Greenhouse Gas Sequestration Task Force

MINUTES

Wednesday, May 5, 2021
1:30 PM
Zoom Virtual Meeting Room

ATTENDANCE

Members Present (15):

1. Mary Alice Evans, Director, Office of Planning as Chair of the Greenhouse Gas Sequestration Task Force
2. Earl Yamamoto, Department of Agriculture on behalf of the Chair, Board of Agriculture
3. Christian Giardina, U.S. Forest Service on behalf of the Chair, Board of Land and Natural Resources
4. Pradip Pant, Statewide Transportation Planning Office on behalf of the Director, Department of Transportation
5. Michael Madsen, DOH Clean Air Branch on behalf of Deputy Director, Department of Health, Environmental Health Administration
6. Marianne Rossio, DOH Clean Air Branch on behalf of Director, Office of Environmental Quality Control
7. Leah Laramee on behalf of Administrator, Division of Forestry and Wildlife, DLNR
8. Justine Nihipali as a Member of the Hawai‘i Climate Change Mitigation and Adaptation Commission
9. Susan Crow as researcher from College of Tropical Agriculture and Human Resources, University of Hawai‘i at Mānoa
10. Matthew Gonser as the Mayor’s Representative, City and County of Honolulu
11. Riley Saito as the Mayor’s Representative, County of Hawai‘i
12. Benjamin Sullivan as the Mayor’s Representative, County of Kaua‘i
13. Chane “Makale‘a” Ane as the Mayor’s Representative, County of Maui
14. Ashley Lukens of the Frost Family Foundation as the Legislative Representative, Environmental Non-Profit
15. Alan Gottlieb of the Hawai‘i Cattlemen’s Council as the Legislative Representative, Agriculture/Ranching Association

Members Absent (4):

1. David Forman, Director, Environmental Law Program, University of Hawai‘i at Mānoa, WSR School of Law
2. Jonathan Deenik as extension agent from College of Tropical Agriculture and Human Resources, University of Hawai‘i at Mānoa
3. Melissa Miyashiro of the Blue Planet Foundation as the Legislative Representative, Environmental Non-Profit
4. Bobby Farias of Hawai‘i Meats as the Legislative Representative, Agriculture/Ranching Association

Office of Planning Staff Present: Danielle Bass, State Sustainability Coordinator; Brittaney Key, Climate Ready Hawai‘i VISTA.

Public Attendees:
David Rodriguez, State of Hawai‘i Department of Transportation; Daniel Dinell, Trees for Honolulu’s Future; Lauren Roth Venu, Roth Ecological Design International; Joshua Silva, University of Hawai‘i Cooperative Extension; Cody Brooks, RTOInsider; Carlito Caliboso, private practice attorney at law; Henry Curtis, Life of the Land; Nicole Galase, Hawai‘i Cattlemen’s Council; Megan Gonsalves, Kupu AmeriCorps program; Aarin Gross, Conservation International- Hawai‘i; Tyler Hee, Conservation International- Hawai‘i; Anukriti “Anu” Hittle, Hawai‘i Climate Change Mitigation and Adaptation Commission Coordinator; Parker Kushima, Climate Ready Hawai‘i VISTA; Diana Lopera, Climate Ready Hawai‘i VISTA; Carolyn “Revere” Wood, Climate Ready Hawai‘i VISTA; Jessica Kaneakua, Kupu; Karin Kimura, Hawaiian Electric Company; Carl Miura, Hawai‘i Interagency Council For Transit-Oriented Development Coordinator; David Mulinix, Hawai‘i Climate and Environmental Coalition; Sherry Pollack, 350Hawai‘i; Scott Turn, Hawai‘i Natural Energy Institute; Kimberly Willis, Our Children’s Trust; Glenn Yamasaki, No Ka Oi Energy, LCC; Jayme Barton, Hawai‘i Agriculture Research Center.

