CARBON OFFSET PROJECT ROAD MAP

NOTE: This document is available in A) electronic form on the OWEB web site @ http://oregon.gov/OWEB/docs/CarbonOffsetRoadmap-ProjectQuestionnaire.pdf and B) in a printable PDF form at www.esystemservices.com

ROAD MAP USER GUIDE

WHY: This Carbon Offset Project Road Map was designed to make the process of identifying and developing a carbon offset project less mysterious to those who are new to the field of carbon or only partially aware of the steps necessary to generate this new form of revenue for themselves or their organizations.

WHAT: A step by step road map that guides you from the initial identification of a bio-based carbon project through its final post transaction monitoring and verification. At each step along the way it provides "What questions you should ask", "What actions to take" and what "Key resources" (with links) you will need along the way.

HOW: The initial two steps on the road map are the most critical for most local watershed council and SWCD users of this guide as they are key to determining whether or not there is a viable project. The final steps to a transaction usually need the assistance of a project developer to bring the legal, technical and market expertise needed to complete a project.

WHO: Federal agencies (If nothing else to understand what opportunities your partners might have), state agencies, Soil and Water Conservation Districts, Watershed Councils. Conservation NGO's. Timber companies ranchers or any other land managers/ owners. Attorneys, foresters, appraisers, etc.

WHERE: This guide is principally focused on forest and soil based carbon sequestration projects in Oregon, though it generally applies to almost any geographical location in the northern hemisphere. It is particularly useful for projects in the coastal temperate rain forests and the rangelands of eastern Oregon.

KEY DEFINITIONS

Carbon Offset: A unit of measure (usually in increments of 1 tonne of a carbon based gas like carbon dioxide or methane) which allows a corresponding tonne of emissions released by an activity to be offset or neutralized by another activity. (Planting trees, capturing or reducing emissions elsewhere, etc)

Standards, Protocols and Methodologies: A series of carbon project guidelines, that has been internationally recognized, and which specifies how carbon is measured, what constitutes additionality and permanence, how the project is monitored / verified and when, etc. (See below)

Additionality: The standard that allows only carbon sequestered over and above what would have been if "business as usual" practices had been followed i.e. altering the future outcome through the carbon transaction itself.

Permanence: The standard that ensures that the additional carbon storage achieved by the project is not lost during the term of the agreement.

Monitoring and verification: Over time ensuring that there have been no changes in the land management plan or natural disturbances to the land. (e.g. fire, excessive harvest, grazing or tilling, change of use) that would change the amount of carbon storage guaranteed in the project.

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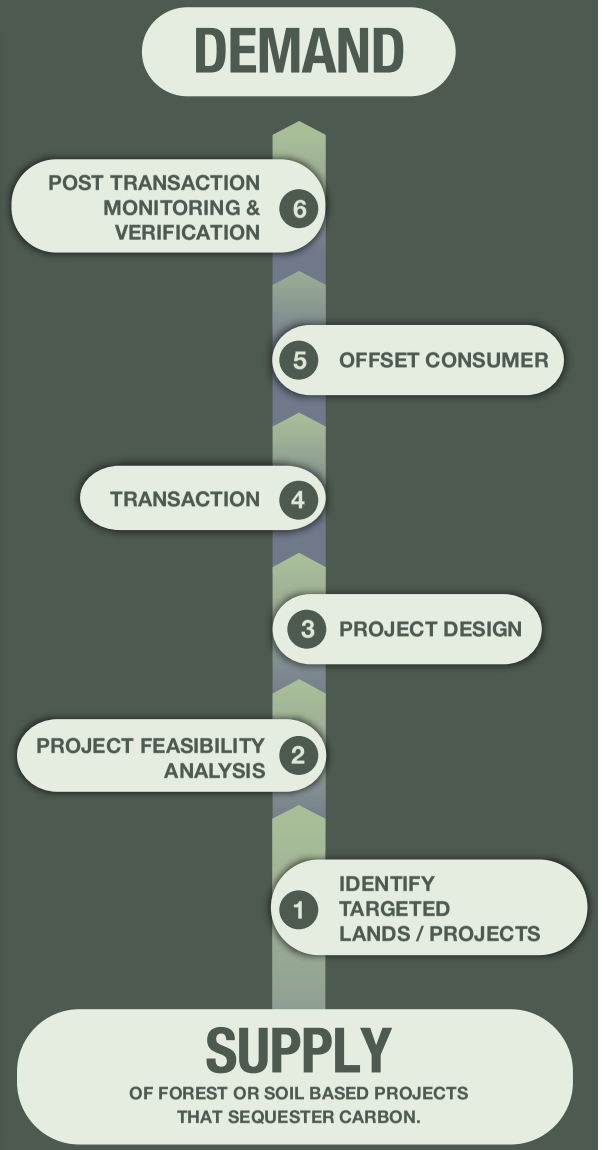


