

BRIEFING MEMORANDUM

OFFSET RECOMMENDATIONS

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Introduction

The Governor's Carbon Policy Office and the Joint Interim Committee on Carbon Reduction are working to develop a carbon pricing program for Oregon as part of a comprehensive strategy for mitigating greenhouse gas (GHG) emissions. Natural and working lands can make an important contribution to climate mitigation. Increased sequestration and reduced emissions from the land sector can be delivered through offset projects and management actions supported through incentive programs, where:

Offsets: Carbon offset projects reduce emissions of carbon dioxide and other greenhouse gases in unregulated sectors. Offsets projects can deliver economic, environmental, and social benefits beyond climate mitigation. Offsets include a range of project types that are developed according to approved offset protocols. There are two types of offset markets:

Compliance offsets – where an entity regulated under a cap and trade carbon pricing program purchases offset credits to help them meet their compliance obligation.

Voluntary offsets – where individuals, companies, or governments voluntarily purchases credits to help meet their greenhouse gas reduction goals.

Compliance offsets are one of three options for regulated entities to meet their compliance obligations under a Cap and Trade style pricing program – (1) direct emission reduction through changes to equipment or processes, (2) purchase of allowances from regulated entities who can reduce emissions below their compliance obligation, and (3) purchase of compliance instruments from offset projects. Offsets projects often provide a less costly approach to meeting compliance obligations; thus, serving as a cost containment mechanism.

Incentive Programs: Depending on their design, some carbon pricing programs generate revenue that can be invested in a variety of actions to reduce GHG emissions and/or improve resiliency in natural and working lands. Carbon pricing legislation considered during the 2018 Legislative Session proposed to dedicate twenty percent of the revenue generated through auction proceeds to natural and working lands.

Offset and incentive programs can both play a role in an overall strategy for mitigating climate change. Ideally, they should be designed to be complementary and reinforcing.

The Carbon Policy Office (CPO) convened a Natural and Working Lands Work Group to provide recommendations on the development and design of natural and working land offset and incentive programs to maximize their benefits to Oregon landowners and managers¹. The Nature Conservancy and the American Forest Foundation convened a smaller work group (represented by the authors of this paper) to provide background and recommendations regarding offsets to the CPO, legislators and the Natural and Working Lands Work Group. We developed a set of principles to guide our review and recommendations (Appendix 1). Specifically, we provide recommendations regarding:

- provisions related to offsets [in Senate Bill 1507A](#) considered in the 2018 Session;
- development, design implementation and management of compliance offset program and protocols for Oregon; and

¹ Linkage to the Western Climate Initiative does not require jurisdictions to adopt existing offset protocols and incentive programs.

- background and specific recommendations regarding forest carbon offset protocols and incentive programs.

Overview of Existing Offset Protocols

As described above, there are two types of carbon markets: voluntary and compliance. Currently, there are about 80 approved protocols for use in voluntary marketplaces globally. The protocols include practices in a range of emission reduction sectors such as energy, livestock, agriculture, wetlands, mining, industrial processes, and waste management. The largest number of approved protocols is in the forestry sector, which includes reforestation, improved forest carbon management and avoided conversion. In the United States, three Offset Project Registries operate voluntary offset markets – American Carbon Registry (ACR), Climate Action Reserve (CAR), and Verra (formerly VCS). Each registry develops detailed methods and procedures for quantifying the GHG benefits of voluntary offset projects.

There are two U.S. compliance offset markets, one associated with California’s Cap and Trade program and one associated with the Regional Greenhouse Gas Initiative that operates in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Offsets have rarely been used in the latter.

The California Air Resources Board (ARB) approves protocols for their compliance market and requires offset projects to be registered through one of the three registries mentioned above. There are currently six approved California compliance protocols available for use. These include forestry, urban forestry, livestock, ozone depleting substances, mine methane capture, and rice cultivation. Avoided conversion, reforestation and improved forest carbon management are eligible activities within the forestry protocol. To date, ARB has issued approximately 140 million offsets, with approximately 111 million (80%) forestry offsets.

Offset protocols provide the instruction manual to help project developers determine project boundaries, set baselines, assess additionality and ultimately quantify the GHG emissions credits² the project will produce. There are two main steps in protocol development:

Evaluating the eligibility of a project type: Potential offset types need to either reduce emissions or increase sequestration and meet the following criteria –

Originate from an Uncapped Sector - Does the activity occur outside of an economic sector that is regulated under the cap?

