

**Forest Project Design Document**

**Instructions:** The Forest Project Design Document is a required document for project registration. This document must be submitted as part of the initial verification. This template is only intended as guide and provides the minimum required information to be reported. This template is designed for use with Forest Projects under Version 3.1, 3.2, and 3.3 of the Forest Project Protocol. The Forest Owner has the option to include additional information at their discretion. Reforestation Projects may defer the following items until their second site-visit verification: inventory methodology, calculation methodology, modeling plan, carbon stock inventory, confidence statistics, baseline onsite carbon stocks, baseline harvested wood products, and calculation of the project’s reversal risk rating and buffer pool contribution.

**Project Developer**

**Project Name**

**CAR Project ID**

**Reporting Period**

**Protocol Version**

Contents

[1. Introduction 5](#_Toc321409008)

[2. Project Eligibility 5](#_Toc321409009)

[a. Project Type (Section 2.1) 5](#_Toc321409010)

[b. Project Location (Section 3.8) and Project Area (Section 4) 5](#_Toc321409011)

[c. Additionality – Legal Requirement Test (Section 3.1.1) 5](#_Toc321409012)

[i. Reforestation 5](#_Toc321409013)

[ii. Improved Forest Management 5](#_Toc321409014)

[iii. Avoided Conversion 5](#_Toc321409015)

[d. Additionality – Performance Standard Test (Section 3.1.2) 6](#_Toc321409016)

[i. Reforestation 6](#_Toc321409017)

[ii. Improved Forest Management 6](#_Toc321409018)

[iii. Avoided Conversion 6](#_Toc321409019)

[e. Broadcast Fertilization 6](#_Toc321409020)

[f. Project Start Date (Section 3.2) 6](#_Toc321409021)

[g. Sustainable Harvesting Practices (Section 3.10.1) 6](#_Toc321409022)

[h. Natural Forest Management (Table 3.2) 6](#_Toc321409023)

[i. Native Species 6](#_Toc321409024)

[ii. Composition of Native Species 6](#_Toc321409025)

[iii. Distribution of Age Classes 7](#_Toc321409026)

[iv. Structural Elements 7](#_Toc321409027)

[i. Ongoing Management Activities (Section 3.10.3) 7](#_Toc321409028)

[3. Inventory Methodology 7](#_Toc321409029)

[a. GHG Assessment Boundary (Section 5) 7](#_Toc321409030)

[b. Inventory Design and Sampling Process 7](#_Toc321409031)

[c. Field Measurement and Plot Monumenting 7](#_Toc321409032)

[d. Data Management System 7](#_Toc321409033)

[e. Quantification Methodology 7](#_Toc321409034)

[f. Inventory Update Process 7](#_Toc321409035)

[4. Baseline Carbon Stocks (Section 6) 8](#_Toc321409036)

[a. Reforestation Projects (Section 6.1) 8](#_Toc321409037)

[i. Baseline Characterization 8](#_Toc321409038)

[ii. Inventory of Carbon Stocks Affected by Site Preparation 8](#_Toc321409039)

[iii. Baseline Modeling 8](#_Toc321409040)

[iv. Estimating Baseline Carbon in Harvested Wood Products 8](#_Toc321409041)

[b. Improved Forest Management Projects (Section 6.2) 8](#_Toc321409042)

[i. Legal Constraints (6.2.1.2) 8](#_Toc321409043)

[ii. Financial Constraints (6.2.1.3) 8](#_Toc321409044)

[iii. Estimate Baseline Onsite Carbon Stocks (Private Lands) 9](#_Toc321409045)

[iv. Estimate Baseline Onsite Carbon Stocks (Public Lands) 9](#_Toc321409046)

[v. Determination of Weighted Average Carbon Stocks (WCS) (6.2.1.1) 9](#_Toc321409047)

[vi. Estimating Baseline Carbon in Harvested Wood Products (6.2.3) 9](#_Toc321409048)

[c. Avoided Conversion (Section 6.3) 9](#_Toc321409049)

[i. Baseline Characterization and Projection 9](#_Toc321409050)

[ii. Estimating Baseline Carbon in Harvested Wood Products (6.3.2) 9](#_Toc321409051)

[5. Project Carbon Stocks 10](#_Toc321409052)

[a. Reforestation (Section 6.1) 10](#_Toc321409053)

[i. Actual Onsite Carbon Stocks 10](#_Toc321409054)