QUESTIONS TO ASK:

- **MULTIPLE VALUES?** Does the site or project in question have critical ecosystem values or other pressing needs (over and above) carbon sequestration that warrant the effort? High biological value, need for restoration, working landscape potential, a critical water source? Etc.
- **A DIFFERENT FUTURE?** Is there an alternative future for the land or project in question that increases CO2 sequestration by changing its long term management or use? Does it have a willing owner or manager?
- **RESOURCES?** Are additional financial resources needed to bring about change?
- **CONVERGENCE OF INTERESTS?** Are there multiple parties interested in the project? Listed in state or federal protection strategies, NGO's to partner with, critical riparian or terrestrial resources to be shared or sustained?
- **A MODEL?** Would the project provide a valuable model to inform management, restoration, decision-making or policy affecting other lands?

ACTIONS TO TAKE:

Initial research into land use history, acreage and/ or topography and riparian zones or other habitat, existing maps or LIDAR, tax lots/ ownership, and natural resource description, ESA listed species, adjacent lands, as well as possible partners, etc.

3 PROJECT DESIGN

PROJECT FEASIBILITY ANALYSIS 2

1 IDENTIFY TARGETED LANDS / PROJECTS

SUPPLY

OF FOREST OR SOIL BASED PROJECTS THAT SEQUESTER CARBON.

KEY RESOURCES:

- **"9 simple questions"** document that will help you determine the viability of a particular project or property. *(See Road Map appendix)*
- **County tax lot maps** for ownership, size and zoning. Google map (http://maps.google.com) or Google Earth (http://earth.google.com/) for recent images of natural attributes, roads, riparian areas, general topography, adjacencies, etc.
- **NGO's and other entities:** Ideal partners for identifying biologically valuable lands/habitats in need of restoration or purchase and in some cases aggregating carbon projects to reach the size necessary to market the offsets. (Nature Conservancy, Wetlands Conservancy, Defenders of Wildlife, local watershed councils and soil and water conservation districts, etc.)
- **Determine the biological significance** of the project location and/or species presence by cross-referencing to state and federal strategic protection plans; **A)** Oregon DEQ strategic source water protection plan; www.deq.state.or.us/wq/dwp/intro.htm. **B)** Oregon Conservation Strategy. www.dfw.state.or.us. **C)** Northwest Forest plan; www.fs.fed.us/r6/pdx/northwest-forest-plan.shtm. **D)** The Oregon Plan; www.oregon.gov/OWEB. **E)** Endangered Species Act and local ESA listed species and their ranges; www.fws.gov/endangered/ etc.

QUESTIONS TO ASK:

If the answers to the questions from Step #1 "Identification of Lands/ Projects" indicate a viable project then the next level of QUESTIONS are:

- **MANDATED?** Has the project been mandated by any legal or other regulatory requirement? If "yes" then stop the project development process as it will not qualify as an action creating "additional" carbon storage.
- **RESOURCES NEEDED?** Does the project require additional funding in order to be completed?
- **WILLING SELLER?** In the case of land acquisition is there a land owner(s) willing to enter into a purchase and sale agreement or in the case of a restoration project, other legal instruments, (such as an easement) for reasonable compensation?
- **DURATION?** Is it agreeable to all parties that the land and offset sales contracts include language that defines a predictable and consistent use of the property for a defined period of time? (No less than 20 years and up to 100 years)
- **RIGHT SIZE?** Is the property 500 acres or more in size in the case of a forest based acquisition project (Depending on location and species mix) or approx 1000 acres if a restoration project? (Or could the property in question be aggregated with adjoining properties to equal these totals?)
- **WHOLE SYSTEM HEALTH?** Will the project have a net positive effect on the natural system(s) in which it occurs?

3 PROJECT DESIGN

PROJECT FEASIBILITY ANALYSIS 2

1 IDENTIFY TARGETED LANDS / PROJECTS

SUPPLY

OF FOREST OR SOIL BASED PROJECTS THAT SEQUESTER CARBON.

ACTIONS TO TAKE

Project Developer:

- Decide whether to engage carbon offset project developer or not.