Produce a Direct Reduction - Is there a clear chain of custody showing that the project operator clearly has control over the reduction/increased sequestration?

Meet an Additionality Test - Can a clear case be made that the emission reduction/increased sequestration activity is voluntary, faces implementation barriers, and/or is not a common practice in the sector?

Have Accurate and Cost-Effective Measurement and Monitoring - Can methods be developed to accurately measure, and cost effectively monitor the emission reduction/increased sequestration?

Produce Co-benefits - Does the emission reduction/increased sequestration activity generate positive environmental, social and/or economic benefits or avoid causing environmental or social harm?

² A carbon credit, or offset, is an instrument generated when one metric ton of carbon dioxide is avoided, sequestered or removed from the atmosphere.

Following an Offset Protocol Development Process: The Climate Action Reserve uses a transparent process to develop and approve new protocols that includes research, public scoping, expert working groups, and public workshops (Figure 1).

Figure 1: Offset Protocol Development Process (Climate Action Registry)



Offset Recommendations

Below we highlight potential issues and provide recommendations on changes to the existing language in Senate Bill 1507A followed by more general recommendations regarding the design of an Oregon offset program.

Recommendations Regarding Offset Provisions in Senate Bill 1507A (2018).

Direct Environmental Benefits – Section 17(2)(a) limits a regulated entity’s use of offsets to no more than eight percent of their compliance obligation and requires that “no more than four percent of a covered entity’s compliance obligation may be met by surrendering offset credits that are sourced from offset projects that do not provide direct environmental benefits in this state.” We appreciate and support the intent of this provision but caution that it may result in a Dormant Commerce Clause issue and subject the bill to legal challenges. If the provision is retained in the bill, we recommend that you clarify the definition of the air quality environmental benefit by changing Section 12(11)(a) to say, “A reduction in, or avoidance of any air contaminant in Oregon other than those solely considered contaminants based on their classification as a greenhouse gas.”

Offset Usage Restrictions – We appreciate and support the intent of Section 17(2)(b) but caution that this provision could result in offset purchasers including “opt out” provisions in purchase agreements with offset sellers. This could lower project owner and developer confidence in the compliance market. In addition, assuming linkage with Western Climate Initiative (WCI) is an interest, operationalizing this policy could require Oregon to build additional functionality into WCI’s Compliance Instrument Tracking System. Striking this provision would eliminate both issues.

We recommend Oregon explore other more direct methods for addressing local air quality violations. If the provision is retained, we recommend narrowing Section 17(2)(b) to violations of terms and conditions specifically associated with the level of pollution emitted.

Offsets Governance – Section 17(3)(c) requires Department of Environmental Quality (ODEQ) to consult with the Department of Agriculture (ODA) and the Board of Forestry in developing rules for offset protocols. We recommend that the Board of Forestry be changed to the Department of Forestry (ODF). Further, we recommend that the state consider assigning the design and management of offset protocols for their respective sectors to ODA and ODF. This would avoid the need to hire additional forest and agricultural expertise in ODEQ and result in a more seamless connection/communications

path between the offset protocols and other forest and agricultural programs and policies. In developing and updating protocol, we recommend the agencies be directed to use third party contractors such as one of the Offset Protocol Registries and involve additional technical experts in carbon offset project development and verification. In addition, the process should be transparent and allows for significant public involvement.

Invalidation – Section 17(3)(d) directs ODEQ to develop a process to invalidate offsets. Less than one tenth of one percent of offsets have been invalidated in California, but offsets are priced at a discount of 15-20% to allowances, largely because of invalidation risk. We recommend that Oregon avoid California’s approach to invalidation. It is a deterrent to participation in the offset market. It would also work against the objective of Section 17(3)(b) which encourages aggregation. California’s invalidation approach requires each project to register individually.

Instead, we recommend the legislation include direction to establish an Environmental Integrity Account buffer (as was done in [Quebec](#) program) that would hold a three percent of offsets issued from each project. If ODEQ subsequently found that a project violated an environmental, health or safety law, or if offsets were over-estimated, the appropriate number of offsets could be cancelled from the Environmental Integrity Account. This approach would provide project developers and owners confidence that they won’t be unduly penalized from their offsets because of minor infractions that have no bearing on offset generation or are actions that may be outside of their direct control. It would also allow project developers and landowners to capture more value from the offsets they generate as the reductions in sellable offsets would more than be made up by offset prices that trade at a lesser discount to allowances than what we see in California. Direct action against a seller should only be used in cases of cases where a seller has engaged in double selling.