[ii. Actual Carbon in Harvested Wood Products 10](#_Toc321409055)

[iii. Quantifying Secondary Effects 10](#_Toc321409056)

[b. Improved Forest Management (Section 6.2) 10](#_Toc321409057)

[i. Actual Onsite Carbon Stocks 10](#_Toc321409058)

[ii. Actual Carbon in Harvested Wood Products 10](#_Toc321409059)

[iii. Quantifying Secondary Effects 11](#_Toc321409060)

[c. Avoided Conversion 11](#_Toc321409061)

[i. Actual Onsite Carbon Stocks 11](#_Toc321409062)

[ii. Actual Carbon in Harvested Wood Products 11](#_Toc321409063)

[iii. Quantifying Secondary Effects 11](#_Toc321409064)

[6. Calculation of GHG Reductions and Removals 11](#_Toc321409065)

[a. All Project Types 11](#_Toc321409066)

[7. Reversal Risk Rating 11](#_Toc321409067)

[a. Reversal Risk Rating by Category 12](#_Toc321409068)

[b. Project Reversal Risk Rating 12](#_Toc321409069)

# Introduction

**OPTIONAL:** Provide a general introduction for the project.

# Project Eligibility

## Project Type (Section 2.1)

**REQUIRED:** Provide information about how the project meets the forest project definition and all requirements set forth in Section 2 of the FPP. Reforestation (RF) projects should show how they meet the requirements of Section 2.1.1. Improved Forest Management (IFM) projects should show how they meet the requirements of Section 2.1.2. Avoided Conversion (AC) projects should show how they meet the requirements of 2.1.3.

## Project Location (Section 3.8) and Project Area (Section 4)

**REQUIRED:** Describe the project location and the project’s boundaries. Provide maps that detail public and private roads, towns, major watercourses, topography, townships, ranges, and sections or latitude and longitude. Further, describe the existing land cover and land use, forest vegetation types, site classes, and land pressures and climate zone/classification (maps optional). Provide documentation demonstrating approval for the project, if necessary. The Project Location must satisfy the requirements of Section 3.8 of the Protocol. The Project Area must be defined according to the requirements of Section 4 of the Protocol.

## Additionality – Legal Requirement Test (Section 3.1.1)

### Reforestation

**REQUIRED:** Indicate that any reforestation efforts are not legally required as of the project’s start date, as well as describing any legal review or supporting evidence for this statement. See Section 3.1.1.1.

### Improved Forest Management

**REQUIRED:** Indicate that the Forest Project is not legally required, and was not legally required at the time of the Project’s Start Date. See Section 3.1.1.2.

### Avoided Conversion

**REQUIRED:** Describe how the project meets the legal requirement test. This includes demonstrating that the planned forest conservation activities are not legally required. Documentation must be provided that demonstrates the anticipated land conversion is legally permissible. Please reference Section 3.1.1.3 for further information.

## Additionality – Performance Standard Test (Section 3.1.2)

### Reforestation

**REQUIRED:** Provide evidence showing that the Project Area has either: 1) had less than 10 percent tree canopy cover for at least ten years, or 2) has undergone a Significant Disturbance. If the Project Area has undergone a Significant Disturbance, describe which scenario in Appendix E the Project falls under, or show that the Forest Project occurs on a type of land for which the Forest Owner has not historically engaged in or allowed timber harvesting (e.g. state parks).

### Improved Forest Management

**OPTIONAL:** Improved Forest Management Projects automatically satisfy the Performance standard Test. Project Developers may reflect this statement in their Project Design Document.

### Avoided Conversion

R**EQUIRED:** The Project Developer must provide the full text of the appraisal for the Project Area. In this section of the PDD, provide the evidence per Section 3.1.2.3 showing that the Project Area is suitable for conversion to the highest value alternative land use as identified by the appraisal. Provide evidence from the appraisal showing that the market value of the alternative land use is at least 40 percent greater than the value of the current forested land use.

## Broadcast Fertilization

**REQUIRED:** Explicitly state that the project will not utilize broadcast fertilization.

## Project Start Date (Section 3.2)

**REQUIRED:** Provide an explanation of and justification for the Project Start Date, according to Section 3.2 of the Protocol. Please provide supporting documentation and evidence supporting the action designating the date as a Project Start Date.

