



## MEMORANDUM

**TO** Oregon Global Warming Commission

**FROM** Catherine Macdonald

**SUBJECT** Implementation of EO 20-04 with a focus on the development of a proposal of state goals for carbon storage and sequestration by Oregon's natural and working lands

**DATE** July 10, 2020

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In Executive Order 20-04, Governor Brown provided general directives to 16 state agencies and specific directives to a subset of those agencies, including the Oregon Global Warming Commission (OGWC). The general directives require agencies to exercise any and all authority and discretion vested in them by law; to prioritize and expedite any processes and procedures; and to consider and integrate climate change and climate change impacts into their planning, budgets, investments and policy making decisions in order to accelerate reductions in greenhouse gas (GHG) emissions and to advance adaptation measures. The Commission will follow this general directive as we draft our new mission, vision and values statements and develop a work plan for the coming year this summer and fall.

In addition, EO 20-04 charged the OGWC with three specific directives:

1. "Participation in the Interagency Workgroup on Climate Impacts to Impacted Communities being convened by the Governor's Office along with 14 other agencies. The Workgroup is charged with developing strategies to guide state climate actions to address climate impacts to impacted communities." (EO-20-04)
2. "Consistent with its reporting requirements in Houser Bill 2543 (2007), the OGWC shall also include reporting on progress toward the GHG reduction goals set forth in paragraph 2 of this Order, and the zero-emission vehicle adoption goals set forth in SB 1044 (2019)" (EO 20-04).
3. "In coordination with ODA, ODF and OWEB, the OGWC is directed to submit a proposal to the Governor for consideration of adoption of state goals for carbon sequestration and storage by Oregon's natural and working landscapes, including forests, wetlands and agricultural lands, based on best available science. The proposal shall be submitted no later than June 30, 2021" (EO 20-04). ODEQ, DLCD and OWRD have also offered to assist the OGWC in fulfilling this directive.

Commission member Oriana Magnera has generously volunteered to be the Commission's representative to the Interagency Workgroup on Climate Impacts to Impacted Communities. Commission member Richard Whitman will be representing the Oregon Department of Environmental Quality on the Workgroup, Commission member Lillian Shirley will be representing the Oregon Health Authority, and Commission staff Maya Buchanan will be representing the Oregon Department of Energy. The first meeting will be taking place on July 30, 2020. The Zero Emission Vehicle Working Group currently tracks progress toward the vehicle adoption goals. We will include information on the zero-emissions vehicle adoption goals and on Oregon's progress toward the new GHG reduction goals in our report to the Legislature this fall.

Below, I outline draft principles, a scope of work and a draft workplan for the Commission's work to develop a proposal regarding state goals for carbon storage and sequestration in Oregon's natural and working lands. I follow these with a brief summary of information and resources I am aware of to assist the Commission meet the directive; identification of additional resources is welcome. The proposal builds on materials presented to the Commission at our [December 2019 meeting](#) and preliminary conversations with the coordinating agencies. We will discuss modifications to the principles, scope of work and draft plan and vote to adopt the principles and scope of work at our July 28, 2020 meeting. Please come with questions and comments for improvements to the principles, scope of work and draft workplan. The work plan will be finalized after additional consultation with Tribal governments and the coordinating state agencies in September 2020.

### **Principles:**

- The process for developing a proposal for Governor Brown will be inclusive and transparent and provide opportunities for broad public engagement and coordination with other Boards and Commissions.
- The inventory, baseline and projection methods will be based on guidance from the Intergovernmental Panel on Climate Change (IPCC) and the best available science.
- The proposed goals and practice, program and policy recommendations will:
  - Prioritize consideration of benefits to Climate Impacted Communities,
  - Consider landowner and community interests in policies, practices and programs,
  - Include provisions to ensure a diversity of landowners can participate in any potential market and incentive-based programs and provide meaningful climate benefits, and
  - Consider co-benefits—additional societal benefits occurring from an action—that may be relevant for other state goals.

**Scope of Work:** We have identified six tasks associated with developing a proposal for Governor Brown.

1. Create a technical and public engagement work plan.
2. Establish methods for tracking emissions, carbon storage, and sequestration from the land sector.
3. Identify existing land sector inventory data and priority inventory improvements.
4. Develop a baseline and a business-as-usual projection for land sector emissions.
5. Identify potential policies, programs and practices that could be advanced to reduce emissions and increase carbon storage and sequestration on natural and working lands.
6. Develop and finalize proposed goals and a process for including Natural and Working Lands for Governor Brown's consideration.