If Oregon decides to follow the California approach we would recommend the timelines be shortened and the reasons for invalidation be limited and more explicitly described.

Aggregation – Project development costs make it financial challenging for owners of small land holdings to participate. We support the inclusion of direction to develop methods that allow for project aggregation.

Recommendations Regarding the Mechanics of an Oregon Offset Program. In addition to the comments above, we recommend Oregon consider the following regarding the mechanics of an Oregon offset program.

Rely on Existing Offset Market Infrastructure – Carbon offset project certification standards have existed in the United States for well over a decade. Offset Project Registries, such as the American Carbon Registry, Climate Action Reserve and Verra have played a critical role in the review and issuance of offset credits in the California compliance and voluntary markets. They run a smooth and efficient process for overseeing independent third-party verifiers and issuing carbon credits. However, the California Air Resources Board’s (ARB) final project by project review process causes long delays in the final approval and issuance of credits. Such delays undercut confidence in the market, create duplicative costs for all participants in the system and deter participation in the program.

We recommend Oregon also rely on accredited verifiers and Offset Project Registries as a critical part of a compliance offset market system. In addition, rather than having the state offset program administrator review each project prior to issuing credits, we recommend the state establish a well-

designed accreditation and auditing process for Offset Project Registries and auditing process for projects including procedures for addressing unsatisfactory audits.

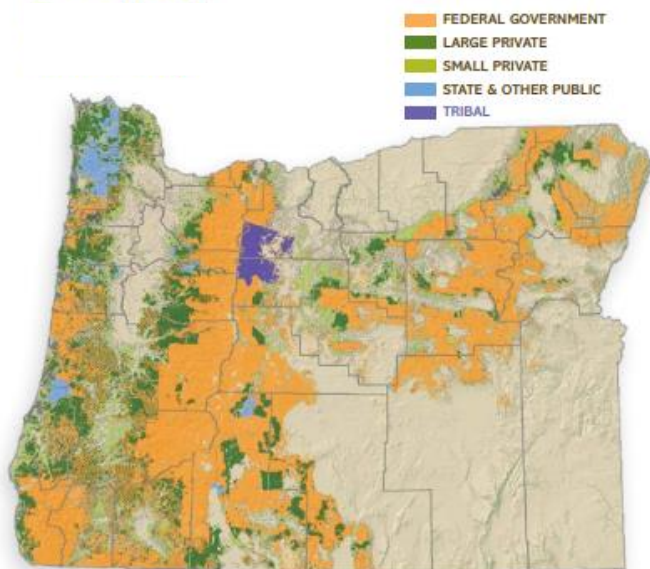
Commit to Transparent Timelines – We recommend Oregon’s offset system provide and adhere to clear timelines and deadlines for review and issuance of offsets; a meaningful and clear materiality threshold for requesting additional information from the project developer and/or offset project registry; and a clear timeline on how long the additional request will extend the review timeline.

Regularly Update Compliance Offset Protocols to Improve Efficiency: In recent years, governments worldwide have increasingly turned to voluntary carbon market offset protocols to inform the development and improvement of compliance protocols. Voluntary carbon market programs have more flexibility than compliance markets. This flexibility has led to innovations that improve and streamline procedures and reduce transaction costs. We recommend Oregon monitor and evaluate improvements being considered in other jurisdictions and by voluntary carbon market programs. In addition, we recommend Oregon develop a schedule with a set frequency for assessing and adopting improvements to offset protocols based on experience here and elsewhere, as new research is published, and as new technologies are developed that can be used to increase efficiency and reduce costs.

Forest Offsets Recommendations

Overview of Oregon Forest Ownership. Forests cover about two-thirds of Oregon – nearly 30 million acres overall. These lands are managed by the federal government, state agencies, county and municipal governments, private landowners and Tribes (Figure 2).

Figure 2: Forest Ownership in Oregon (Oregon Forest Resources Institute. 2017. Oregon Forest Facts, based on data from the Oregon Department of Forestry.)