Distributed Material:
- Greenhouse Gas Sequestration Task Force (GHGSTF) meeting agenda for May 5, 2021
- Draft minutes for February 16, 2021 GHGSTF meeting
- “Accessing an Online Zoom Meeting” (instructions for downloading and using Zoom)
- University of Hawai‘i at Mānoa College of Tropical Agriculture and Human Resources (UH CTAHR) Project to Develop a Baseline and Benchmarks draft report
- UH CTAHR Project to Develop a Baseline and Benchmarks presentation slides (distributed post-meeting)
- Trees for Honolulu’s Future presentation slides
- Roth Ecological Design International presentation slides

I. Call to order, public notice, quorum

Chair Mary Alice Evans, Director of the Office of Planning, called the meeting to order at 1:33pm. The Task Force's May 5, 2021 meeting notice was published on April 26, 2021. At roll call, a quorum of 11 members was present of this 19-member task force.

AmeriCorps VISTA Brittaney Key reminded attendees of Zoom best practices before the meeting continued. A link to instructions for using Zoom is available on the GHGSTF's website, and the document was distributed via the Zoom chat. Ms. Key also informed those in attendance that they could direct message her or State Sustainability Coordinator Danielle Bass on Zoom if assistance was needed. Task Force members were asked to keep their cameras on for transparency.

The procedure for public comments was announced: Chair Evans would ask Task Force members for questions or comments first, and then discussion would be opened to comment from the public for each agenda item.

Task Force members and members of the public were invited to introduce themselves and their affiliation.

II. Review and approval of February 16, 2021 meeting minutes

Task Force member Leah Laramee noted one correction under February 16, 2021 Agenda Item V.2. ("Discussion of Task Force members' respective organizations' work toward GHGSTF goals"); the University of Hawai'i was the U.S. Climate Alliance grant recipient, not DLNR's Division of Forestry and Wildlife. No further corrections were raised.

The minutes were approved with the above corrections.

Agenda Item III ("Receipt and discussion of University of Hawai'i Mānoa College of Tropical Agriculture and Human Resources project to develop a baseline and benchmarks") was moved further down the agenda to accommodate Task Force member Susan Crow, who would be arriving later to guide discussion on the draft report.

IV. Green infrastructure presentations

A. Presentation by Daniel Dinell representing Trees for Honolulu's Future

The Task Force welcomed Mr. Daniel Dinell, the president of Trees for Honolulu's Future, for the first green infrastructure presentation. Trees for Honolulu's Future's website is https://www.treesforhonolulu.org/. Task Force member Matthew Gonser is also a board member of Trees for Honolulu's Future, but no known conflict of interest existed at the time of the meeting.

Mr. Dinell was asked to present to the Task Force on the importance of green infrastructure to increase the urban tree canopy and reduce urban heat island effects, as well as discuss the greenhouse gas sequestration and climate adaptation opportunities within the urban area. Chair Evans reminded Task Force members that these goals (identifying practices that expand the urban tree canopy to provide greenhouse gas sequestration benefits and other co-benefits) are mandated objectives for the GHGSTF

per Hawai‘i Revised Statues (HRS) §225P-4. A copy of the presentation slides was posted to the task force website and distributed electronically to members. The slides were also linked in the chat.

Mr. Dinell began by sharing a map showing the percent of urban forest lost in various city council districts on O‘ahu between 2010 and 2013. A second set of maps from the O‘ahu Community Heat Map showed the location of various urban heat islands, an effect which Mr. Dinell pointed out will be exacerbated by O‘ahu’s current trend of losing more trees. However, he also reminded the audience that the City and County of Honolulu has a goal of increasing O‘ahu’s urban tree canopy to at least 35% by 2035 (Resolution 18-55).

Mr. Dinell remarked that increasing tree canopy provides both climate adaptation and mitigation benefits. However, increasing tree canopy requires planning for the trees to thrive and to avoid issues like ground uplift from roots. Ensuring trees have sufficient space and uncompacted soil available is especially key. Mr. Dinell also remarked that although he was focusing on the built environment with his presentation, there are many places within urban areas such as parks and schools that have readily available uncompacted soil and space that would be opportune areas for tree canopy growth, too.