## Sustainable Harvesting Practices (Section 3.10.1)

**REQUIRED:** If there is commercial harvesting either planned or initiated within any of the forest landholdings controlled by the Forest Owner and its affiliates within the Project’s Assessment Area(s), describe how the project meets the Sustainable Harvesting Practices requirement through one of the three options described in Section 3.11.1.

## Natural Forest Management (Table 3.2)

### Native Species

**REQUIRED:** Describe the native species within the Project Area and provide the quantification required to show that at least 95% of the carbon in the standing live carbon pool is composed of native species.

### Composition of Native Species

**REQUIRED:** Describe how the project meets this requirement based on the Composition of Native Species percentage value provided in the Assessment Area Data File for the appropriate Project Assessment Area(s). Variances may be granted for this requirement at the Reserve’s discretion.

### Distribution of Age Classes

**REQUIRED:** Describe the distribution of age classes in the Project Area, ensuring to clearly specify that no more than 40% of forested acreage is in ages less than 20 years.

### Structural Elements

**REQUIRED:** Describe the quantification of standing and lying deadwood, and compare it to the requirements provided in Table 3.2.

## Ongoing Management Activities (Section 3.10.3)

**REQUIRED:** Describe the ongoing management activities on the Project Area that will lead to increased carbon stocks in the Project Area compared to the baseline. **Any project located on public lands must provide documentation demonstrating explicit approval of the project’s management activities**

# Inventory Methodology

## GHG Assessment Boundary (Section 5)

**REQUIRED:** List the sources, sinks, and reservoirs (SSRs) that are included in the Project, according to the requirements listed for RF, IFM, and AC Projects as described in Tables 5.1, 5.2, and 5.3 respectively.

## Inventory Design and Sampling Process

**REQUIRED:** Describe the inventory design, detailing the year of the inventory, the number of sample plots, dimensions and distribution of the plots, the sampling process, and any stratification either pre or post data collection. If using Forest Project Protocol Version 3.3, a map delineating the different forest stratum is required.

## Field Measurement and Plot Monumenting

**REQUIRED:** Describe the selection process for inventory point locations and the tools used to monument plots. Include descriptions of the field procedure including sampling method, sampling intensity, and measurement methodologies.

## Data Management System

**REQUIRED:** Describe the organization of data for the project, including the software and tools used to manage and store data, as well as any quality control methods in place.

## Quantification Methodology

**REQUIRED:** Describe the methodology for translating the sampling and inventory process into a figure for metric tons CO2e per acre, including conversion factors and units.

## Inventory Update Process

**REQUIRED:** Describe the process for which the Project will update its carbon stocks from year to year. Also specify the schedule for conducting new inventories, how any new inventory plots will be incorporated into the inventory estimate, and how any harvests or disturbances will be addressed. Specify the model used as well as explicitly state that the project will comply with the requirement that any field inventory data used cannot be more than 12 years old.

# Baseline Carbon Stocks (Section 6)

## Reforestation Projects (Section 6.1)

### Baseline Characterization

**REQUIRED:** Provide a qualitative description of the likely vegetative conditions and activities that would have occurred without the project, including all regulations and legal mandates, as well as an assessment of the commercial value of the trees within the Project Area over the next 30 years.

### Inventory of Carbon Stocks Affected by Site Preparation

**REQUIRED:** Inventory the carbon stocks in the Project’s GHG Assessment Boundary (in line with what was represented in Section 3.a. of the PDD) and describe the inventory. For more information, see Bullet Point #2 in Section 6.1.1 of the Forest Project Protocol.

### Baseline Modeling

**REQUIRED:** Describe the procedures and software used to model the baseline carbon stocks as described in Bullet Point #3 of Section 6.1.1 as well as Appendix B of the Forest Project Protocol. Any baseline modeling must include all legal constraints.

### Estimating Baseline Carbon in Harvested Wood Products

**REQUIRED:** If harvesting of pre-existing trees is expected to occur in the baseline scenario, provide the information required per Section 6.1.2 of the Forest Project Protocol. Describe the process and tools used to estimate the baseline carbon in harvested wood products. Modeling must be done according to the requirements of Appendix B. Quantification of carbon in harvested wood products must be done according to the requirements of the harvested wood products quantification guidance in Appendix A.

## Improved Forest Management Projects (Section 6.2)

### Legal Constraints (6.2.1.2)

**REQUIRED:** Describe the legal constraints that could affect baseline growth and harvesting scenarios. For details on what constitutes a legal constraint, please reference Section 6.2.1.2 of the Forest Project Protocol.