## Draft Work Plan:

<b>July</b>	<ul style="list-style-type: none"> <li>• Clarify the Governor’s charge to the Commission</li> <li>• Consult with agency staff and outside experts</li> <li>• Draft principles and a scope of work for Commission review and approval</li> </ul>
<b>August</b>	<ul style="list-style-type: none"> <li>• Begin gathering existing inventory data</li> <li>• Determine land-specific inventory best practices from other jurisdictions</li> </ul>
<b>September</b>	<ul style="list-style-type: none"> <li>• Consult with Tribes</li> <li>• Draft priority inventory improvement recommendations</li> <li>• Inform other Boards and Commissions about the directive and work plan</li> <li>• Finalize the technical and public engagement work plan</li> <li>• Schedule webinars for stakeholders</li> <li>• Complete gathering existing inventory data</li> <li>•</li> </ul>
<b>October</b>	<ul style="list-style-type: none"> <li>• Begin developing the natural and working lands baseline Host webinars</li> <li>• Develop stakeholder surveys to gather input on practices, programs, policies and goals</li> </ul>
<b>November</b>	<ul style="list-style-type: none"> <li>• Administer surveys to collect stakeholder input</li> <li>• Finalize work on the natural and working lands baseline</li> <li>• Begin work on business-as-usual (BAU) projections</li> </ul>
<b>December</b>	<ul style="list-style-type: none"> <li>• Summarize survey results</li> <li>• Complete work on BAU projections</li> <li>• Begin evaluation of practices, programs and policies</li> </ul>
<b>January</b>	<ul style="list-style-type: none"> <li>• Present survey findings, baseline and projections to Boards and Commissions</li> <li>• Host webinars for stakeholders on survey findings, baseline, projections and potential goals</li> <li>• Continue evaluation of practices, programs and policies</li> </ul>
<b>February</b>	<ul style="list-style-type: none"> <li>• Present survey findings, baseline and projections to Boards and Commissions</li> <li>• Host webinars for stakeholders on survey findings, baseline and projections and potential goals</li> <li>• Draft proposal for Commission Review</li> </ul>
<b>March</b>	<ul style="list-style-type: none"> <li>• Submit draft proposal for public review</li> </ul>
<b>April</b>	<ul style="list-style-type: none"> <li>• Synthesize public comments on the draft proposal</li> </ul>
<b>May</b>	<ul style="list-style-type: none"> <li>• Develop a final draft proposal for Commission review and approval</li> </ul>
<b>June</b>	<ul style="list-style-type: none"> <li>• Complete proposal and submit to Governor Brown</li> </ul>

## Inventory, Baseline, Projection Considerations

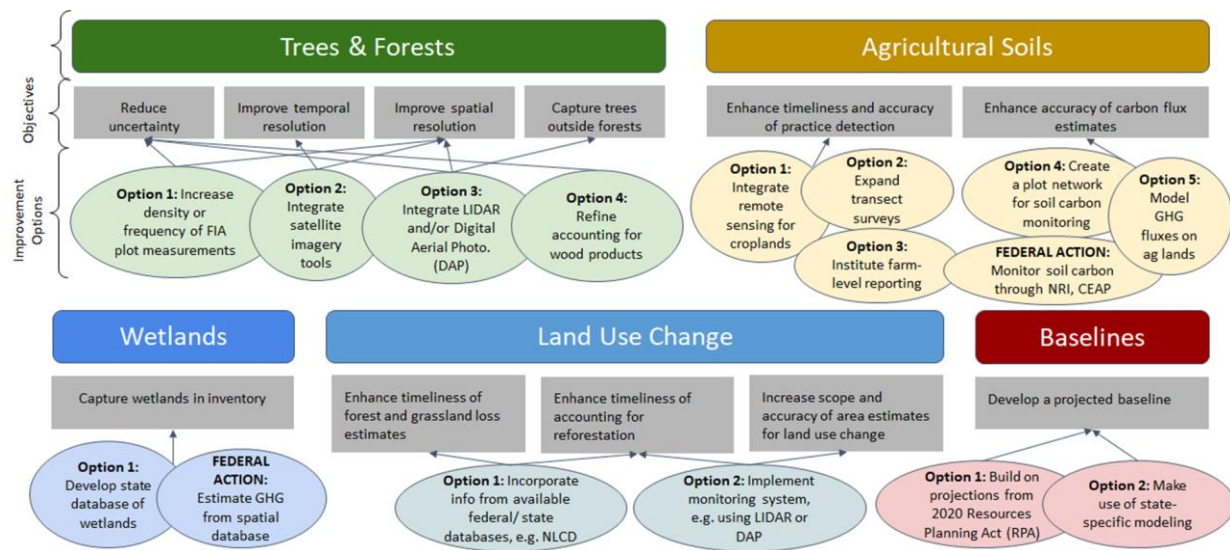
Healthy lands sequester carbon and provide significant and cost-effective opportunities to reduce GHG emissions. The Global Warming of [1.5°C Special Report](#) from the IPCC emphasized the urgency of climate action and the important role the land sector can play as part of a comprehensive climate mitigation strategy.