Mr. Dinell reminded Task Force members that green infrastructure (such as the urban tree canopy) is infrastructure, and so government bonds should be available to finance it. Mr. Dinell requested that the Task Force consider including a statewide bill authorizing this kind of infrastructure financing for green infrastructure as part of its proposed legislative solutions in its 2023 preliminary report to the State Legislature.

At the conclusion of the presentation, Chair Evans opened the floor to questions from Task Force members. Task Force member Makale‘a Ane raised a comment that she agreed with increasing the state’s tree canopy but would like to see native species used to achieve this. She also referenced Act 233, Session Laws of Hawai‘i 2015, which set targets for the use of native species in public landscaping projects (the State Procurement Office’s guidance on this act was shared in the Zoom chat: https://spo.hawaii.gov/wp-content/uploads/2018/12/Act-233-Hawaiian-Plants_Info_12-26-18.pdf). Mr. Dinell clarified that Trees for Honolulu’s Future supports both native and non-native, non-invasive tree use, depending on what is most appropriate for the place and need.

Task Force member Pradip Pant asked if there was data available to calculate how much carbon dioxide would be sequestered by increasing the tree canopy, given the Task Force’s purpose. Mr. Dinell responded that although he did not have that information on hand, he would request his technical staff to research it. Task Force member Christian Giardina followed with a question for Mr. Dinell on the advantage of trees versus photovoltaic shelters in parking lots based on their relative climate mitigation and adaptation benefits, to which Mr. Dinell replied he did not have an answer on-hand as it would depend on the specific place and the goals of the project.

Task Force member Leah Laramee shared a concern she had heard in other discussions from the State of Hawai'i Department of Transportation (DOT), which is that there is insufficient funding for the maintenance of trees. Task Force member Laramee recommended to the Task Force that it could help support the DOT to secure funding from the Legislature for tree maintenance as part of the Task Force's work for green infrastructure.

No further questions were raised by the Task Force, and Chair Evans opened the floor to questions from the public. Mr. Henry Curtis commented on the discrepancy between the State planting trees as part of climate adaptation and mitigation and counting energy output from biomass power plants as renewable energy. Chair Evans thanked Mr. Curtis for his remarks and recognized Mr. David Mulinix next. Mr. Mulinix asked if Trees for Honolulu's Future recommended any types of trees that people could plant, and Mr. Dinell shared https://www.righttreehawaii.com/ as a resource. He also shared https://plantpono.org/plant-assessments/ as a resource to help people choose species least likely to become invasive if someone wanted to plant a non-native tree species. Mr. Dinell further reminded the audience of the imperativeness of the right tree in the right place getting the right care, and that no one species of tree will be suitable in all situations or locations. Task Force member Ane shared https://www.hawaiipropertytax.com/forms/Native%20Forest%20Dedication%20-%20Species%20List.pdf as an additional resource developed by the County of Hawai'i for selecting native or non-invasive trees for the appropriate habitat, although she noted it was limited to Hawai'i Island.

Task Force member Riley Saito added that ideally, trees chosen for adding to the canopy would provide food as well.

Mr. David Rodriguez remarked that not only is tree maintenance something that needs to be considered when planting more trees, but private citizens also have concerns over liability for damage to property or people from trees on their property. Mr. Dinell acknowledged this and again underscored the importance of proper tree selection for the appropriate place.

No further questions were raised by the public. Chair Evans thanked Mr. Dinell on behalf of the Task Force for his time and presentation.

III. Receipt and discussion of University of Hawai'i at Mānoa College of Tropical Agriculture and Human Resources project to develop a baseline and benchmarks

Task Force member Susan Crow had joined the meeting by the conclusion of Mr. Dinell's presentation, so Chair Evans returned to Agenda Item III.

The GHGSTF appropriated funds in 2019 to UH Mānoa College of Tropical Agriculture and Human Resources (UH CTAHR) for a two-year project to develop data resources required to generate a baseline and short and long-term benchmarks for increasing greenhouse gas sequestration, soil health, and yields in natural and working lands in Hawai'i's agricultural, forestry and other land uses (AFOLU) sector. The project, led by principal investigator Mr.

