DISCLAIMER: ARB has developed this Application for Listing an Improved Forest Management U.S. Forest Offset Project form specific to forest projects using ARB's Compliance Offset Protocol U.S. Forest Projects, June 25, 2015. This form is intended to help Offset Project Operators and Authorized Project Designees meet the listing the requirements in the Compliance Offset Protocol.

The Cap-and-Trade Regulation (Regulation), which appears at sections 95801 to 96022 of Title 17, California Code of Regulations, and the offset protocols incorporated therein, are a set of rules that establish the compliance offset program and the methods for quantifying GHG emission reductions and enhanced sequestration. ARB staff has prepared this document to facilitate meeting a regulatory requirement in a user-friendly format. **Unlike the Regulation and protocols, this form does not have the force of law.** It is not intended to and cannot establish new mandatory requirements beyond those that are already in the Regulation, and it does not supplant, replace, or amend any of the legal requirements of the Regulation or protocols. Conversely, this form's omission or truncation of regulatory requirements does not relieve operators of their legal obligation to fully comply with all requirements of the Regulation and the protocols.

This form is based on the June 25, 2015, version of the Compliance Offset Protocol U.S. Forest Projects and the Cap-and-Trade Regulation as amended effective November 1, 2015. ARB makes every effort to keep its documents up to date; however conformance to Protocol and Cap-and-Trade Regulation requirements are the responsibility of the Offset Project Operator, Authorized Project Designee, and Verification Body as applicable.

Submit the information in this form to the appropriate Offset Project Registry

APPLICATION FOR LISTING AN IMPROVED FOREST MANAGEMENT U.S. FOREST OFFSET PROJECT

OPR Staff Use Only	**Date Application Received:**	**OPR Tracking Number:**	**Date Application Reviewed:**	*OPR Staff Use Only*

PART I. ENTITY APPLYING FOR LISTING

Is this form being submitted by the Offset Project Operator (OPO) or by the Authorized Project Designee (APD)?

Notes:
1. The person completing this form should be an OPO/APD employee.
2. If the APD is submitting this form, the OPO should submit the form *Designation of Authorized Project Designee* simultaneously.

☒ **OPO**
☐ **APD**

Name of Person Completing Form:	**Organization, if applicable:**		
Edward C. Murphy	Sierra Pacific Industries		
Date Form Completed:	**Phone Number:**	**Email Address:**	
10/24/2019	(530)-378-8131	emurphy@spi-ind.com	
Mailing Address:	**City:**	**State:**	**Zip:**
PO Box 496014	Redding	CA	96049
Physical Address: (check if same as mailing ☐)	**City:**	**State:**	**Zip:**
19794 Riverside Ave	Anderson	CA	96007

PART II. OFFSET PROJECT INFORMATION

Offset Project Name:
Mosquito 2019

Offset Project Commencement Date:	**First Reporting Period Start Date:**	**First Reporting Period End Date:**
10/25/2019	10/25/2019	04/24/2020

Provide an explanation and justification for the commencement date. Specify the action(s) that identify the offset project commencement date:	**Provide the physical address of the project site (if available):**
Justification of commencement date is the verifiable action based on SPI management decision to commit to an ARB compliant carbon project for a period of over 100 years and submit the offset project listing information for this forest project per section 3.6(a)(2)(A) in the ARB US Forest Protocol dated 6/25/2015.	N/A

PART III. OPO/APD/TECHNICAL CONSULTANT INFORMATION

A. OPO

OPO Name:			**OPO's CITSS ID#:**
Sierra Pacific Industries			CA 1 5 5 5
Mailing Address:	**City:**	**State:**	**Zip:**
PO Box 496014	Redding	CA	96049-6014
Physical Address: (check if same as mailing ☐):	**City:**	**State:**	**Zip:**
19794 Riverside Ave	Anderson	CA	96007
Contact Person:	**Phone Number:**	**Email Address:**	
Edward C. Murphy	(530)-378-8131	emurphy@spi-ind.com	

B. APD (if applicable)

☒ **No APD/Not Applicable**

APD Name:	**APD's CITSS ID#:**
	CA _ _ _ _

Submit the information in this form to the appropriate Offset Project Registry

Mailing Address:	City:	State:	Zip:
Physical Address: (check if same as mailing ☐):	City:	State:	Zip:

Contact Person:	Phone Number:	Email Address:

Part III.C Technical Consultant (if applicable) ☐ **No Technical Consultant /Not Applicable**

Technical Consultant Name: Alpine Land Information Services		Technical Consultant's CITSS ID# (if applicable): CA _ _ _ _	
Mailing Address: 4451 Caterpillar Rd STE 6	City: Redding	State: CA	Zip: 96003
Physical Address: (check if same as mailing ☒):	City:	State:	Zip:
Contact Person: Russ Bryant	Phone Number: 336-324-7213	Email Address: rbryant@alpine-lis.com	

PART IV. LAND OWNERSHIP

A. Is the Offset Project Operator (OPO) the owner in fee for the Project Area?
Further documentation is required for all projects. Submit as attachment labeled "Attachment A." See Part X of this listing document for more information.
If "no," explain how the entity identified as the OPO has the right to undertake and list the project.

