credits for GHG reductions and GHG removal enhancements that are not in compliance with the requirements of the cap-and-trade program.

Initial: RW

In signing this form, I certify under penalty of perjury of the laws of California that the information contained in this form is true, accurate, and complete. I further certify that I am an Account Representative of the Offset Project Operator (OPO).

Signature: 

Printed Name: Roger Williams

Title: President, Blue Source LLC

Date: 3/10/2017

## Part X. Attachments

### Attachment A: Forest Owner

Please see corresponding folder containing all deed, provided separately for verification purposes.

### Attachment B: Public Projects

N/A

### Attachment C: Qualified Conservation Easement

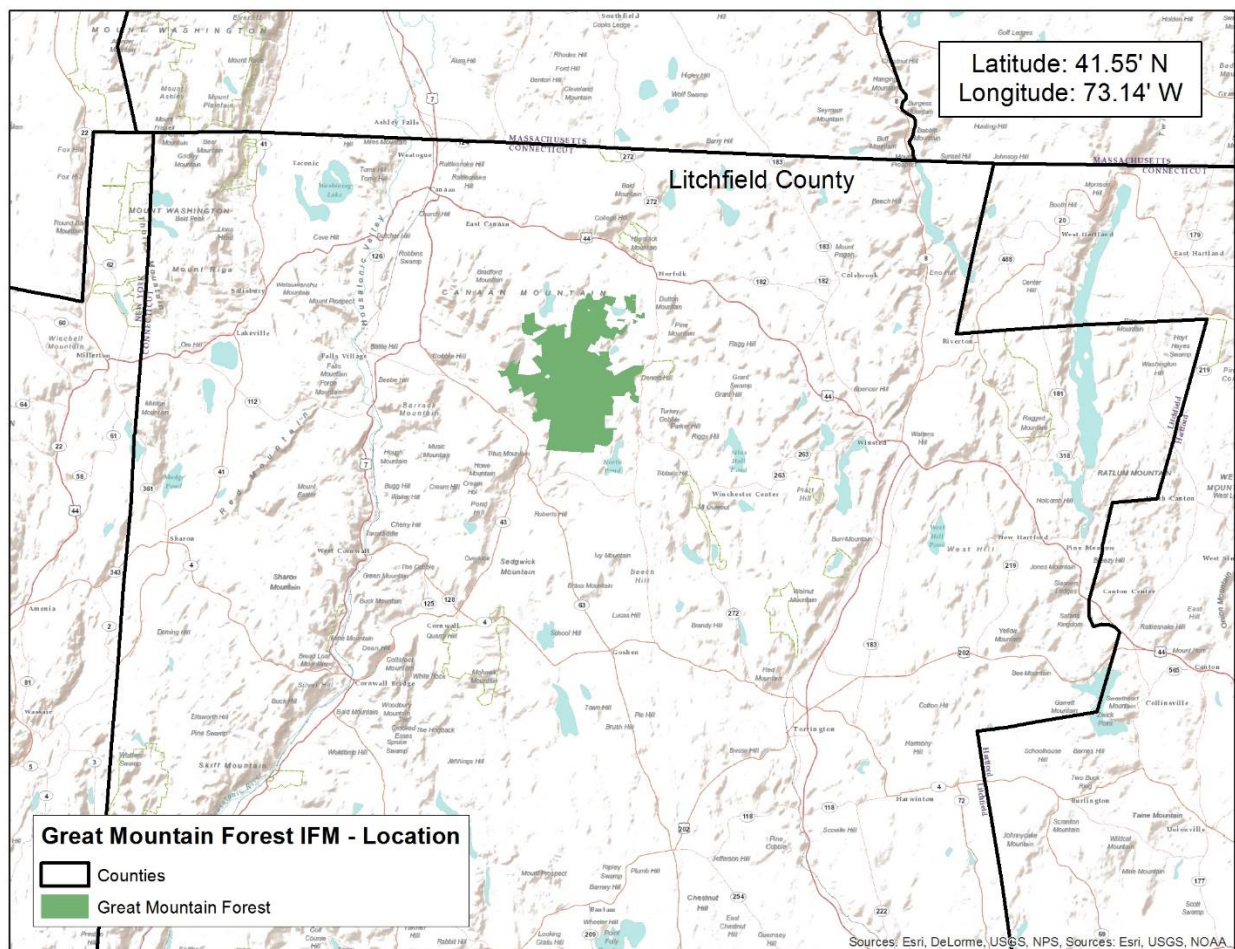
N/A

### Attachment D: Tribal Projects

N/A

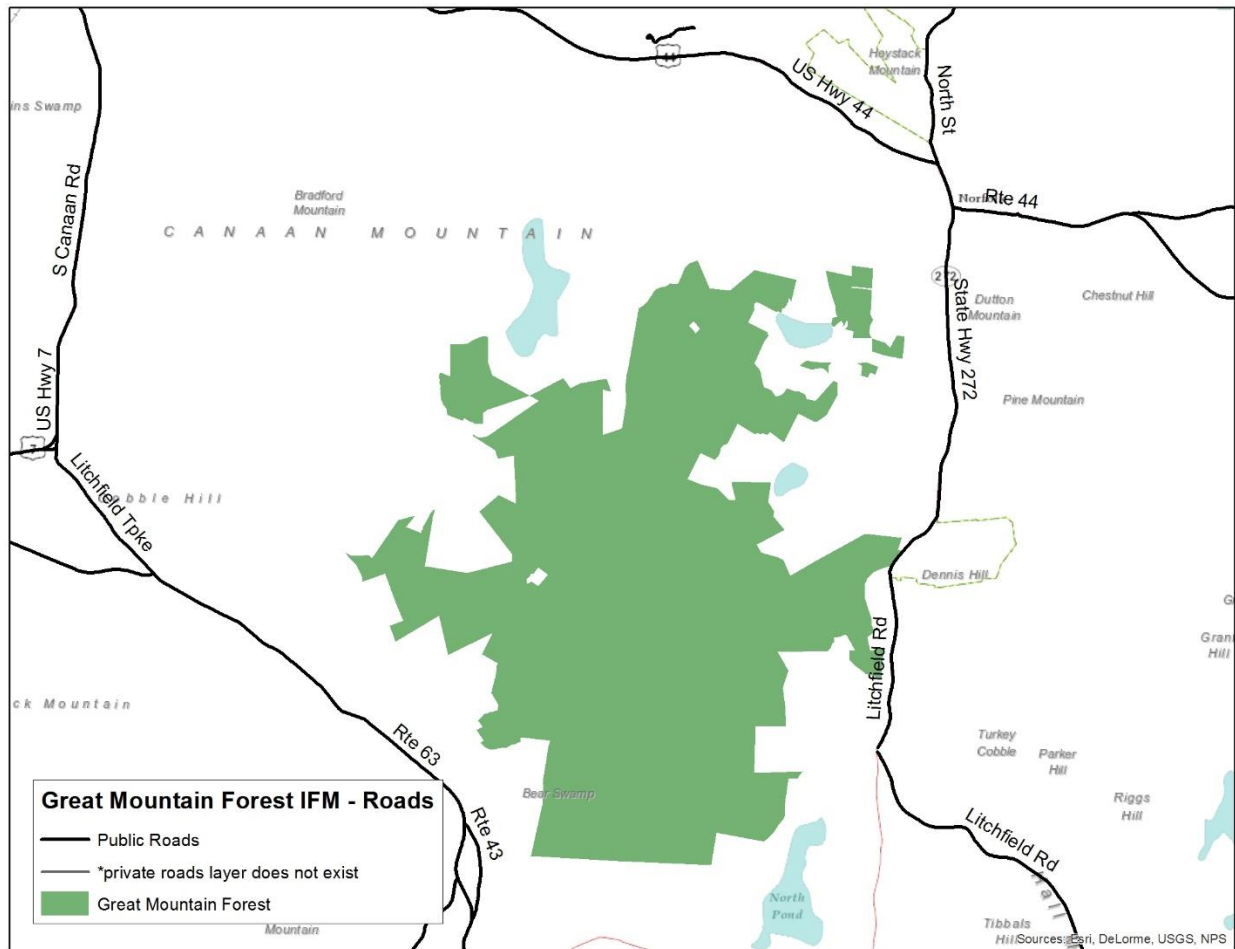