Unlike other sectors, the land sector can be a carbon storage reservoir or “carbon sink” as well as a source of emissions. Natural and working lands (N&WL) carbon “stocks” (the total amount of carbon stored at any point in time) and carbon “fluxes” (the change in carbon storage between time a and time b) can be affected by both natural processes and land use and management changes. These characteristics add complexity to developing methods for land carbon inventories, establishing business-as-usual baselines and projections, and for setting emission reduction and sequestration goals.

The IPCC has developed guidelines for inventorying land sector stocks and fluxes. The EPA follows the IPCC methods to assess U.S. land sector emissions. For more details on inventory methods and considerations, the current IPCC guidelines can be referenced in their [Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories](#) (2019). The World Resources Institute’s [Mitigation Gold Standard Report](#) (2014) provides additional considerations for national and subnational GHG accounting and reporting.

The Environmental Protection Agency (EPA) maintains data and a [State Inventory and Projection Tool](#) designed to help states develop GHG emissions inventories and projections. The EPA data and tools are easy to use, and the underlying datasets are consistent with the National GHG Inventory. However, the Inventory Tool has significant data gaps, poor temporal and spatial resolution, and outdated default assumptions (5-20 plus years old) in relation to the land sector. Because of these shortcomings, several states in the U.S. Climate Alliance are opting to improve their N&WL inventories. Options for improving inventory data include increasing field data collection, integrating field data with remotely sensed data, and modeling (Figure 1).

Figure 1: Options for improving Natural and Working Land Inventories. (Source: World Resources Institute, 2019)



The Oregon Department of Forestry's recent and pending work with the U.S. Forest Service Pacific Northwest Research Station (PNW) is a good example of such an effort to [improve forest and wood products inventory data](#). The Natural Resources Conservation Service, Oregon State University, the American Farmland Trust among others have data and tools to improve estimates of carbon stocks on agricultural lands. The Pacific NW Blue Carbon Working Group has data on [coastal and marine carbon stocks](#). All these resources can be used to aid us in developing an improved baseline, projections, and identify additional inventory needs.

### Identifying Practices, Programs, and Policy Options and Goal Setting

Reducing emissions and increasing sequestration in the land sector can be achieved through a variety of policies and programs that help support the prevention of land conversion, changes in management practices, and restoration of ecosystems. In 2018, the Oregon Carbon Policy Office convened a Natural and Working Lands Workgroup to identified potential practice, program and policy options for increasing sequestration in the land sector as part of their work to inform cap and trade legislation in Oregon. The Carbon Policy Office provided a [report](#) to the Legislature's Joint Committee on Carbon Reduction in [December 2018](#) on the Workgroup's findings. The Department of Agriculture and the Oregon Watershed Enhancement Board [reported](#) on a proposed framework for an agricultural incentive programs that could be adopted as part of the state's strategy to mitigate

for and adapt to climate change. Representatives from The Nature Conservancy and American Forest Foundation [reported](#) on recommendations regarding forest incentive and offsets programs. The recommendations in these reports can provide a starting point for identification of practice, policy and program options. In addition, several states in the US Climate Alliance have or are in the process of developing action plans for increasing sequestration in natural and working lands. We can evaluate these plans to identify additional options.

Recently published research estimates that reduced emissions and increased sequestration on natural and working lands could contribute as much as 21 percent of current U.S. emissions ([Fargione et al. 2018](#)) and produce approximately 30 percent of the needed global climate mitigation needed by 2030 ([Griscom et al. 2017](#)). In Oregon, several research projects have estimated the emissions reduction and sequestration contribution that have or would result from changes in policies and land management practices, including:

- [Cathcart et al. 2007](#) (regarding Oregon land use laws);
- [Latta et al. 2016](#), [Diaz et al. 2018](#), [Franklin, Johnson and Johnson 2018](#), and [Law et al. 2018](#) (all regarding forest management practices); and
- [Graves et al. 2020](#) (regarding twelve practices across all natural and working land types).

In addition, the Natural Resources Conservation Service (NRCS) has tools for evaluating the benefits of changing practices on agricultural lands including [COMET Planner](#) and [COMET Farm](#). COMET Planner works at the farm scale. The American Farmland Trust will also be releasing a new tool called CaRPE that builds on COMET Planner. This tool will be able to help estimate the potential increase in carbon stocks associated with increased adoption of management practices at the county level. NRCS also recently completed a report on [Farms Under Threat](#) for the US to help identify agricultural lands that are at risk of conversion. A presentation of their report for Oregon can be found [here](#). As part of this project, they analyzed [state policies and programs](#) aimed at avoided conversion of farmlands. The Department of Land Conservation and Development also produces a [Farm and Forest Report](#) which analyzes current trends regarding the conversion of agricultural and forest lands to developed uses.