Private lands are divided into large and small ownerships and by type of owner forest landowner: Industrial or “Corporate” Private Forests – forest landowners generally with larger holdings and full-time management staff and Non-Industrial Private or “Family Forests” – forest landowners generally with smaller forest holdings and no full-time staff. Corporate owners control approximately 6.3 million acres in Oregon. Approximately 45,000 Family Forest owners control about 3.6 million acres. About 77 percent of the Family Forest lands are owned by people 55 years and older.

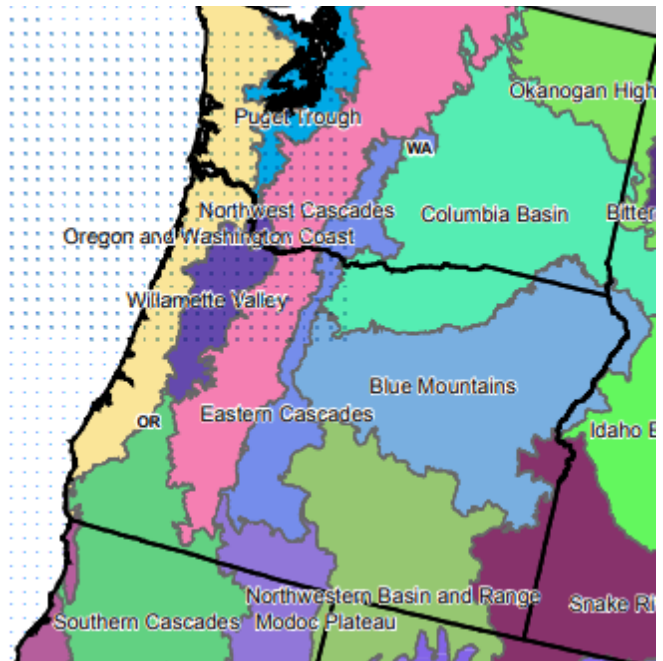
Different landowners have different financial and land management goals, objectives and constraints that need to be considered in designing offset and incentive programs. Current forest carbon programs, both compliance and voluntary, do not effectively serve Family Forest

owners with holdings under 5,000 acres for a wide-range of reasons, including complexity of program rules, cost to participate, and legal risks.

Overview of California Air Resources Board (ARB) Forest Compliance Offset Protocols. Currently, California ARB's forest protocols are available for use in Oregon for projects that improve forest management, prevent conversion, and/or reforest understocked forest stands. Excerpts in quotations below are from the [ARB's 2015 U.S. Forest Projects Compliance Offset Protocols Manual](#).

Improved Forest Management – Pays a project owner for credits generated through management activities that maintain or increase carbon stocks on forested land relative to a baseline level of carbon stocks on the property. The project owner is compensated for any carbon stocks in excess of a “common practice value” and for any growth over time in the net carbon compared to the baseline for the property. Common practice values are defined as the average carbon stocks within assessment areas (Figure 3) with similar vegetation, market, and regulatory conditions. To be compensated for the carbon above the common practice value, a project owner is required to demonstrate that: they can legally harvest the property back down to the common practice value (e.g. harvest is not legally constrained by a conservation easement or federal or state laws or regulations) and that that harvest would be financially viable (Appendix 2).

Figure 3: [FIA Common Practice Value Assessment Areas](#) (California Air Resources Board 2014).



Non-federal public project owners are credited for the difference between standing carbon stocks and a baseline value determined by projecting future changes to carbon stocks based on an assessment of historic forest management trends or how current public policy will affect onsite carbon stocks, whichever results in the highest carbon value.

Avoided Conversion: Pays a project owner for credits generated “by dedicating land to continuous forest cover” that was otherwise at “significant threat of conversion of project land to a non-forest land use.” Appraisals are required to prove conversion pressure. The lands must be protected by a qualified conservation easement or transfer to public ownership, excluding transfer to federal ownership. The project owner is credited for the difference between standing carbon stocks and a baseline loss of stocks prescribed by conversion type and amortized over ten years.

Reforestation: Credits or pays a project owner that restores tree cover on land that they are not otherwise required to reforest by law and that is “below optimal stocking levels and has minimal short-term (30-years) commercial opportunities. To be eligible under this protocol, a reforestation project must involve tree planting or removal of impediments to natural reforestation, on land that: has had less than 10 percent tree canopy cover for a minimum of 10 years; or has been subject to a significant disturbance that resulted in a loss of at least 20 percent of the land’s above-ground standing live tree biomass.” The project owner is credited or paid for stocking increases.