☒ **Yes**
☐ **No**

B. List all Forest Owners. This includes owners in fee as well as third parties with existing property interests within the Project Area that affect the trees and standing timber located in the Project Area (e.g. mineral rights, timber rights, easements, rights of way, leases, etc.).
SPI is the fee owner of all lands included in the Forest Project.

C. Describe the forestland and resource ownership for the real property in the project area:
The forestland is commercial timberland with resource ownership belonging solely to SPI.

D. List the name and mailing address of other parties with a material interest in the real property involved in the forest project:
N/A

E. Does the offset project occur on public or private lands?
If the project occurs on public lands, proceed to questions E1 and E2. Otherwise, skip to question F.
Further documentation is required if project occurs on public lands. Submit as attachment labeled "Attachment B." See Part X of this listing document for more information.

☒ **Private**
☐ **Public**

1. **Describe the public process that has been used to approve forest management activities and baseline.**

2. **Describe the documentation being submitted with this listing document demonstrating approval of planned forest management activities and baseline.**

F. Will the project employ a Qualified Conservation Easement (QCE)?
If employing a QCE, proceed to questions F1, F2, and F3. Otherwise, skip to question G.
Supporting documentation for a QCE is required. Submit as attachment labeled "Attachment C." See Part X of this listing document for more information.

☐ **QCE**
☐ **Public Ownership**

1. **Date that the QCE was or will be recorded.**
N/A

2. **Will the project take place in a state that requires third-party beneficiaries to sign the easement (i.e., to "accept and record that acceptance"), such as Arizona, Pennsylvania, or West Virginia?** ☐ **Yes** ☐ **No**

3. **Provide the terms within the easement that affect forest management.**
N/A

G. Does the offset project occur on any of the following categories of land? (check all that apply)

☐ **Land that is owned by, or subject to, an ownership of possessory interest of a Tribe**
☐ **Land that is "Indian lands" of a Tribe as defined by 25 U.S.C. §81(a)(1)**
☐ **Land that is owned by any person, entity, or Tribe, within the external borders of such Indian lands**
☒ **None of the above**

If "none of the above," skip to Part V. Otherwise, proceed to questions G1 and G2.
Further documentation is required for projects occurring on land listed in the first three categories. Submit supporting documents as attachments labeled "Attachment D." See Part X of this listing document for more information.

1. Does a limited waiver of sovereign immunity between ARB and the governing body of the Tribe exist?	☐ **Yes** ☐ **No**

2. Describe how the land within the Project Area is owned.
N/A

PART V. OFFSET PROJECT AREA

Georeferenced GIS shapefiles depicting specific elements of the Project Area are required for all projects. Submit supporting documentation and files as attachments labeled "Attachment E." See Part X of this listing document for more information.

Latitude of Offset Project Location:	Longitude of Offset Project Location:	Project Area Total Acreage:
39.901236	-121.544059	18,191.19

A. Identify the assessment area (or assessment areas, if project crosses more than one) that contain Project Area lands and list the acreage of project lands within each assessment area.
The project area lies within the Sierra Nevada (17,663.33 acres) and Southern Cascades (527.86) assessement areas.

B. Identify the governing jurisdiction(s) applicable to the Project Area.
California Department of Forestry and Fire Protection (CALFIRE) and is in Amador and Calaveras counties.

C. Describe how the Project Area was determined.
SPI included all commercial forest lands, that can meet the permanence requirement protocol, in this logical management unit within the state planning watersheds and road systems that access them. The acreage was determined from SPIs' proprietary GIS.

D. Describe the existing land cover, and land use of the Project Area.
The Forest Project area is forested and the associated land use is managed as commercial forestland.

E. Describe the forest vegetation types within the Project Area boundary.
The forest project is in a mountainous and forested landscape within the Northern Sierra Province of California. Dominant vegetation species include White Fir, Douglas Fir, Incense Cedar, Sugar Pine, and Ponderosa Pine.

F. Describe the site classes within the Project Area boundary.
The projecte area straddles multiple site classes, with the minimum of Site V for regen stratums, but also consisting of Site I & II for mixed stratums.

G. Describe the land pressures and climate zone/classification applicable to the Project Area.
There are no significant development pressures applicable to the Project Area and the land is zoned Timber Production Zone (TPZ) under California law. The Forest Project is a mountainous and forested landscape within the Northern Sierra Province. The climate has mostly dry summers and harsh winters, but seasonal changes are well defined with snow common in the winter and warm temperatures in the summer. Annual precipitation ranges from 40-95 inches annually.

H. Describe the historical land uses, current zoning, and projected land use within the Project Area and surrounding areas.
The historic, current and the reasonably foreseeable future is commercial forest land. In California the project area is zoned Timber Production Zone (TPZ). The Forest Project is surrounded by other private commercial timber lands and forest lands managed by the United States Forest Service.

I. Describe generally the forest conditions within the Project Area, including species composition, age class distribution, and management history.
The project area is composed of Ponderosa Pine (33%), White Fir (6%), Douglas Fir (25%), Incense Cedar (9%), Sugar Pine (15%), California Black Oak (5%), Tanoak (4.2%), and other conifers and hardwoods. The area is also mostly mixed timber ground (80% of the project area is greater than atleast 20 years old) and 20% of the project area is in regen units less than 20 years old. Management history has been predominately evenage silviculture since being acquired mostly in 1992.