### Attachment E: Project Maps

#### 1. Governing jurisdictions, and latitude/longitude coordinates



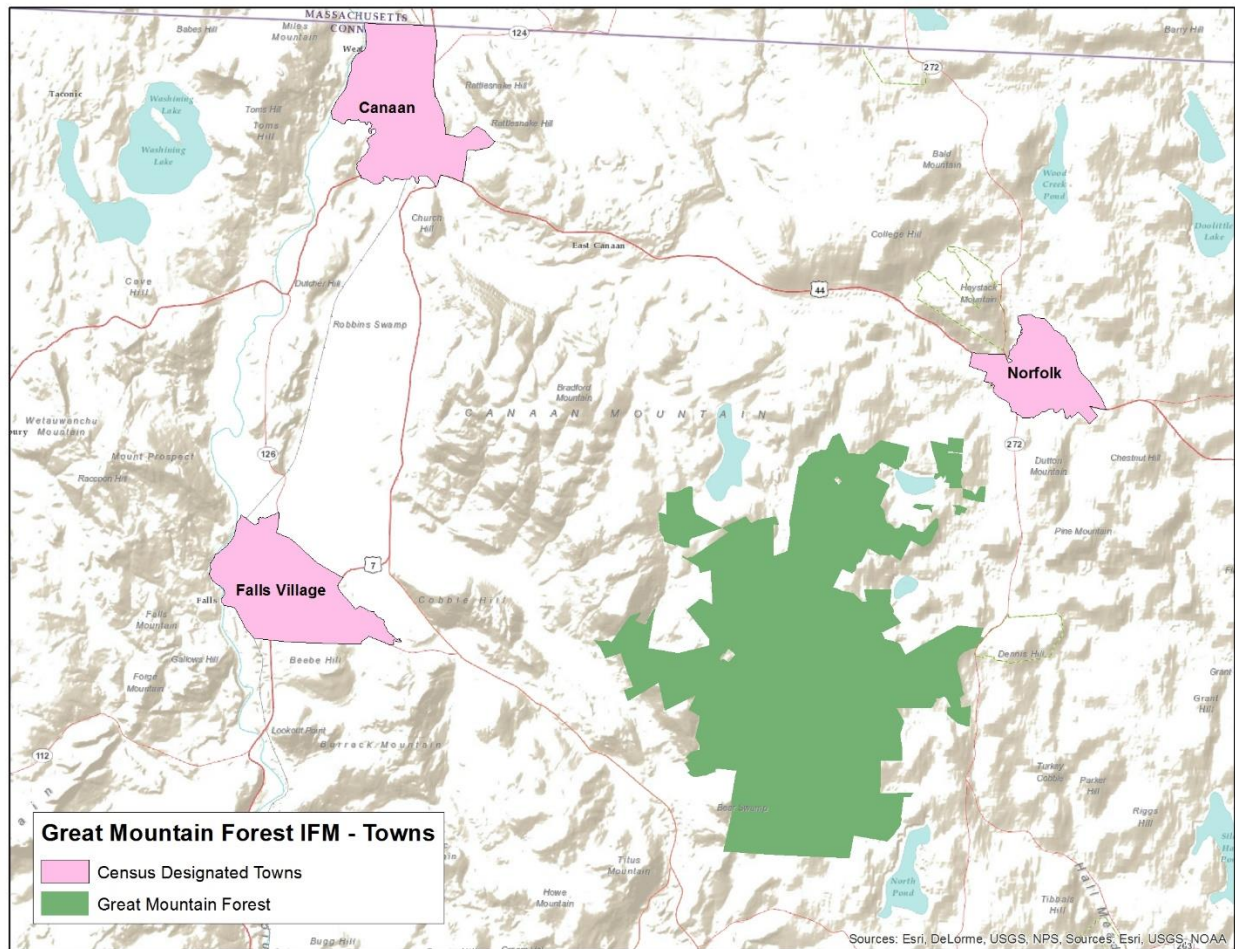


## 2. Public and private roads (map)

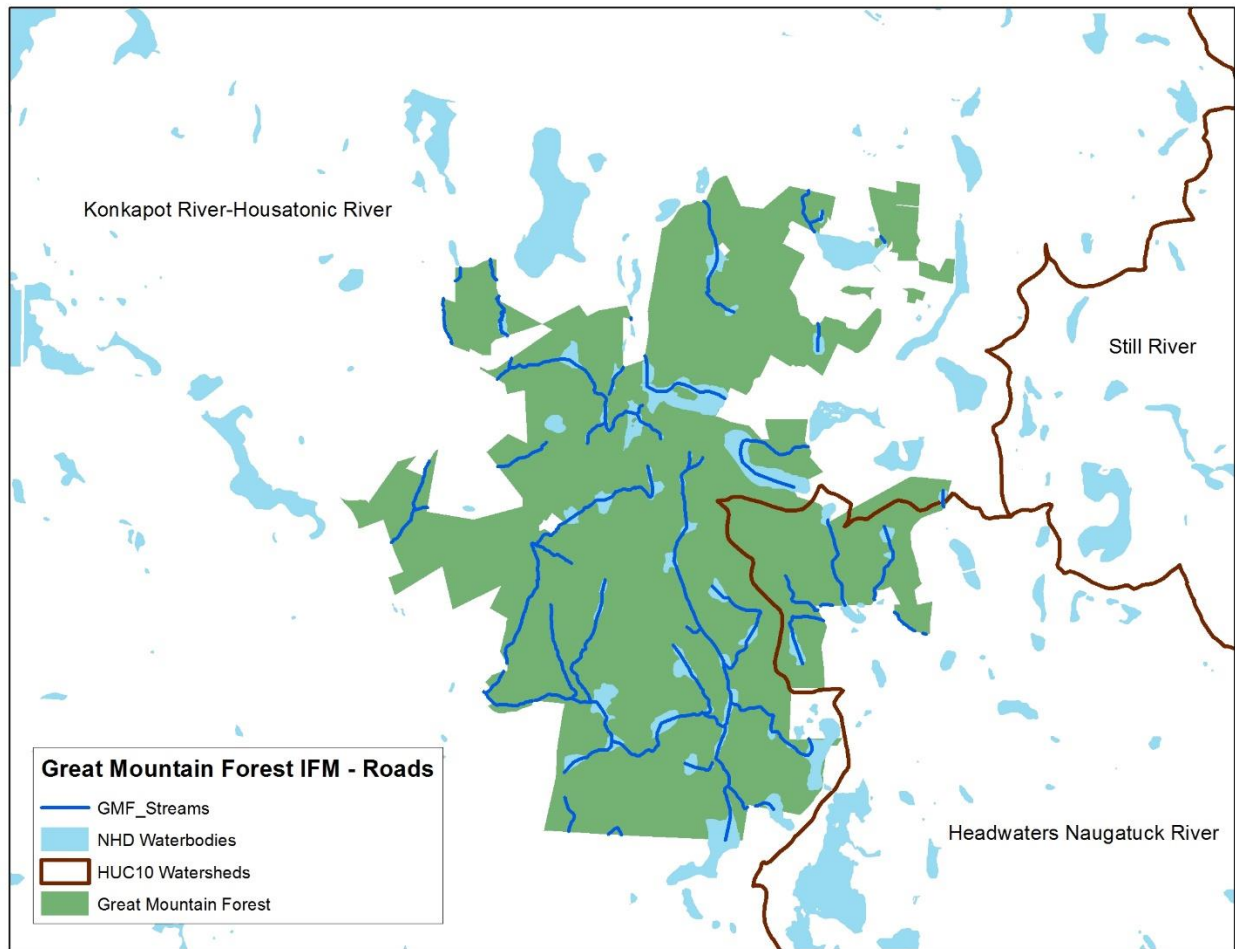




### 3. Towns (map)

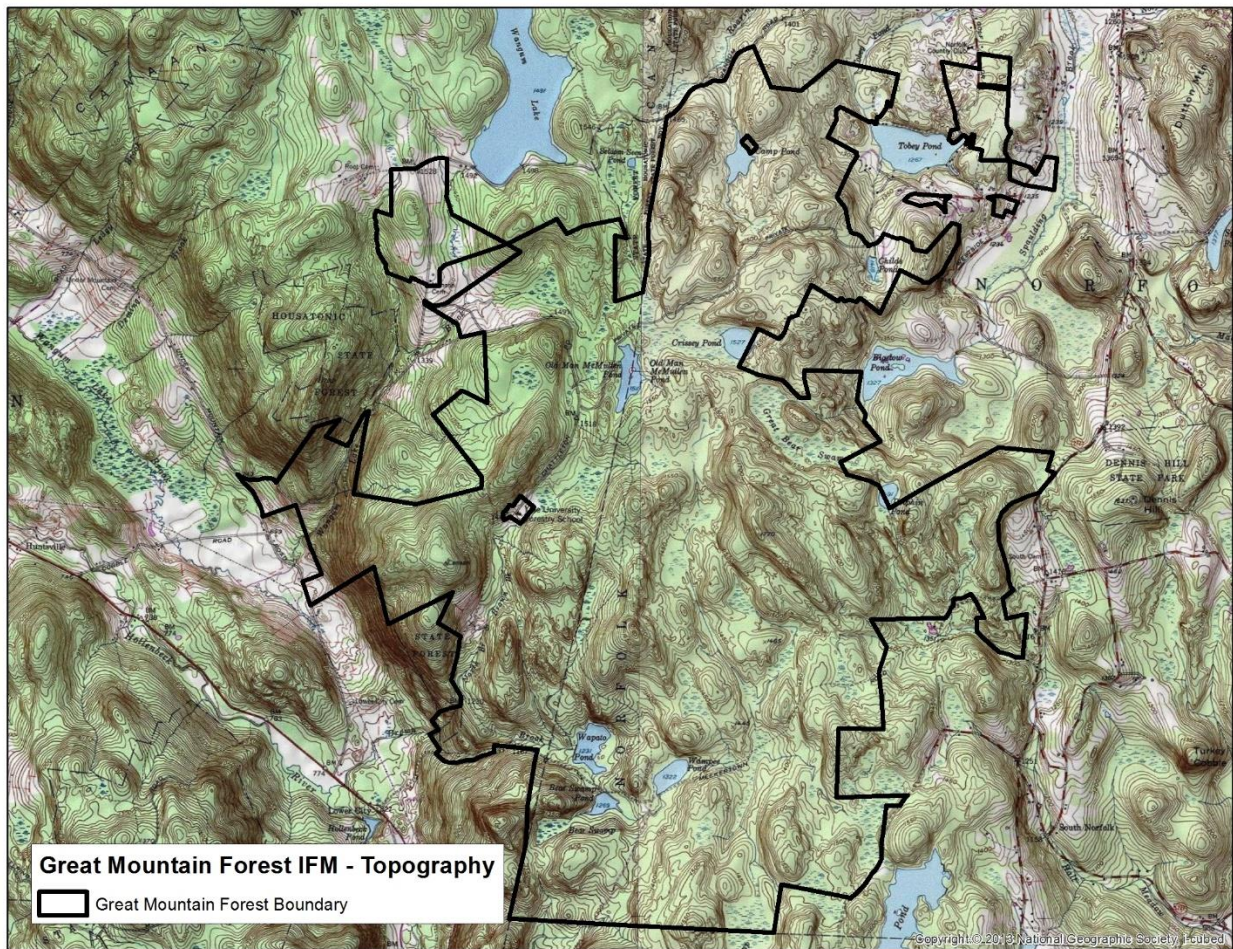


4. Major watercourses (4th order or greater), water bodies, and watershed description (map)





5. Topography (map)



6. Townships, ranges, and sections (map)

The State of Connecticut is not part of the USGS Public Land Survey System. Location information is provided in map 1.