Only two landowners in Oregon have developed ARB Improved Forest Management projects – the Confederated Tribes of the Warm Springs and Green Diamond Resource Company. There are a several reasons for the limited participation in ARB’s forest offset program. These include:

Permanence requirement – California’s compliance forest offset protocols require projects to commit to a 100-year permanence period following offset issuance. In practice, the commitment for most offset projects is at least 120 years.

Forest Inventory Requirements – ARB’s forest inventory requirements are time intensive and expensive.

Monitoring & Reporting Requirements – ARB’s monitoring and reporting requirements are intensive and expensive.

Verification Costs – ARB’S Forest Offset Protocols have burdensome verification requirements, including sequential sampling, which calls for plot level stock estimate verification rather than forest-level stock estimate verification. Further, verification reviews are not sufficiently focused on items of greatest risk to the project.

Invalidation – Offset credits have an eight-year invalidation period, during which ARB can reach back in time and invalidate credits. Reasons for invalidating credits can include minor violations and/or overestimates of carbon stocks.

Environmental Safeguard Eligibility Criteria – Some of the environmental safeguard eligibility criteria contained in [ARB FOB Table 3.1](#) were designed with California forests in mind and are not well-suited for some of Oregon’s forest types.

Common practice values – The regions used to define “common practice values” for carbon stocks group some southwestern Oregon forests with some southeastern Oregon forests. The ecological characteristics of these forests and associated management practices differ across this region.

Recommendations for Oregon Compliance Forest Protocols. In addition to the recommendations provided above regarding offset protocols in general, we recommend the following regarding Oregon forest specific protocols:

Environmental Safeguards – As a base eligibility requirement, all forest offset projects would be required to follow all laws applicable to Oregon forests (such as the Oregon Forest Practices Act). Oregon could consider additional environmental safeguards, such as those in existing forest certifications (FSC, SFI, or ATFS), which include prohibitions on planting non-native species and require all property held by a landowner to be sustainably managed. Environmental safeguards, if included in a forest protocol, should use customized criteria for each of Oregon’s major forest types.

Options for Project Modification – Oregon should adopt protocols with flexibility to remove acres from a project, for the purpose of sale or exchange, without causing the entire project to terminate. This should be considered for other land offset project types that have a long permanence period. This is already an option in some voluntary agriculture projects. Such a provision would signal to landowners that they have flexibility to modify the project boundary without undercutting the integrity of the entire project. Reliable procedures could be created to calculate the volume of offsets attributable to the acres being

removed and require a commensurate number of compliance instruments be supplied in their place, including from parcels owned by the project proponent.

Inventory of Carbon Stocks – Inventory of Carbon Stocks – Oregon should consider adopting protocols that rely on inventory methods commonly used by forest landowners for making management decisions and/or relied upon by financial institutions and investors for transacting forest land parcels. Currently, to meet the ARB Forest Offset Protocol inventory verification requirements (sequential sampling), forest landowners complete expensive new inventories designed to increase the likelihood of passing field verifications. These inventories are only suitable to meet carbon project requirements, rather than for use in day-to-day management planning and decision making. This adds cost and complexity as two separate inventories must be maintained and updated over time.

Monitoring and Reporting Methods/Timing – Monitoring and reporting requirements can add significant cost to a project without providing commensurate value to the offset buyer or regulator. After the initial verification, Oregon should adopt options for monitoring including the use of proven remote sensing techniques. Timing requirements for monitoring and reporting should be flexible and based on the project type and risk profile. For example, if a project is not monetizing offsets for a period of years, monitoring and reporting requirements could be minimized.

Recommendations Specific to Individual Forest Protocol Types. We recommend the following regarding development of:

Improved Forest Management (IFM) Protocols: There is substantial opportunity for increased forest carbon storage in Oregon, especially in forests west of the Cascades. We recommend the state consider the following modifications to provisions used by ARB in developing an IFM protocol for Oregon.

Regional boundaries for determining common practice values – We recommend that the regional boundaries used in Oregon to define common practice values be revisited that take into consideration the different forest types and management practices for Oregon’s west- and east-side forests.