PART VI. OFFSET PROJECT ELIGIBILITY

A. Does the project take place on land that has greater than 10 percent tree canopy cover? *Supporting documentation is required. Submit as attachment labeled "Attachment F." See Part X of this listing document for more information.*	☒ **Yes** ☐ **No**
B. Indicate how the offset project meets (or will meet) the definition of Natural Forest Management per Table 3.1 in the Compliance Offset Protocol US Forest Offset Projects, June 25, 2015: *Supporting documentation is required. Submit as attachment labeled "Attachment G". See below and Part X of this listing document for more information.*	
1. Native species: Will the project consist of at least 95% native species based on the basal area per acre of live trees? *Provide additional information in Attachment G on how the project currently satisfies or will satisfy this requirement.*	☒ **Yes** ☐ **No**
2. Composition of native species: Does the Project Area naturally consist of a mixed species distribution where no single species' prevalence, 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? *Provide additional information in Attachment G on how the project currently satisfies or will satisfy this requirement. If "no", proceed to question 2a.*	☒ **Yes** ☐ **No**
a) If the Project Area does not naturally consist of a mixed species distribution: Will or have you provided a written statement from the government agency in charge of forestry regulation in the state where the project is located stipulating that the Project site is not capable of meeting the requirement of mixed species distribution.	☐ **Yes** ☐ **No**
3. Distribution of age classes/sustainable management: **a) Indicate how the project will meet the requirement for sustainable management if commercial harvesting is either planned or ongoing within the Project Area demonstrating sustainable long term harvesting practices. This applies to all forest landholdings of the Forest Owner(s)** (check one of the boxes). ☐ **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).** *Provide additional information, if necessary, in Attachment G on how the project currently satisfies this requirement.*	
b) On a watershed scale up to 10,000 acres (or the Project Area, whichever is smaller), projects must maintain, or make progress toward maintaining, a maximum of 40% of the project's forest lands in ages that are less than 20 years old. (Areas impacted by Significant Disturbance are exempt from this test until 20 years after reforestation of such areas.) Does the acreage within this project meet this requirement? *Provide additional information in Attachment G on how the project currently satisfies or will satisfy this requirement.*	☒ **Yes** ☐ **No**
4. Structural elements (standing and lying dead wood): Does the project currently meet the standing dead tree carbon stock requirement? *Provide additional information in Attachment G on how the project currently satisfies or will satisfy this requirement.*	☒ **Yes** ☐ **No**
C. Describe the management activities that will lead to increased carbon stocks in the Project Area, compared to the baselin Annual management actions in the form of investments in forest thinning, pre-commercial thinning and planting to return and maintain optimum stocking creates a net increase in the rate of sequestration. These actions/investments are matched by the annual management decision and investment in the form of holding otherwise merchantible timber to maintain this increased stocking of carbon on the project area when it is legally permisible to reduce that stock as evidenced by the baseline scenario.	
D. Is this project being implemented and conducted as the result of any law, statute, regulation, court order, or other legally binding mandate? **If "yes," explain:**	☐ **Yes** ☒ **No**
E. Will the offset project employ broadcast fertilization?	☐ **Yes** ☒ **No**
F. Does the offset project take place on land that was part of a previously listed and verified Forest Offset Project on any registry or program? *If "yes," proceed to questions F1 and F2. Otherwise, skip to Part VII.*	☐ **Yes** ☒ **No**

1. Was the previous Forest Offset Project terminated due to an Unintentional Reversal?	☐ Yes ☒ No

PART VII. CARBON STOCK INVENTORY

A. Provide a general description of the inventory methodology to be used to quantify carbon stocks for each required carbon pool in the forest project's offset boundary. The inventory methodology must describe the information required in Appendix A(b) of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015.

IFM-1 Standing Live:

The Inventory methodology for mixed age stands followed a systematic 4 x 10 chain systematic grid. With this system, approximately one plot per four acres is allocated. Plots are organized in linear strips going north-south across sections. Variable radius plot sampling was conducted at each plot using a predetermined Basal Area Factor (BAF). The BAF for each plot is determined by using the pre-existing inventory basal area multiplied by 0.8 and divided by 4, with a maximum BAF of 50. After the primary cruise has been completed for all tally trees 8 inches DBH and above, an offset plot is created to attain trees less than an 8-inch DBH using the same BAF. The offset plot is randomly assigned at the time of cruise with a cardinal direction and distance between 10 and 20 feet from plot center.

Plantations (e.g., even-aged stands) aged 14 years and less are inventoried based on preliminary reconnaissance and sampling where unit conditions are observed and leveraged in identifying the representative sample area for each plantation's population. The population may range from being homogenous or diverse in tree and stand conditions, but the identified area would statistically represent the observed distribution of tree sizes and species in the plantation. Upon reaching 15 years of age, plantations are inventoried using plots evenly assigned across a regeneration unit to achieve 1 plot per 4-acres with a 60-foot buffer on roads and unit boundaries. These plots consist of 3 nested plots: a 20-foot radius plot for planted trees, a 10-foot radius plot for understory trees and a 50-foot radius plot for retention trees inside the regeneration unit. The Haglof is used to determine in and out trees. The diameter and height of each crop tree is measured and recorded.