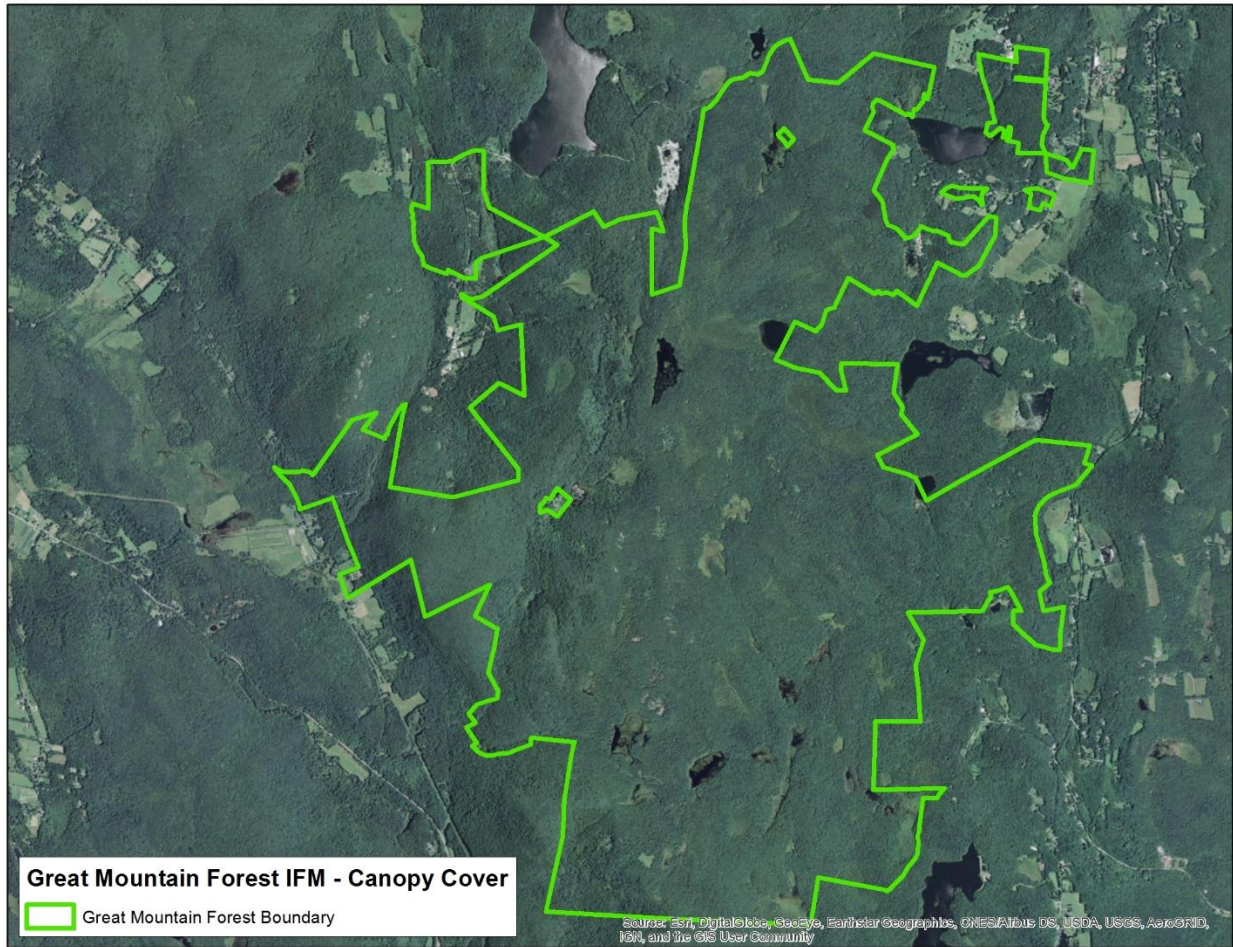
7. Georeferenced shape file

Please see provided georeferenced shapefile.