Valuation and Contracts:

- Run initial rough carbon sequestration calculation with the help of a project developer or quantification firm. (See *key resources*)
- Identify legal status of land/project: Conservation easement.
- Create a proposal / contract for land owner that outlines the carbon potential and cost to move forward and what rough per ton price they estimate the project's credits might bring on the voluntary market.
- Execute a non-binding contract with land owner.
- List the project on registry.
- Request existing documentation for lands/ projects. (Timber cruise, title report, mapping, etc.)
- Estimate quantity of carbon sequestered over time using new land management practices.

KEY RESOURCES:

- Ecosystem Services Project Criteria/ Questionnaire: This document is a proven method for identifying the feasibility of a forest or soil carbon project and its ecosystem service co-benefits. *(See Questionnaire doc to follow this road map)*
- Bio-Carbon Offset project developers: Choose whether to engage a developer to help you identify the viability of your project and run initial carbon quantification estimates, financial pro formas, etc. Some will do this for a fee others will "risk" their time to share in the final carbon offset sale dollars. **Ecosystem Services LLC;** www.esystemservices.com. **ClearSky Climate Solutions**; www.clearskyclimatesolutions.com. **Finite Carbon**; www.finitecarbon.com. **Equator**; www.equatorllc.com, **Ecotrust** www.ecotrust.org, etc.
- Research which standard best fits the needs of the project. **Climate Action Reserve**; www.climateactionreserve.org, **Voluntary Carbon Standard**; www.v-c-s.org/, **Climate, Community Bio-Diversity Alliance**; http://www.climate-standards.org/ etc.)
- The carbon offsets your project would generate will also need to be registered as there is a worldwide control on how many offsets can be traded. More on this under transaction.

QUESTIONS TO ASK:

If the answers to the questions from Step #2 "Project Feasibility" indicate a viable project then the next set of QUESTIONS are:

OWNER / MANAGER? Do you have an entity that wants to own or manage the land/project for the term of the contract?

TEAM MEMBERS? Have you chosen the key team members necessary to fulfill the functions for a successful project? (See *key resources*)

OFFSET BUYER? Have you identified an entity willing to purchase the carbon offsets?

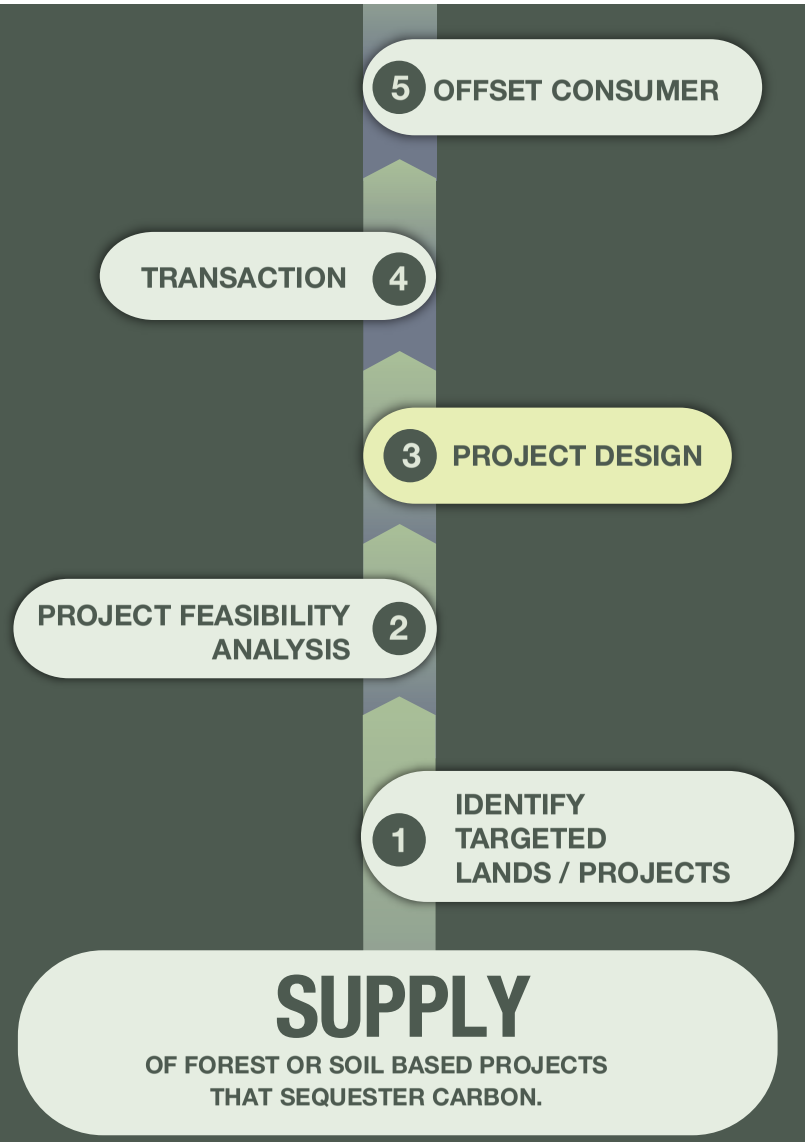
CARBON STANDARDS? Have you confirmed the standards, protocols and registry you will use for the project?