IFM-3 Standing Dead:

Cruised the same as standing live, however tree classes are classified as either 105: Dead tree with branches present, 106: Dead tree with majority of branches missing but bark still present, or 107: Dead tree with significant decay and no branches or bark.

IFM-6 Soil (if applicable):

N/A

IFM-7 Carbon in in-use forest products:

Inventory data that is subject to a depletion (THP) in a reporting period will be depleted accordingly to the THP silviculture and by cross-walking to SPI log accouting sheets (AS400's). Plots that have been accurately depleted will be used in the quantification of carbon in in-use forest products..

IFM-8 Forest product carbon in landfills (if applicable):

Same as IFM-7.

IFM- 9 Biological emissions from site preparation:

Not quantified because SSR IFM-6 is not included because none of the reasons to include it were triggered and IFM-9 allows no quantification when IFM-6 is not applicable.

IFM-14 Biological emissions/removals from change in harvesting on forestland outside project area:

Same as IFM-7.

IFM-17 Biological emissions from decomposition of forest products:

Same as IFM-7.

B. Describe the calculation methodologies to be used to determine metric tons per acre for each of the carbon pools included in the Offset Project Data Report.

IFM-1 Standing Live:

Above-ground standing live and dead gross biomass (AGB) was calculated using the appropriate species-specific FIA regional (California) volume and biomass equations (dated 09-19-2014). These equations rely on current DBH, and in most cases, total tree height as the two dependent variables. All total stem volumes (CVTS) were calculated for all live trees in the inventory greater than or equal to

1” DBH and on all dead trees greater than or equal to 5” DBH. Total stem volume (CVTS) was then used to calculate the biomass of the tree stem by looking up each trees wood density value and multiplying that by its CVTS and then dividing by 2000. Additionally, bark and branch biomass were calculated using their regional-species specific bark and branch biomass equations, if applicable.Total gross biomass above ground (bole, bark, & branches) is also converted from US tons to metric tons by multiplying by 0.90718474. Biomass is then converted to carbon by multiplying by 0.5 and then C02e by multiplying by 3.667.The Cairn’s equation 3 was used to calculate biomass in the below-ground portion in tonnes per hectare (Table 3, Cairns, Brown, Helmer, & Baumgardner, 1997). The below-ground biomass is calculated at the plot level using the sum of live and dead above-ground biomass. Once the plot level total below-ground biomass has been calculated, it is then allocated to the live and dead carbon pools based on the percentage of each carbon pools above-ground biomass. These values are then converted back into acres by dividing by 2.47105.

Above-ground standing gross biomass is adjusted for both live and dead trees to attain net biomass remaining using broken top % defect, log defect %, and if dead, density reduction factors (Harmon et al. 2011). Tree biomass is proportionally weighted by dividing the tree height in thirds and assigning the following weight: 65% at the bottom, 25% in the middle, and 10% at the top (Climate Action Reserve, 2014). Broken top trees are all taxed as 50% broken tops based on results from previous verifiable broken op trees, which accounts to roughly a reduction of 23% biomass for each broken top tree.

IFM-3 Standing Dead:

See above, however only standing dead trees atleast 5" in DBH and 15' in height are quantified.

IFM-6 Soil (if applicable):

N/A

IFM-7 Carbon in in-use forest products:

The values for actual carbon in harvested wood products is derived from depleting specific plots associated to the THPs in the project area for each reporting period. Tree frequencies prior to depletion are subtracted from their post depletion frequencies to calculate a harvest tree frequency. This harvest tree frequency is then used calculate the harvest metrics including total live biomass prior to mill delivery and sawlog volume (cubic feet) by predominant harvested species (e.g. Ponderosa Pine, Sugar Pine, White Fir, Douglas Fir, Incense Cedar, and Other Conifers/Hardwoods) for the THP. These values are converted into MTCO2e and multiplied by SPI’s mill efficacy percentage to obtain MTCO2e of net mill harvest. The wood product class percentages were then multiplied by the MTCO2e of the net mill harvest to determine the total MTCO2e for that specific wood product. The amount of MTCO2e transferred into each wood product was then multiplied by the 100-year average storage factor for In-Use Products (IFM-7) and Landfills (IFM-8).

IFM-8 Forest product carbon in landfills (if applicable):

See above.

IFM- 9 Biological emissions from site preparation:

Not quantified because SSR IFM-6 is not included because none of the reasons to include it were triggered and IFM-9 allows no quantification when IFM-6 is not applicable.

IFM-14 Biological emissions/removals from change in harvesting on forestland outside project area:

Secondary effects will be quantified using following equation 6.10 of the compliance offset protocol. Whenever the difference of actual harvest in the reporting period minus the baseline harvest is less than 0, 20% of that negative value will be applied to the total GHG reductions/removal enhancements for that reporting period.

IFM-17 Biological emissions from decomposition of forest products:

For baseline and project, quantified as a component of calculating carbon stored for 100 years in wood products and landfills.

C. Provide a summary of the inventory of carbon stocks for each carbon pool (or approach used, if inventory is not applicable).

IFM-1 Standing Live:

Inventory data for the project area is still in progress.

IFM-3 Standing Dead:

Inventory data for the project area is still in progress.

IFM-6 Soil (if applicable):

N/A

IFM-7 Carbon in in-use forest products:

Inventory data for the project area is still in progress.