Leakage – An essential requirement for demonstrating the environmental integrity of any offset system is to be able to confidently state that offsets are being conservatively credited. In the case of forestry, projects that reduce the level of timber harvest could result in “leakage” or increased harvest elsewhere to meet demand for fiber. For example, with some projects timber harvest may be reduced in the near-term but increased in later years resulting in no net leakage over the life of the project. How to best address leakage in offset projects is an active discussion and needs to be considered thoughtfully in the development of rules for any forest offset protocols.

Reforestation Protocols – The Oregon Forest Practices Act does not require landowners to replant following wildfires unless timber has been salvage logged. In addition, some previously forested lands in Oregon have been converted to other land uses. Reforestation can play an important role long-term in increasing Oregon’s carbon stocks. Existing reforestation protocols are not widely used. Oregon should develop reforestation protocols that allow for ex-ante or forecasted crediting for a portion of projected credits over the first twenty years, with the remaining portion issued ex-post or as accrued. Reforestation costs are high; paying landowners in advance for a portion of their projected credits would make this practice more attractive to landowners. In addition, increased soil carbon resulting from reforestation should be credited.

Avoided Conversion – While Oregon’s land use laws minimize conversion of forests to urban and suburban development, they do not prohibit conversion of forests to agricultural uses. Oregon may want to evaluate the rate and potential scope of this type of conversation and consider developing offset protocols that allow interested landowners to generate carbon offsets by dedicating land to continuous forest cover.

Urban Forest Protocols – Urban forests and trees provide a wide range of environmental benefits to cities and towns across Oregon. Existing voluntary offset methodologies are not widely used, and the ARB’s Urban Forest Compliance Protocol has never been used due to its high cost and complexities. Oregon could benefit from developing an urban forest protocol that is simple, cost effective, and credible. We recommend that Oregon work with other jurisdictions to develop an Urban Forest protocol. City Forest Credits, a non-profit based in Seattle, recently developed voluntary protocols for city forests and trees that could be used as a starting point for an Oregon urban forest offset protocol. Alternatively, Oregon could direct incentive programs to increase tree planting in urban areas.

Forest Incentive/Investment Programs

Auction proceeds generated through California’s Cap-and-Trade Program have been invested in healthy soils programs, wetlands restoration, prescribed fire and forest health treatments that stabilize carbon stored in forest trees and soils, control of pests and pathogens such as sudden oak death, dairy digesters and other manure management practices, climate adaptation/resilience projects including preparation for sea level rise, urban greening projects and protection of agricultural and forest lands from conversion among other natural and working land sequestration and avoided emissions strategies.

Senate Bill 1507A proposed to dedicate 20 percent of any auction proceeds in the Oregon Climate Investments Fund to projects, programs or activities that represent investments in natural and working lands. It further described that funds in the Climate Investment Fund and the Transportation Decarbonization Investments Account could be invested in the following types of natural and working lands activities: “agricultural or forestry practices that reduce greenhouse gas emissions or promote carbon sequestration, restoration of tidal marsh or intertidal areas of estuaries, irrigation efficiency projects, riparian zone restoration projects and methane recovery”... and “funding to strengthen the resilience of fish, wildlife and ecosystems in the face of climate change through investments in projects, including but not limited to projects involving instream flow acquisition and protection, fish barrier removal, habitat restoration and enhancement and protection of wildlife corridors, cold water refugia areas and species strongholds.”

Incentive programs can be particularly helpful in engaging Family Forest owners with smaller acreages that are unable to participate in offset programs. An Oregon incentive program could be designed to complement a state forest carbon offset program and expand the uptake of forest practices that mitigate climate change. Landowners could be incentivized to plant trees following wildfires or in understocked stands, extend rotations or increase stream buffers to increase carbon stocks on their land. Also, an incentive program could be designed to increase Family Forest landowners’ participation in state compliance offset program by covering the upfront entry costs. In California landowner’s who participate in an incentive program are also eligible to participate in the state offset program. We recommend Oregon consider the same approach.