COSTS? Do you have an accurate calculation of all project costs organized into a project budget/ proforma including professional services (lawyers, foresters, quantifiers, project developers, etc) , expenses related to acquisition or restoration, project verification and monitoring, etc.

VINTAGE AND TONNAGE? Has there been a clear determination of the duration of the carbon sequestration and an independent verification/ carbon cruise of the overall tonnes of projected carbon to be sequestered?

ACTIONS TO TAKE

- Quantification: further documentation, mapping, site visits and calculations.
- Identify legal status of land/project: Conservation easement, management plan, purchase, etc.
- Encourage input from potential carbon buyers/wholesalers and land owner on project design.
- Determination of Additionality / Permanence / Verifiability. *(See definitions in appendix)*
- Finalize land management practices, monitoring and verification plan.
- Finalize standard to be used.
- Finalize carbon documentation.
- Finalize pro forma and project design,
  (Including all costs/income and ROI to all parties).



KEY RESOURCES:

- The team you identified in the feasibility phase; a carbon offset project developer / carbon offset buyer, potential land owner or manager and the entity whose carbon standards will be applied (see project developers/ buyers and standards list under "Feasibility/ Key resources" listing).
- A carbon cruise of the lands involved may be required (Jackson & Prochnau, www.timbercruising.com. Trout Mountain Forestry; www.troutmountain.com and/or references from Ecotrust, www.ecotrust.org or Pacific Forest Trust; www.pacificforest.org.
- A financial entity may be involved to provide assistance with a project pro forma and/ or to provide funding. (No specific listing)

QUESTIONS TO ASK:

You are now fully engaged in the final process leading to a successful project/ transaction. The next set of critical QUESTIONS TO ASK are:

- **THE RIGHT AGREEMENTS?** What form will the legal agreements take, both with the land owner and the offset buyer? Purchase and sale agreement? Easement? Emissions Reduction Purchase Agreement?
- **MANAGEMENT PLAN?** Is there a management plan that has been drafted and agreed to by all parties that specifically aligns with the carbon standards and protocols being applied?
- **COST VERIFICATION?** Have all $$ figures used in the project budget/ pro forma been verified by all parties, resulting in a final price per ton?