IFM-8 Forest product carbon in landfills (if applicable):

Inventory data for the project area is still in progress.

IFM- 9 Biological emissions from site preparation:

N/A

IFM-14 Biological emissions/removals from change in harvesting on forestland outside project area:

Inventory data for the project area is still in progress.

IFM-17 Biological emissions from decomposition of forest products:

Inventory data for the project area is still in progress.

D. Provide the calculation of the offset project's reversal risk rating and expected contribution to the Forest Buffer Account.

Project Contribution to the Buffer Account Based on risk for the Forest Project.

Risk Category	Contribution from Risk	
Financial Failure	Default Risk	5%
Illegal Forest Biomass Removal	Default Risk	0%
Conversion	Default Risk	2%
Over-Harvesting	Default Risk	2%
Social	Default Risk	0%
Wildfire	Calculated Risk from worksheet	4%
Disease or Insect Outbreak	Default Risk	3%
Other Catastrophic Events	Default Risk	3%

Equation D.1 is then used to calculate the reversal risk rating which equals 17.59%

PART VIII. OFFSET PROJECT BASELINE

A. Required for <u>ALL</u> Improved Forest Management Projects

1. Describe the project's modeling plan, following the requirements and methods in Appendix B(h) of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015.

This is a general description of SPIs' project modeling plan. Specific details complying with US forests project protocol section B.3 will be provided to the verifier.

SPI utilizes the Graphical Planning Interface (GPI), a proprietary planning model. GPI inherently manages all modeled results from scenarios consisting of prescribed harvesting and growth events. A scenario has a minimum of 20 growth events for the 100-year planning period (period represents a 5-year interval). However, for some scenarios, there may be up to 30 or more events (including growth, harvesting, ingrowth events).

Treelists, comprised of strata level plots, were prepared for each stratum. Stratum Level Scenarios (a set of timing events) were designed and evaluated in GPI. Stratum inventory data is altered by each scenario's events. In the modeling effort, GPI manages the inventory, harvest, and growth results for each scenario. CACTOS, the primary model called within GPI, has been designed to simulate stand and tree-growth changes, including mortality. Hundreds of scenarios are created in

GPI and then assigned to landclasses (one or more landclasses are contained within a logical logging unit).

Each logging unit was manually-created, as well as manually timed, in GIS that is based on criteria such as topography, logging system (e.g. cable, tractor), and water protection. Under the baseline management, all forested stands outside of non-commercial forest stratums were part of the modeling plan. Management timing is first based on recognizing outstanding Approved THPs before and after the project commencement date, and then modeled unevenage management for the remaining area starting at year 0. Management in the remaining periods is then limited by legal constraints. Management and silviculture timing was based on stand conditions. A detailed summary of silviculture by decade, in addition, periodic growth and harvest by decade will be provided to the verification entity.

Since all potential future harvest units are designed manually and then scheduled manually with many considerations, the first being SPIs' own 10 year planning adjacency constraint and SPIs attempt to produce larger future stands of similar ages by putting next decade units adjacent to the previous decadal harvests. In concert with our long term effort to move towards an 80 year rotation, we verify and report that we do not exceed the 40% in age classes under 20 years old at any point in the 100 year planning horizon. We also place our harvest units across all the project area, therefore unlike linear programming harvest schedulers we do not harvest any single strata in any greater percentage than it is represented on the project area, thus avoiding potential bias of harvest scheduling models.

A matrix documenting any and all legal constraints affecting forest management activities in the project area, labeled "Attachment H", is required. See Part X of this listing document for more information.

2. Estimate the project's baseline onsite carbon stocks and provide a qualitative description. Explain any annual changes in baseline carbon stocks over time.

Estimated baseline onsite carbon stocks are the following:
IFM-1 (Standing Live): 3,222,698 MTCO2e or 177.16 per acre
IFM-3 (Standing Dead): 106,375 MTCO2e or 5.85 per acre
IFM-7 (Carbon in in-use products): 9,787 MTCO2e or 0.54 per acre
IFM-8 (Forest products in landfills): 6,293 MTCO2e or 0.35 per acre
IFM-17 (Biological emissions from decomposition): 5,052 MTCO2e or 0.28 per acre

A graph portraying the baseline onsite carbon stocks, labeled "Attachment I," and a diagram of the baseline incorporating all required carbon stocks, labeled "Attachment J," are required. See Part X of this listing document for more information.

3. Identify the approved growth model that will be used for the project.

SPI utilizes the UC Berkely Coop growth and yield model CACTOS

4. Provide an estimate of carbon that will be stored long-term in harvested wood products in the baseline.

Estimated carbon that will be stored long-term in harvested wood products (IFM 7 + IFM 8) in the baseline is 16,081 MTCO2e or 0.88 MTCO2e/acre.

B. Required for Improved Forest Management Projects on <u>Private Lands ONLY</u>

1. Provide the estimated initial above ground standing live carbon stock per acre for the project, if known.

The estimated initial above ground standing live carbon stock per acre is 153.12 MTCO2e.

2. Provide the estimated minimum baseline level per acre.

The estimated minimum baseline level per acre for the project is 144.70 MTCO2e per acre.