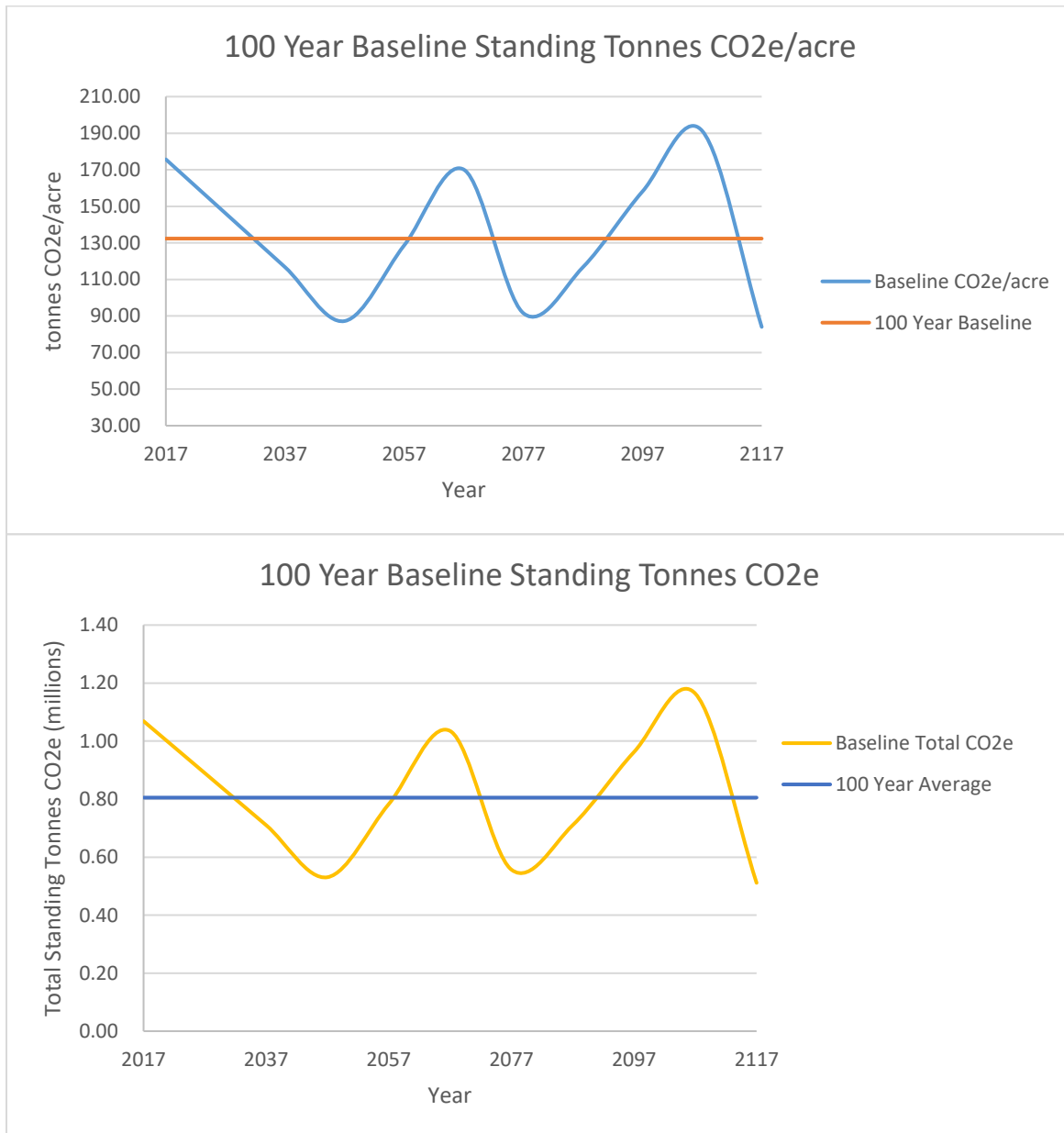
Attachment F: Canopy Cover

As evidence by recent aerial imagery, the Project Area contains greater than 10% canopy cover.