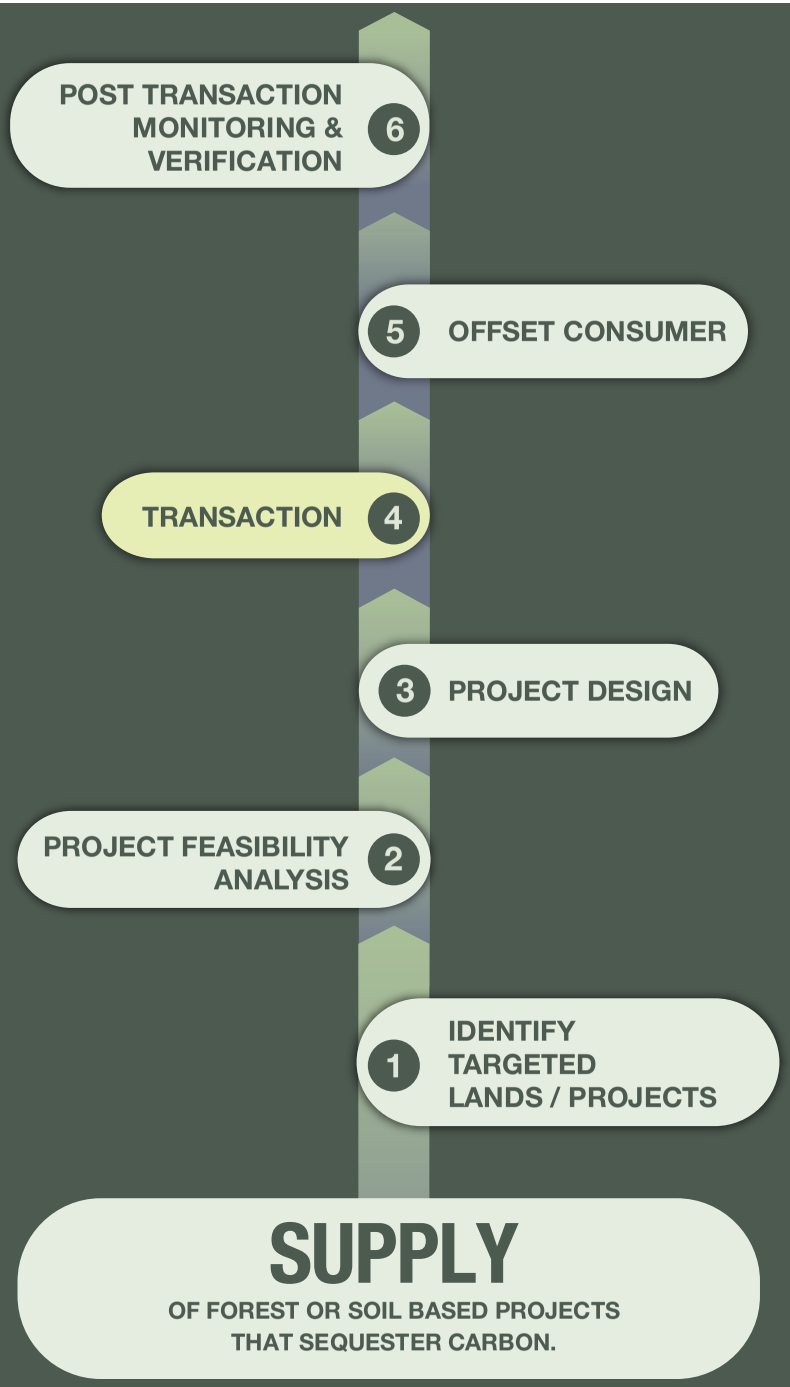
ACTIONS TO TAKE

TRANSACTION NEGOTIATED:

- Management plan in place that aligns with standards/ protocols.
- Separate legal reviews of ERPA / agreement by buyer and seller.
- Confirmation of the quantity of Carbon Emission Reduction credits to be delivered.
- Responsibility for monitoring and verification activities and costs settled.
- Schedule of payments agreed to.
- Registry placement determined.
- Consequences of non-delivery or other default events anticipated.

KEY RESOURCES:

- In addition to the project team outlined above you may need the services of legal counsel for the writing and/or negotiation of the Emission Reduction Purchase Agreement (ERPA = The contract through which the offsets are actually purchased) Lane Powell PS; www.lanepowell.com and Perkins Coie; www.perkinscoie.com.



QUESTIONS TO ASK:

The ultimate owner of the offset credits may be the land owner themselves, the project developer, or a business needing to offset emissions through a regulatory requirement, an investor who may intend to trade the offsets in a future market if their value increases.