3. Provide the weighted common practice value per acre associated with the Project Area.

The weighted common practice value of the project area is 144.70.

4. Are the Project Area's initial above-ground standing live carbon stocks per acre above or below Common Practice?
If below Common Practice, what is the High Stocking Reference for the Project Area?

Further documentation is required if project below Common Practice. Submit supporting documents as attachments labeled "Attachment K." See Part X of this listing document for more information.

☒ **Above**
☐ **Below**

5. Does the Forest Owner(s) and its affiliate(s) own land in fee or hold timber rights on land outside the Project Area? *If "no," skip to question 6.*	☒ **Yes** ☐ **No**
a. If "yes" does the Protocol require the use of a weighted average carbon stock (WCS) on lands in the same Logical Management Unit (LMU, as defined in subchapter 1.2 and 5.2.1)? *If "no," skip to question 6.*	☐ **Yes** ☒ **No**
b. If "yes," is inventory data available for the LMU or will the OPO use a stratified vegetation analysis?	☐ **Data available for LMU** ☐ **Stratified Vegetation Analysis**
c. Provide the estimated WCS per acre, if known.	

6. How does the OPO demonstrate financial feasibility of the growth and harvesting regime assumed for the baseline? (check one of the boxes)

☒ **Conducting a financial analysis of the anticipated growth and harvesting regime that captures all relevant costs and returns, taking into consideration all legal, physical, and biological constraints, using regional norms or documented costs and returns for the project area or other properties in the Forest Project's Assessment Area**

☐ **Providing evidence that activities similar to the proposed baseline growth and harvesting regime have taken place on other properties within the Forest Project's Assessment Area within the past 15 years**

Supporting documentation is required. Submit as attachment labeled "Attachment L." See Part X of this listing document for more information.

C. Required for Improved Forest Management Projects on Public Lands ONLY

1. Has an initial forest carbon inventory been conducted for the Project Area?	☐ **Yes** ☐ **No**
2. Provide a projection of future changes to Project Area forest carbon stocks extrapolating from historical trends.	
3. Explain how current public policy will affect onsite carbon stocks (as per requirements of subchapter 5.2.2) and how the baseline modeling incorporates constraints imposed by all applicable statutes, regulations, policies, plans, and activity-based funding. Provide documentation of these constraints that include a description, a geographic location and associated agency, narrative of effect, and modeling technique used, per requirements of subchapter 7.1.4(a)(3).	
4. Have carbon stocks in the Project Area been increasing or declining over the preceding ten-year period?	☐ **Increasing** ☐ **Declining**

PART IX. ADDITIONAL QUESTIONS

A. Have any lands within the Project Area ever been listed or registered with any offset project registry or program in the past? *If "yes," identify the registry or program and provide details on the issued credits below.*	☐ **Yes** ☒ **No**
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? *If "yes," identify the registry or program and provide details on the issued credits below.*	☐ **Yes** ☒ **No**

Registry/Program:	Reporting Period(s):	Vintage(s):	Number of Credits Issued:

PART X. ATTACHMENTS

A. If the answer to Part IV.A is "yes," provide documentation (e.g., deed of trust, title report, etc.) showing the OPO's ownership interest in the property and its interest in the trees and standing timber on the property.
If the answer to Part IV.A is "no," provide documentation supporting the explanation of the OPO's right to undertake and list the project.

B. If the answer to Part IV.E is "public," provide 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. ☒ **N/A**

C. If a Qualified Conservation Easement (QCE) has been recorded, provide a copy. The listing information contained in this form and the documents attached to it will eventually be submitted to ARB so submitting a copy of the QCE as an attachment to this listing document fulfills the requirement in 7.1.1.1(a)(20) of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015 to provide ARB with a copy. ☒ **N/A**

D. If the project is located on one of the categories of Tribal land listed in Part IV.G, provide documentation demonstrating that the land within the Project Area is owned by a tribe or private entity. Also provide documentation that demonstrates the existence of a limited waiver of sovereign immunity between ARB and the governing body of the Tribe entered into pursuant to section 95975(l) of the Cap-and-Trade Regulation. ☒ **N/A**

E. Provide descriptions and a georeferenced GIS shapefile(s) of the Project Area including:

1. **Governing jurisdictions, and latitude/longitude coordinates**
2. **Public and private roads (shapefile only)**
3. **Towns (shapefile only)**
4. **Major watercourses (4th order or greater), water bodies, and watersheds (shapefile only)**
5. **Topography (shapefile only)**
6. **Townships, ranges, and sections (shapefile only)**
7. **Existing land cover and land use (description with optional shapefile)**
8. **Forest vegetation types (description with optional shapefile)**
9. **Site classes (description with optional shapefile)**
10. **Land pressures and climate zone/classification (description with optional shapefile)**
11. **Historical land uses, current zoning, and projected land use within the Project Area (description with optional shapefile)**

F. Provide supporting documentation demonstrating that the offset project takes places on land that has greater than 10 percent tree canopy cover.

G. Provide additional information on how the project satisfies the Natural Forest Management criteria set forth in table 3.1 of Section 3.1(a)(1).