Joshua Silva, is in the process of finalizing its report to the Task Force. The Task Force is currently in receipt of the project's draft report, a copy of which was also made available online on the GHGSTF website and linked to in the Zoom chat.

Before the presentation on the draft report, Task Force member Crow noted that the impetus for this contract was to fill in gaps in the data resources used to validate models that form the basis of decision support tools readily available for soil environments in the contiguous U.S. but which may not necessarily be accurate for Hawai'i's soils. Thus, this project focused mainly on data compilation, with some data collection on soil health, greenhouse gas flux from soil systems, and soil carbon stocks. Mr. Silva's presentation summarized highlights and key findings from the distributed draft report. While a copy of the slides was not available prior to the meeting, they were posted to the website after the meeting and made publicly available.

The presentation included tables of known data sources and references for greenhouse gas and soil carbon data in Hawai'i's natural working lands. Items of note from these sources were listed on Slides 5 and 8. One such key finding was that in pastures there was no direct quantification data available for Hawai'i, making this a gap that needs to be addressed in future research.

Slide 9 summarized the data spread found in the literature regarding the percent organic carbon found in different land use and soil types (HAC= high activity clays, e.g. mollisols, vertisols; LAC= low activity clays, e.g. oxisols; PNCM= poorly and non-crystalline minerals, e.g. andisols).

A second component of this project was mapping soil carbon stocks. Samples for this data were collected from published and unpublished literature, with the National Cooperative Soil Survey (NCSS) being the single largest source of data. A methodology called SoilGrids was used to apply machine learning to the mapping, but it tends to underestimate carbon stocks for high organic soils (like andisols), which could be a large gap to address in future work since andisols have a significant presence on Maui and Hawai'i Islands. There are also two versions of SoilGrids that were used in this project. Slide 11 showed examples of the same area mapped with different SoilGrids versions and the inclusion or exclusion of the non-NCSS data.

Mr. Silva's team also utilized land use maps in Hawai'i, relying on datasets from Carbon Assessment of Hawai'i Land Cover (CAH), Agricultural Land Use Baseline (ALUB), and Hawai'i Soil Health (HSH) for this part of the project. These data layers were compared to each other and several inconsistencies were found which need to be addressed in future work.

The other objective of this project involved identifying soil health markers. Mr. Silva's team collected samples from multiple types of natural and working lands with diverse land use histories and soil types, as well as comparing the data on some of these sites before and after implementing soil carbon-building practices. They also identified and quantified 11 soil health parameters which can be found on Slide 19.

At the conclusion of the presentation, Chair Evans opened the floor to questions from Task Force members. Task Force member Earl Yamamoto informed Mr. Silva that there was an update released on the Department of Agriculture website of the ALUB data layers for every county except Maui County. Mr. Silva thanked Task Force member Yamamoto and said they were aware of the update and planned to incorporate it in future analysis. Task Force member Marianne Rossio informed Mr. Silva that the greenhouse gas emissions report referenced in his team's draft report has also been updated and is available on the DOH Clean Air Branch's website. Chair Evans acknowledged Task Force member Pant next, who asked if the numbers reported in this study were life cycle emissions or just the soil carbon stocks. Task Force member Crow responded that the data is strictly the soil carbon stocks at the time of data collection.

Due to time constraints, no further questions were accepted from the Task Force or the public. Chair Evans thanked Mr. Silva and Task Force member Crow on behalf of the Task Force for their time and presentation.

IV. Green infrastructure presentations

B. Presentation by Lauren Roth Venu representing Roth Ecological Design International

The Task Force welcomed Ms. Lauren Roth Venu, the founding principal and project director of Roth Ecological Design International (REDI) for the final green infrastructure presentation. REDI's website is https://www.rothecological.com/. Ms. Roth Venu was asked to present to the Task Force on green infrastructure and facility design, eco-blocks and eco-district design concepts, water reclamation, and sustainable urban design principles that incorporate climate mitigation and adaptation efforts. A copy of the presentation slides was posted to the task force website and distributed electronically to members. The slides were also linked in the chat.