The State should use existing applicable grant and loan programs and Oregon’s existing technical assistance infrastructure to the greatest extent possible to invest auction proceeds in natural and working land strategies that increase carbon sequestration. The Oregon Department of Forestry, Oregon

Department of Agriculture and the Oregon Watershed Enhancement Board have significant experience investing in natural and working land practices. All three agencies work collaboratively with federal agencies and programs (e.g. Natural Resources Conservation Service’s Conservation Stewardship Program and the U.S. Forest Service’s Forest Legacy Program) to maximize outcomes for Oregon and Oregon landowners. All also encourage private investments in projects. Private-public partnerships are viewed positively by Family Forest landowners; as such, we recommend the state consider block grants to not-for-profit (NGO) and quasi-governmental organizations to match public funds with corporate and foundation funds.

With respect to Oregon forests, the [Oregon Watershed Enhancement Board](#) has broad authority to invest in forest habitat protection and restoration, reforestation, and technical assistance to landowners. The Board also supports technical assistance and natural and working lands project providers including – Soil and Water Conservation Districts, Watershed Councils and to a lesser extent, Land Trusts and other NGO’s. These entities work with private landowners across the state to change management practices and/or protect forest habitat. The Oregon Department of Forestry lists 14 separate [Financial Incentive Programs](#) that could also be good vehicles for investing carbon pricing revenues. These programs are currently funded with federal dollars and may be appropriate to receive state funds as leverage.

While the state and federal programs referenced above were originally developed for other purposes, many have GHG emission reduction co-benefits. Because the agencies and organizations are already managing programs that can be used to increase or stabilize carbon stocks, Oregon won’t need to build new programs and infrastructure for investing incentive funds. For forests, we recommend prioritizing the following programs for early implementation:

1. Provide funding for ODF’s Forest Resource Trust Program that provides cost-share to assist private landowners reforest and improve land management.
2. For forest resiliency and adaptation, provide funding for ODF’s Healthy Forest Restoration Program – to increase the use of prescribed fire and other forest health treatments to stabilize carbon stocks in southwest and eastern Oregon.
3. Provide match for the USFS Forest Legacy and Community Forest Programs. Both provide funding for the acquisition of forest lands. The Forest Legacy Program also provides funding for conservation easements.

In addition, Oregon could consider using a portion of the auction proceeds to establish programs or to incentivize financial intermediaries to fund upfront project development costs, co-invest in projects, share development risk, monetize future payment streams of carbon credits, and provide aggregation, syndication and other financial intermediation services that broaden participation, especially among potential participants with limited resources and capacity to absorb risk. These strategies have been used successfully by the UN’s Clean Development Mechanism (CDM) and by the IFC (International Finance Corporation) to broaden access to carbon financing. Domestically the use of state-established “green banks” such as the those created in New York, Connecticut, California and Hawaii have played a role in complementing public financing with private investment to spur climate-smart projects. Existing CDFIs (Community Development Financial Institutions) are also potentially well positioned to play a financial intermediation role given their mandate to advance the public interest and their experience in providing credit and financial services to underserved markets and populations.

Conclusions

Investments in natural and working lands can and should play an important role in a comprehensive greenhouse gas emission reduction strategy for Oregon. As summarized in the IPCC (Intergovernmental Panel on Climate Change) latest report, natural climate solutions (conservation, restoration, and improved land management actions) can provide 37% of cost-effective CO₂ mitigation needed through 2030; given Oregon's proportion of forests and rangelands the contribution can be much higher. Compliance offsets can be a helpful element of a carbon pricing program by providing regulated entities a third option for meeting their compliance obligations. In addition, they provide co-benefits such as water quality and wildlife habitat. Incentive programs can play an even more significant role in increasing carbon on and producing co-benefits from Oregon's natural and working lands if designed to be accessible to a broader group of landowners and managers.

Oregon can learn from experience elsewhere to design a compliance offset program and protocols that produce real GHG emission reduction benefits and work well for Oregon offset project developers and owners. Climate mitigation offset programs have been operating across the globe for years now. Offset Project Registries such as the American Carbon Registry and the Climate Action Registry are continuously looking for ways to make offset programs and protocols more efficient and effective. Oregon should rely on the existing infrastructure and experience of these entities to reduce program costs and continuously improve Oregon offset programs. In particular, the state should consider how to make offset markets more accessible to owners of smaller land holdings.

Finally, Oregon can, modify as needed, and use existing grant programs to efficiently invest carbon pricing revenues in natural and working land practices. Increased funding through these programs would accelerate increased sequestration in Oregon's forests and agricultural lands. Oregon should consider additional financial tools that can put public funds to work to leverage increased investment of private funds.