H. Attach a matrix documenting any and all legal constraints affecting forest management in the project boundary. Matrix must include:

1. **A description of each constraint**
2. **The applicable geographic range for each constraint**
3. **The local, state, or federal agency associated with each constraint**
4. **A narrative describing the effect of the constraint on forest management**
5. **A description of the modeling used to implement the constraint**

I. Attach a graph portraying the baseline onsite carbon stocks with time depicted on the x-axis and metric tons CO_2e depicted on the y-axis that meets the requirements of Section 7.1.1(a)(29).

J. Attach a diagram of the baseline incorporating all required carbon stocks.

K. For projects on <u>private lands ONLY</u>: If the Project Area's initial above-ground standing live carbon stocks are below Common Practice, submit an affidavit testifying that the inventory depicted over the past 10 years (used to determine the High Stocking Reference for the Project Area) is reasonably accurate, and include a summary of volume harvested over the past 10 years. ☒ **N/A**

L. For projects on <u>private lands ONLY</u>: Provide a description and supporting evidence, if applicable, that the growth and harvesting regime assumed for the baseline is financially feasible based on the qualifications in Section 5.2.1(e)(2) of the Protocol. ☐ **N/A**

PART XI. ATTESTATIONS AND OPO SIGNATURE

Em Initial	**I certify under penalty of perjury under the laws of the State of California the GHG reductions and/or GHG removal enhancements for**				
	Project Name: Mosquito 2019	**from**	Crediting Period Start Date: **10/25/2019**	**to**	Crediting Period End Date: **04/24/2044**
	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.				
Em Initial	**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 of provisions in this article.**				
Em Initial	**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 regulations 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.**				

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).

Submit the information in this form to the appropriate Offset Project Registry

SIGNATURE:	PRINTED NAME:
	Edward C. Murphy
TITLE:	DATE:
Information and Environmental Services Manager	10/24/2019

Submit the information in this form to the appropriate Offset Project Registry

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

Section 95975 of the Cap-and-Trade Regulation describes the requirements and process for an Offset Project Operator (OPO) or Authorized Project Designee (APD) to list an offset project with an approved Offset Project Registry. This form is designed to help an OPO or APD fulfill the requirements of Section 95975 of the Cap-and-Trade Regulation and of Section 7.1.1 of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015, for listing an offset project. The U.S. Forest protocol designates three project types: Avoided Conversion, Improved Forest Management, and Reforestation. This form is designed for Improved Forest Management projects only. The information in the completed form should be submitted to the approved Offset Project Registry with which the OPO or APD would like their offset project listed.

Where to Submit Information Contained in This Form

Please complete the information on the form using your computer. Then print, sign, and scan the form. The completed and signed information and all supporting documentation should be submitted to the appropriate Offset Project Registry.

Copies of this form can be downloaded from the ARB website at:
http://www.arb.ca.gov/cc/capandtrade/offsets/forms/forms.htm

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

This form is protected with restricted editing to facilitate completing the form. If the applicant wishes to unprotect the form, the password is "form".

Part I. Entity Applying for Listing:

- Indicate whether the Offset Project Operator (OPO) or Authorized Project Designee (APD) is submitting the information for project listing. Section 95975(a) of the Cap-and-Trade Regulation requires that the OPO and, if applicable, the APD must register with ARB for the Cap-and-Trade Program prior to listing a project. It also requires that neither the OPO nor APD be subject to any Holding Account restrictions imposed as part of an enforcement action. To register with ARB, please visit the website for Compliance Instrument Tracking System Services (CITSS): https://www.wci-citss.org/
- List the name, phone, email address, and mailing and physical address of the person submitting the information. If the mailing and physical addresses are the same please check the box and leave the physical address fields blank. This person should be an employee of the OPO or APD, whichever entity is making the submission. The person submitting the information need not be the same person as the contact person listed for the OPO or APD in Part III and also need not be the person signing the form in Part XI.
- The person submitting the information should indicate the date the form is completed.

Part II. Offset Project Information:

- Provide the name for the offset project. Indicate the offset project commencement date and the start and end dates of the first reporting period; approximations are acceptable if precise dates are unknown.
- Project commencement for an Improved Forest Management Project must be linked to a discrete, verifiable action that delineates a change in practice that increases sequestration and/or decreases emissions relative to the forest project's baseline. This date could be when the Project Area is transferred to public ownership, when a conservation easement on the Project Area is recorded, or when submitting the offset project listing information.

Part III. OPO/APD Information:

- Enter contact information for the Offset Project Operator (OPO), Authorized Project Designee (APD), and Technical Consultant for the offset project. Every project will have an OPO. If a project does not have an APD or Technical Consultant, please mark the box indicating the project does not have an APD or Technical Consultant and leave the appropriate fields blank.
- For the OPO and, if applicable, the APD and Technical Consultant, enter the entity's name, its CITSS ID number (if applicable), its mailing address, and the name, phone number, and e-mail address of a contact person for the entity.

The CITSS ID is six characters in length, with two letters followed by four numbers (e.g., "CA1234"). **DO NOT PROVIDE THE OPO's or APD's CONFIDENTIAL CITSS ACCOUNT NUMBER**, which begins with the CITSS ID number followed by a hyphen and more numbers.

Part IV. Land Ownership:

- This part includes questions regarding land ownership and property interests.
- Further documentation is required based on the responses to some questions. See Part X of this listing form for more information on the precise requirements.