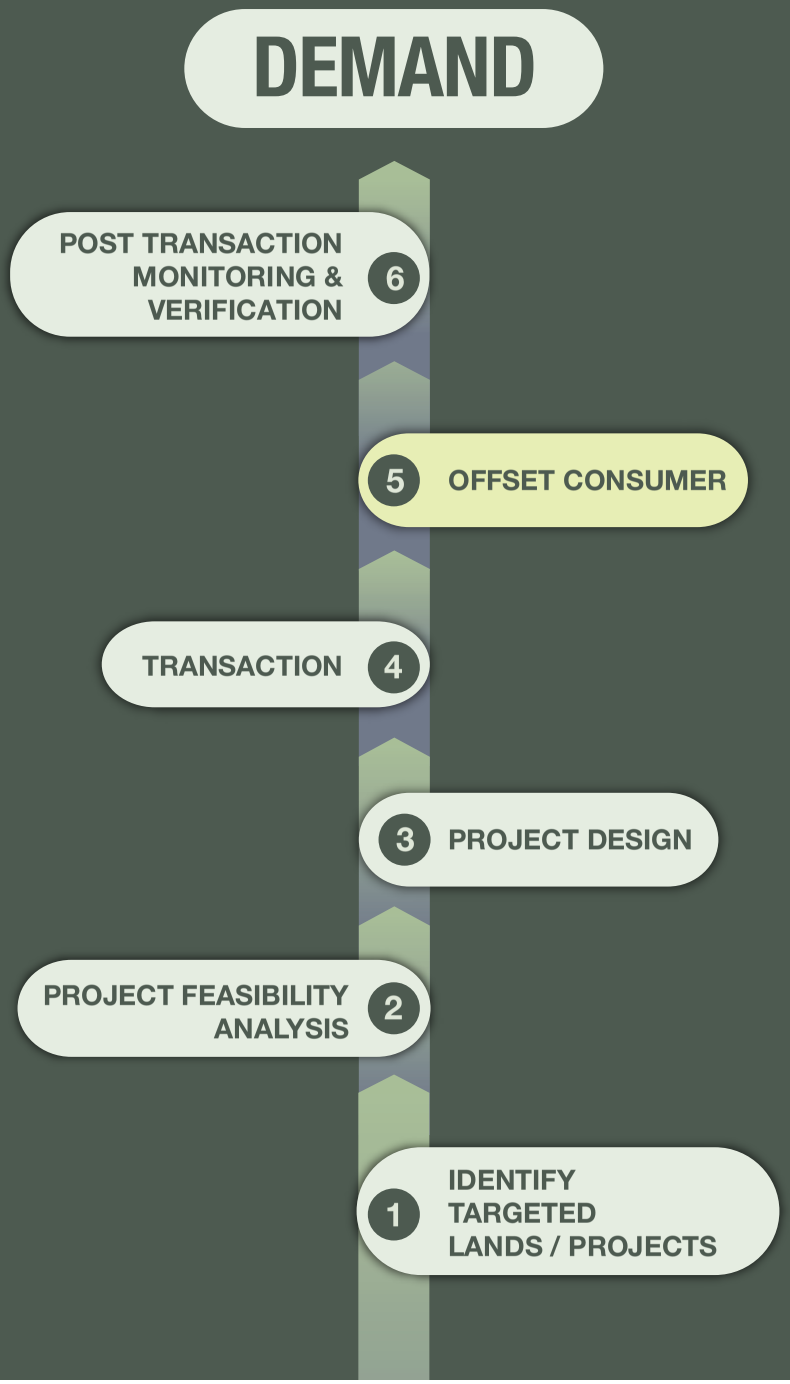
- What is the long term price future for carbon offsets?
- Does owning offsets fit into my overall investment strategy?
- What standards/protocols are being used to create the offsets and who are other prospective buyers using these standards?
- Will I need to invest in the project to get it certified?

ACTIONS TO BE TAKEN BY THE END CONSUMER:

- If the buyer is a wholesaler then offsets are listed on a registry site for sale.
- If purchase is direct then buyer may use the offsets to meet legal or regulatory requirements, use to market green image of the organization, or possibly sell the certificates in the open market at a later date.

KEY RESOURCES:

- Entities purchasing or arranging for the sale of carbon offsets. World Energy; www.worldenergy.net, Climate Trust of Oregon; www.climatetrust.org, ClearSky Climate Solutions; www.clearskyclimatesolutions.com Finite Carbon; www.finitecarbon.com, Equator; www.equatorllc.com. These entities will typically arrange for sale of the projects carbon offsets (Usually in minimums of 50,000 tonnes to 225,000 tonnes over the life of a project) and in some cases will offer upfront $'s to cover "pre-contract" costs.