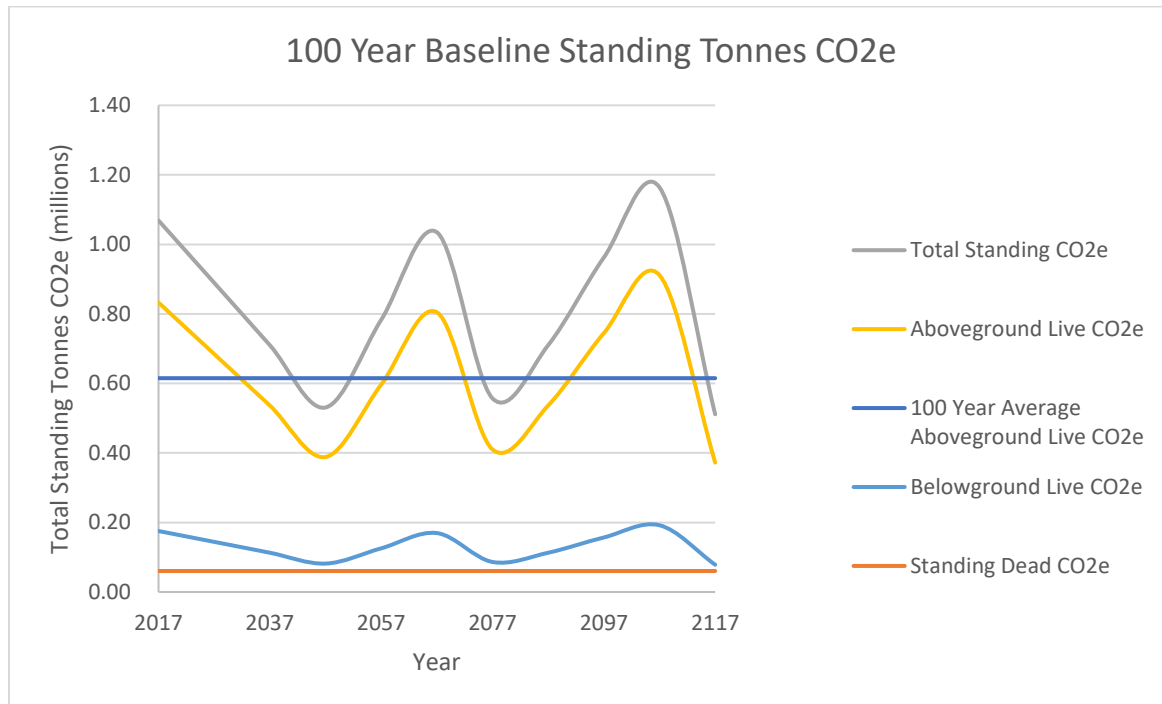


Attachment G: 100-year Baseline



\*Diagrams are an estimate of baseline and will be revised upon completion of final verified baseline model.

## Attachment H: Baseline Onsite Carbon Stocks



\*Diagram is an estimate of baseline and will be revised upon completion of final verified baseline model.

## Attachment I: Legal Constraints

In Connecticut, Forestry Best Management Practices (BMPs) for timber operations as set forth by "Best Management Practices for Water Quality While Harvesting Forest Products" (CT DEEP 2007) are required through the Forest Practices Act (CGS Title 23, Chapter 451a 23-65f through 23-65q) for any property where "wood products harvested from a tract of forest land [are] in excess of fifty cords or one hundred fifty tons or twenty-five thousand board feet, whichever measure is appropriate, in any twelve-month period." If these conditions are met, the landowner must utilize certified forest practitioners who are required to follow state forest practice regulations; however, these regulations do not restrict silvicultural treatments or impose harvest limits.

Additionally, because the conservation easement on the project area was recorded more than one year prior to the commencement date (recorded 12/9/2003), all constraints as listed in the conservation easement on the property will be modeled into the baseline, which states that the property cannot clear cut above 15 acres in size and within a 10-year period no more than 10% of easement area may be clear cut.

The project will model easement restrictions by constraining harvested acres in FVS.

## Attachment J: Financial Feasibility

A financial analysis (Forest Protocol section 6.2.1.3, option 1) of the baseline growth and harvest regime reveals that the activities represented in baseline scenario are clearly feasible. Refer to attachment for details on financial analysis.