Part V. Offset Project Area:

- This part asks for qualitative descriptions of the offset Project Area.
- Maps are required to complement the descriptions provided in this part. See Part X of this listing form for more information on the precise requirements.
- The Project Area should be determined following the requirements of chapter 4 of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015.
  Assessment areas shall be determined by referencing the Assessment Area Data File available at:
- http://www.arb.ca.gov/cc/capandtrade/protocols/usforest/usforestprojects_2015.htm

Part VI. Offset Project Eligibility:

- The questions in this part are designed to facilitate the determination of project eligibility for Improved Forest Management Projects.
- Further documentation is required based on the responses to some questions. See Part X of this listing form for more information on the precise requirements.
- Details on the eligibility requirements for Improved Forest Management Projects can be found in subchapters 2.2, and 3.1 of the Compliance Offset Protocol U.S. Forest Project, June 25, 2015.
- Details on the Natural Forest Management criteria can be found in Table 3.1 in the Compliance Offset Protocol U.S. Forest Project, June 25, 2015.

Part VII. Carbon Stock Inventory:

- Projects are not required to have completed a full carbon stock inventory at the time of listing, but OPOs/APDs should be familiar with Appendix A and have a plan for how they will meet the requirements therein. Therefore, a general description of the project's inventory methods and procedures, consistent with the requirements in Appendix A(b), is required at the time of listing. ARB recognizes that some information provided will be preliminary and based on best estimates. If the project's inventory methodology changes between the time of listing and submission of the first OPDR, this should be reported as a change to the information submitted at project listing when submitting the first OPDR.
- Subchapter 5.2 of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015 outlines the approved quantification methodologies for Improved Forest Management Projects. Further details on completing a forest project carbon inventory can be found in Appendix A of the Protocol.
- Follow the steps in Appendix D of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015 to quantify the project's reversal risk rating.
- The project's expected contribution to the Forest Buffer Account is determined annually based upon the project's risk of reversal and is calculated by multiplying the project specific reversal risk rating by the total net GHG reductions/removals achieved by the project. An approximation of the contribution to the Forest Buffer Account is acceptable.

Part VIII. Offset Project Baseline:

- Projects are not required to have a finalized baseline at the time of listing, but OPOs/APDs should be familiar with Appendix B and have a plan for how they will meet the requirements therein. A complete modeling plan reflecting the requirements in Appendix B(h) is therefore required at the time of listing. ARB recognizes that some information provided will be preliminary or based on best estimates. If the project's modeling plan or baseline estimates change between the time of listing and submission of the first OPDR, this should be reported as a change to the information submitted at project listing when submitting the first OPDR.
- Note that IFM projects located on public land must present documentation demonstrating explicit approval of the offset project's management activities and baseline. These projects may report changes to the baseline within the initial OPDR if the changes have gone through a public review process and meet the Protocol requirements regarding explicit approval of the project's baseline.
- This part is divided into three sections: questions required for all Improved Forest Management Projects; questions for Improved Forest Management Projects on private lands; and questions for

Improved Forest Management Projects on public lands. Answer the questions applicable to the project.

- Subchapter 5.2 of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015 outlines the approved quantification methodologies for Improved Forest Management Projects.
- ARB approved growth models can be found in Appendix B(a) of the Compliance Offset Protocol U.S. Forest Projects, June 25, 2015.
- When a requirement is not applicable to the project being listed, please select the "N/A" (Not Applicable) checkbox next to the requirement so that it is clear that the question was not inadvertently left unanswered.

Part IX. Additional Questions:

- Answer both questions. If the answer to either question is "yes," identify the registry or program and provide details on the issued credits in the space provided.

Part X. Attachments:

- Provide each attachment on a separate sheet of paper and submit along with the completed application for listing.
- To aid with tracking each attachment, it is recommended that the attachments are labeled to correspond with the letter in Part X that they refer to (e.g. "Attachment B").
- When an attachment is not applicable to the project being listed, please select the "N/A" (Not Applicable) checkbox next to the requirement so that it is clear that the attachment was not inadvertently left off.
- Requirements for considering legal constraints can be found in subchapter 5.2.1(e)(1). Further details on modeling carbon stocks can be found in Appendix B of the Protocol.

Part XI. Attestations and OPO Signature:

- Section 95975(c) of the Cap-and-Trade Regulation requires three attestations for listing an offset project. The required attestations are provided in this section. Each attestation should be initialed by the person signing the form.
- The first attestation requires the applicant to provide the offset project name and the start and end dates of the crediting period to complete the statement. The offset project name should match the name entered in Part II. The dates for the offset project's crediting period must also be provided. Please note that the dates provided in the attestation are for the crediting period, not for the first reporting period provided in Part II. The crediting period dates may be approximate if precise dates are not known.
- Section 95975(d) requires the attestations in Section 95975(c) to "be provided to an Offset Project Registry with the listing information, if being listed with an Offset Project Registry."
- The individual signing the document must be registered in CITSS as the OPO's Primary Account Representative or Alternate Account Representative. The individual signing the document may be an APD employee and/or representative; but to sign the document, the individual must be an Account Representative on the OPO's CITSS account.
- Please provide the person's signature, printed name, corporate title, and date signed.

Please contact your Offset Project Registry with any questions.

Submit the information in this form to the appropriate Offset Project Registry