QUESTIONS TO ASK

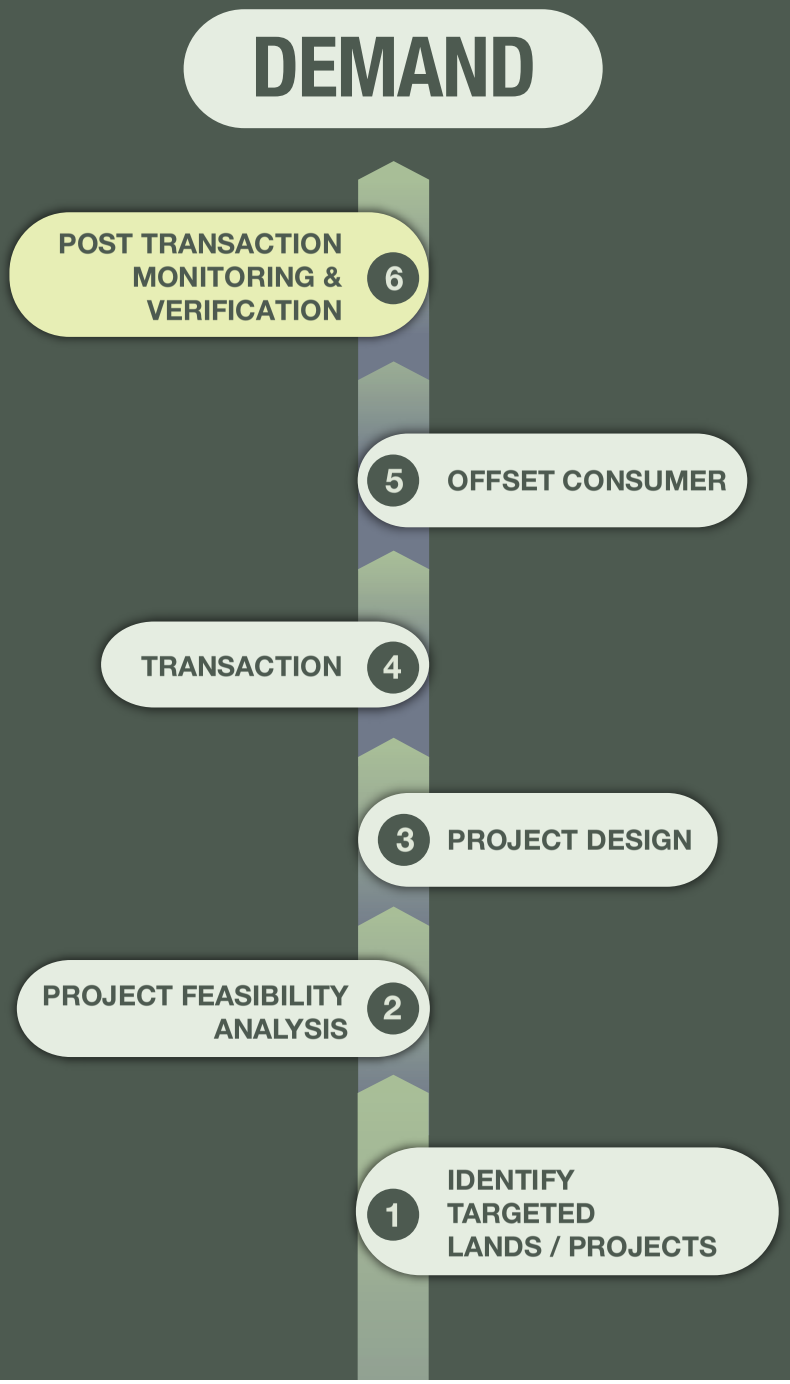
- What are the monitoring and verification requirements of the protocols used?
- Who will carry out these activities?
- Do the project design documents make it clear whose responsibility it is to assure these requirements are being met to standard?

ACTIONS TO TAKEN BY THE OFFSET BUYER, LAND OWNER AND/OR PROJECT DEVELOPER:

- The party responsible for the land/project manages it to fulfill the terms of the project design documents.
- The party responsible to provide independent monitoring and verification outlined in the agreement/contract pays for the assessments throughout the term of the agreement.

KEY RESOURCES

- VCS, CAR, CCBA, and ACR protocols (as previously listed).
- Certified verifiers as listed on all standards/registries as described above.
- Local land managers or experts who can provide information on best growth and sequestration land management practices.



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Forest Based Carbon Sequestration

PROJECT QUALIFICATION QUESTIONNAIRE

CONTENTS:

I. The nine foundational questions for identifying viable forest based carbon offset projects.

II. Forest based carbon sequestration projects.
(With a section on related ecosystem service co-benefits.)

III. Other bio-based carbon sequestration project types:
- Soil
- Wetlands

I. THE NINE FOUNDATIONAL QUESTIONS FOR IDENTIFYING A VIABLE FOREST BASED CARBON OFFSET PROJECT:

#1) Has the project been mandated by any enforced law, statute or other regulatory framework?

#2) Does the project require additional funding in order for it to proceed?

#3) Would the future use of the property be altered from current "business as usual" and would this increase its capacity to store carbon?

#4) In the case of land acquisition is there a land owner(s) willing to enter into a purchase and sale agreement or other legal instrument, (such as an easement) for reasonable compensation?

#5) Would it be agreeable to all parties that this contract include language that defines a predictable and consistent

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use of the property for a defined period in the future? (No less than 20 years and up to 100 years)

#6) Is the wooded property 500 acres or more in size ?(Or could
the property in question be aggregated with adjoining properties
to equal 500 acres or more)

#7) Is the project/ property in question accessible for annual
monitoring and verification activities?

#8) Is there current land information available such as timber cruises, appraisals, etc?

#9) Will the project have a net positive (or neutral) effect on the natural system(s) in which it occurs ?

II. FOREST BASED CARBON SEQUESTRATION PROJECTS

A. QUESTIONS TO CONSIDER WHEN DETERMINING IF A CARBON OFFSET TRANSACTION IS VIABLE:

Property Owner:

- What is the motivation of the property owner to do a deal?
- Is the owner more motivated by financial, conservation, values?
- How much does the deal financially benefit the owner?
- Does the owner understand the basic principles of the deal and will they need legal advice on contracts?
- Does the owner have complete control over the property?