Appendix 1: Guiding Principles

We recommend that the following principles guide the development of offset program and protocol development.

Green House Gas Accounting

- Standardized GHG quantifications for all program protocols that address additionality and reliability
- Efficient and cost-effective project development requirements
- Efficient and cost-effective monitoring and reporting requirements
- Commensurate permanence requirements with GHG reductions targets

Verification, Registry, and Agency Review

- Simple and cost-effective project review by verification entities focused on the highest risk elements
- Rely on statistically valid sampling processes rather than a project by project review.

Landowner Considerations

- Simple and reasonable eligibility requirement, rules and participation costs for participants
- Recognize and accommodate the objectives of different private landowner groups
- Allow for aggregation to reduce costs, create efficiencies, and share risks
- Allow for flexibility of management
- Reasonable project review and offset issuance timelines and deadlines that apply to all parties
- Clear, transparent, and commensurate penalties for program violations

Environmental and Social Safe Guards

- Reduce emissions and contribute to social, economic or environmental sustainability ensured through protocol design and third-party certifications

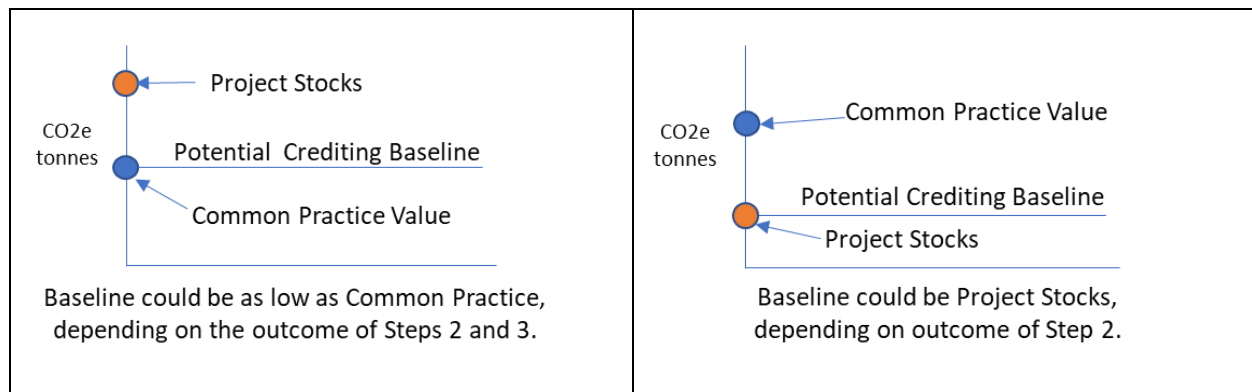
Appendix 2: Improved Forest Management Baseline Determination – Three Step Process

Step 1. Determine Project Carbon Stocks Relationship to ‘Common Practice’

Common Practice is defined as the average carbon stocks within an Assessment Area, which consists of common vegetation, market, and regulatory conditions. Credits are issued to projects based on the delta between project carbon stocks and baseline carbon.

Case 1. Project Stocks \geq Common Practice Value

Case 2. Project Stocks $<$ Common Practice Value



Step 2. Analyze Legal Requirements

Baseline carbon stocks must reflect adherence to all legally binding forest management constraints. If constraints inhibit project from achieving common practice, baseline is increased.

Examples of legally binding forest management constraints that may impact the baseline calculation

1. Encumbrances to forest management in conservation easements that have been in place more than one year.³
2. Management for endangered species under Endangered Species Act or Forest Practices Act Rules.
3. Zoning restrictions.

Examples of non-legally binding agreements that do not impact the baseline calculation.

1. Management plans that can be revised over the course of the project life.
2. Participation in a forest certification program.

Step 3. Analyze financial feasibility

Projects must demonstrate that lowering the baseline below present carbon stocks is financially viable.

Characteristics of Conditions that Demonstrate Financial Viability

1. Ongoing harvest present.
2. High proportion of commercial species with mill infrastructure nearby.
3. No physical/financial barriers inhibit harvest

Characteristics of Conditions that Demonstrate Lack of Financial Viability

1. No ongoing harvest.
2. Lack of commercial species or manufacturing infrastructure.
3. Barriers exist to harvest activities.

³ Encumbrances to forest management in conservation easements that have been in place a year or less do not impact the baseline calculation.