### Financial Constraints (6.2.1.3)

**REQUIRED:** Provide either the financial analysis of the anticipated growth and harvesting regime demonstrating financial feasibility or evidence that harvesting has taken place in comparable sites within the project’s same Assessment Area. For definitions of what constitutes a comparable site, see Section 6.2.1.3.

### Estimate Baseline Onsite Carbon Stocks (Private Lands)

**REQUIRED:** Describe the processes and results from following the steps and requirements as described in Section 6.2.1 of the Forest Project Protocol. Based on the results of determining whether initial carbon stocks are above or below Common Practice (calculation of the Minimum Baseline Level or “MBL”), describe the process and the result of the analysis for determining the baseline carbon stocks over 100 years. Provide any relevant data and a chart displaying the tonnes of CO2e present in the baseline. Include an explicit figure for the Project’s baseline according to the Project’s Modeling Plan.

### Estimate Baseline Onsite Carbon Stocks (Public Lands)

**REQUIRED:** Describe the process and result from modeling the baseline per the requirements of Section 6.2.2. Documentation must be provided demonstrating the explicit approval of the project’s baseline.

### Determination of Weighted Average Carbon Stocks (WCS) (6.2.1.1)

**REQUIRED:** The MBL as calculated above must be compared to carbon stocks on other lands within the same logical management unit (LMU) as the project area. Based on the definition of LMU provided in Section 6.2.1.1, describe the process and results of the calculation of WCS (Sections 6.2.1.1.1 and 6.2.1.1.2).

### Estimating Baseline Carbon in Harvested Wood Products (6.2.3)

**REQUIRED:** Describe the process and results of determining the amount of carbon in harvested wood products according to the requirements as described in Section 6.2.3. Provide the final figures as well.

## Avoided Conversion (Section 6.3)

### Baseline Characterization and Projection

**REQUIRED:** In this section, provide details on what the expected alternative highest-value land use for the Project Area would be, with supporting information from an appraisal. Further, describe the process and the results for estimating the rate of conversion/removal of onsite carbon stocks. Additionally, onsite carbon stocks must be modeled over 100 years based on this estimated rate of conversion/removal, including changes in carbon stocks for all required and selected optional pools. If the protocol provides standardized values for baseline carbon emissions of specific carbon pools, the Project Developer must use those values.

### Estimating Baseline Carbon in Harvested Wood Products (6.3.2)

**REQUIRED:** Describe the process, as well as the result, used to estimate baseline carbon in harvested wood products according to the guidance from Section 6.3.2. Specifically, determine the carbon equivalent of biomass that would have been harvested in each year, and the amount of harvested carbon that would have remained stored in wood products averaged over 100 years. These estimations should be done in accordance with the guidance in Sections 6.3.1 and the Harvested Wood Products guidance in Appendix A.

# Project Carbon Stocks

## Reforestation (Section 6.1)

### Actual Onsite Carbon Stocks

**REQUIRED:** Describe the process, as well as the results, used to update the the Project Area’s forest carbon inventory. Specifically, please describe the approved model being used to project prior-year data, ensuring that any sampling done in the previous year is incorporated in the modeling. Describe how the forest inventory estimate has accounted for any harvests and/or disturbances that occurred in the previous year. Also include a section describing how the confidence deduction for statistical uncertainty was derived, and show that it was applied appropriately to the forest inventory.

### Actual Carbon in Harvested Wood Products

**REQUIRED:** In this section, describe the process (and the result) used to determine the actual amount of carbon in standing live carbon stocks harvested in the current year. Further, determine the amount of harvested carbon that will remain in wood products averaged over 100 years, in accordance with the requirements described in Appendix A.

### Quantifying Secondary Effects

**REQUIRED:** In this section, identify the site preparation emission factor in accordance with Table 6.1 of the Forest Project Protocol. This site preparation emissions factor must then be multiplied by the number of acres in the Project Area (see Equation 6.2). Additionally, emissions derived from shifting of cropland and grazing activities must be accounted for. The leakage risk percentage must be determined from Figure 6.3 and applied yearly. Finally, the Total Secondary Effect Emissions as calculated from Equation 6.4 should be reported here.