Ms. Roth Venu began by underscoring the importance of water management and conservation in the face of climate change and urbanization and highlighting the many opportunities within facility and infrastructure design for water reuse and groundwater recharge. She also reminded the audience that water conservation translates to energy conservation and thus reduced greenhouse gas emissions.

Ms. Roth Venu highlighted multiple examples of green infrastructure and building resiliency practices that could be implemented in Hawai‘i such as constructed wetlands, permeable pavement, or green roofs. She also used a Kapalama development design project as a case study to show how a site's water needs could be met through capturing and treating onsite wastewater sources and the potential energy and financial savings as a result. Ms. Roth Venu remarked to the Task Force that promoting green infrastructure will need to include ways to make it attractive for developers, as without assistance or incentives the lengthy return on investment timeline is a significant hurdle.

For an example of an executed water reuse/green infrastructure design, Ms. Roth Venu highlighted the Allied Health Sciences building at the University of Hawai‘i—West O‘ahu, which was built on old agriculture lands (depleted soil). The site was designed to restore the area’s native ecology through water management and soil nutrient replenishment, so Ms. Roth Venu walked the audience through some of the features incorporated to accomplish this, e.g. using plants and constructed soils to filter rainwater into tanks.

Finally, Ms. Roth Venu highlighted the water filtration capacity and sequestration benefits of wetlands which can be mimicked with constructed wetlands, and she summarized the several co-benefits of green infrastructure overall, including reducing urban heat island effects, sequestering atmospheric carbon dioxide, and creating green jobs.

Chair Evans opened the floor to questions from Task Force members. Task Force member Saito asked if REDI had included any research or projections involving air-to-water technology, to which Ms. Roth Venu said it was likely better suited for emergency situations or small operations rather than operations of scale involving millions of gallons. With no further questions from Task Force members, Chair Evans opened the floor to questions from the public. No questions were raised by the public. Chair Evans thanked Ms. Roth Venu on behalf of the Task Force for her time and presentation.

V. 2023 Greenhouse Gas Sequestration Task Force draft report to the State legislature

A. Request for task force members’ recommendations in marine use and aquacultural policies

The Task Force is mandated by HRS §225P-4 to identify marine use policies and aquacultural policies that promote increased greenhouse gas sequestration and provide greenhouse gas benefits. While the Task Force has been thus far unable to procure resources for investigation into these topics, Chair Evans invited Task Force members to share if they had research or recommendations in these areas that the Task Force could identify in its draft report. Task Force member Ashley Lukens offered to comment on aquaculture policies and was requested by Chair Evans to email Ms. Key after the meeting to submit her comments. No further comments were raised.

B. Request for task force members’ recommendations in identifying appropriate criteria to measure baselines and increases in aquacultural production

Chair Evans requested for any interested Task Force members to reach out to Ms. Key via email after the meeting to submit comments regarding identifying appropriate criteria to measure baselines and increases in aquacultural production.

VI. Permitted Interaction Groups (PIGs)

A. Proposal(s) for and voting on formation of new PIG(s)

No PIG proposals were submitted prior to the meeting for consideration. Task Force member Laramee suggested a potential policy PIG and recommended its members to include the DOA representative (currently Task Force member Yamamoto) as well as any interested volunteers. Chair Evans requested that Task Force member Laramee email her proposal and suggested membership to Ms. Key for formal action at the next GHGSTF meeting. Chair Evans also reminded the Task Force that if they would like to

propose a new PIG for consideration to submit their proposal to Ms. Key for inclusion on the next agenda.

VII. Announcements

A. Next meeting: August 18, 2021 at 1:30pm (location TBD)

Attendees were reminded that the next meeting for the Task Force will be Wednesday, August 18, 2021 at 1:30pm. It was noted that its location is to be determined due to the uncertainty of the COVID-19 global pandemic.

There were no final questions or remarks from the Task Force or the public.

VIII. Adjournment

The meeting adjourned at 3:35pm.