Wholesaler:

- Does the deal meet requirements of a potential wholesaler?
- What is the time frame for the purchase of the offsets?

- Is the wholesaler interested in co-benefits and will it result in additional dollars for carbon?
- How far forward will the wholesaler sell/buy?
- Will the wholesaler fund upfront the cost of getting the offsets "market ready" IE project feasibility and design?
- What is the "price target" they will place on the offsets?(and their potential co benefits?)

Standards:

- What standards will be applied?
- Is this moving into the voluntary or compliance markets?
- Will the sequestration be additional according to VCS or CAR standards?
- Is the carbon sequestered verifiable (access to property, timber cruise data, and other records)?
- Is permanence for the duration of the contract achievable?
- Has the leakage potential for the project been calculated?
- Who will be responsible for verification and monitoring for the full term of the contract?

Financial Considerations:

- What are the costs of preparing the offsets for market?
- What is the projected monetary value of the carbon sequestered as determined by wholesaler?
- Is the value of the carbon greater than the costs of the deal?
- Is there carbon value immediately?
- What is the proposed term for the sequestration agreement?
- Is there an opportunity to use Forest Stewardship Council value as an incentive?
- Are there potential complementary financing sources?

B. <u>PROPERTY CHARACTERISTICS:</u>

Property Name: _____

General Location: _____

Site location coordinates: _____ / _____

Tax Lot # _____

General Property Description: _____

_____

_____

Contact Info for Property Owner: _____

_____

Summary of why this property is a viable candidate for a carbon offset transaction: _____

_____

_____

_____

Ownership Category:

____ Private Individual

____ Industrial Timber

____ Developer

____ Small Woodlot

____ Agriculture

____ Public Land

What conditions are present?

____ Riparian

____ Landslide prone

____ Older intact forest

____ Along a fish-bearing stream

____ Headwater stream headwall

____ Is property contiguous with or abutting lands being managed for conservation?

____ Is it an in-holding in publicly-owned lands?

C. PROJECT CHARACTERISTICS:

Type of Project:

____ Aforestation

____ Reforestation

____ Improved Forest Management

____ Avoided Deforestation

____ Riparian plantings

Deal Type:

____ Purchase

____ Easement

____ Timber Contract

____ Other Contract

Standards & protocols used to assess the project (list all):

_____

_____

_____

Proposed Project start date: _____

Proposed Carbon crediting period (month/year):

From: _____To: _____

Project size (# of acres): _____

Amount of carbon sequestration the project is expected achieve (measured in metric tons of CO2 equivalent:

(MTCO2e): First year: _____Total over Project time_____

D. Identification of forest based carbon sequestration's related ecosystem service co-benefits

What is the range of ecosystem co-benefit categories present?

Provisioning services:

____ Foods (including seafood and game) and spices

____ Precursors to pharmaceutical and industrial products

____ Energy (hydropower, biomass fuels)

Regulating services:

____ Carbon sequestration and climate regulation

____ Waste decomposition and detoxification

____ Nutrient dispersal and cycling

Supporting services:

____ Purification of water and air

____ Crop pollination and seed dispersal

____ Pest and disease control

Cultural services:

____ Cultural, intellectual and spiritual inspiration

____ Recreational experiences (including ecotourism)

____ Scientific discovery

Preserving services:

____ Genetic and species diversity for future use

____ Accounting for uncertainty

____ Protection of options

Which specific eco system service values will it deliver?

____ Water temperature

____ Water quantity or quality

____ Aquatic or terrestrial habitat

____ Bio-Diversity

____ Viewscapes

____ Recreation/ Tourism

____ Other

What is the valuation and alignment of ecosystem service?

____ Are the eco-values/co-benefits such that they can be monetized for sale?

____ Have the eco-values/co-benefits been assessed using CCBA or some other standard?

____ Will the project advance the stated goals of one or more state agencies or participating NGO groups

IV. OTHER CARBON SEQUESTRATION PROJECT TYPES:

Soil: Soil has powerful carbon sequestration capacity. Unfortunately when compared with their forest based counterparts robust, high quality standards and markets for soil based carbon offsets are still emerging and will require additional practical case studies and the development of methodologies that give confidence to the market that the carbon offsets being delivered will actually be stored in the soil.

Wetlands: Wetlands are also capable of sequestering high volumes of carbon. They too are in their infancy in terms of standards and markets but due to their high biological value provide extra incentive for these to be developed rapidly.