## Improved Forest Management (Section 6.2)

### Actual Onsite Carbon Stocks

**REQUIRED:** Describe the process, as well as the results, used to update the the Project Area’s forest carbon inventory. Specifically, please describe the approved model being used to project prior-year data, ensuring that any sampling done in the previous year is incorporated in the modeling. Describe how the forest inventory estimate has accounted for any harvests and/or disturbances that occurred in the previous year. Also include a section describing how the confidence deduction for statistical uncertainty was derived, and show that it was applied appropriately to the forest inventory.

### Actual Carbon in Harvested Wood Products

**REQUIRED:** In this section, describe the process (and the result) used to determine the actual amount of carbon in standing live carbon stocks harvested in the current year. Further, determine the amount of harvested carbon that will remain in wood products averaged over 100 years, in accordance with the requirements described in Appendix A.

### Quantifying Secondary Effects

**REQUIRED:** In Improved Forest Management projects, emission from Secondary Effects can occur when a project reduces harvesting in the Project Area, resulting in an increase in harvesting on other properties controlled by the Forest Owner. In this section, describe the calculation of Equation 6.10, which quantifies the impact of this activity shifting.

## Avoided Conversion

### Actual Onsite Carbon Stocks

**REQUIRED:** Describe the process, as well as the results, used to update the the Project Area’s forest carbon inventory. Specifically, please describe the approved model being used to project prior-year data, ensuring that any sampling done in the previous year is incorporated in the modeling. Describe how the forest inventory estimate has accounted for any harvests and/or disturbances that occurred in the previous year. Also include a section describing how the confidence deduction for statistical uncertainty was derived, and show that it was applied appropriately to the forest inventory.

### Actual Carbon in Harvested Wood Products

**REQUIRED:** In this section, describe the process (and the result) used to determine the actual amount of carbon in standing live carbon stocks harvested in the current year. Further, determine the amount of harvested carbon that will remain in wood products averaged over 100 years, in accordance with the requirements described in Appendix A.

### Quantifying Secondary Effects

**REQUIRED:** Describe the inputs and the result from calculating Equation 6.12 of the Forest Project Protocol Equation 6.12 quantifies Secondary Effect emissions resulting from shifting the anticipated land use conversion on the Project Area to other forest land.

# Calculation of GHG Reductions and Removals

## All Project Types

**REQUIRED:** According to Equation 6.1, and based on the information provided in Sections 4 and 5 of the Project Design Document, describe the methodology as well as the final result for determining the GHG Reductions and Removals. Provide the Forest Project Calculation Worksheet with all project data input.

# Reversal Risk Rating

## Reversal Risk Rating by Category

|  |  |  |  |
| --- | --- | --- | --- |
| **Risk Category** | **Source** | **PIA Only** | **PIA and Qualified Conservation Easement and/or Qualified Deed Restriction and/or Public Ownership** |
| Financial Failure | Default Risk – Remedies for reversals addressed in PIA | 5% (Default Value) | 1% (Default Value) |
| Illegal Forest Biomass Removal | Default Risk | 0% (Default Value) | 0% (Default Value) |
| Conversion | Default Risk – Remedies for reversals addressed in PIA | 2% (Default Value) | 0% (Default Value) |
| Over-harvesting | Default Risk – Remedies for reversals addressed in PIA | 2% (Default Value) | 0% (Default Value) |
| Social | Default Risk | 2% (Default Value) | 2% (Default Value) |
| Wildfire | Calculated Risk from worksheet | Click here to enter text.% (Must be supported per Appendix D Table D.7) or 4% (Default Value) | Click here to enter text.% (Must be supported per Appendix D Table D.7) or 4% (Default Value) |
| Disease or Insect Outbreak | Calculated Risk from worksheet | 3% (Default Value) | 3% (Default Value) |
| Other Catastrophic Events | Calculated Risk from worksheet | 3% (Default Value) | 3% (Default Value) |

## 

|  |  |  |
| --- | --- | --- |
|  | **Subordination Clause Type 2** | **Subordination Clause Type 1** |
| PIA Subordination Type | 10% | 2% |

## Project Reversal Risk Rating

**REQUIRED:** Show the calculation of the project’s reversal risk rating and contribution to the Buffer Pool per Appendix D of the Protocol.This should be calculated according to the following equation:

100% - (1-*Financial Failure%*) x (1-*IllegalForestBiomassRemoval%*) x (1-*Conversion%*) x (1-*OverHarvesting%*) x (1-*SocialRisk%*) x (1-*Wildfire%*) x (1-*Disease/InsectOutbreak%*) x (1-*OtherCatastrophicEvents%*) x (1-*PIASubordination%*)