

Greenhouse Gas Sequestration Task Force

Thursday, November 28, 2018: 9:07 PM to 4:10 PM

Hawaii State Art Museum
Ground Floor, Multipurpose Room
250 Hotel Street
Honolulu, Hawaii 96813

ATTENDANCE

- Members Present: Leo Asuncion (OP), Bobby Farias (Kunoa Cattle Company), Christian Giardina (DLNR), Scott Glenn (OEQC), Alan Gottlieb (Hawaii Cattlemen’s Council), Ashley Lukens (Center for Food Safety), Philipp LaHaela Walter (State DLNR Division of Forestry and Wildlife), Michael Madsen (State DoH Clean Air Branch), Robert Miyasaki (Department of Transportation), Melissa Miyashiro (Blue Planet Foundation), and Earl Yamamoto (DoAg)
- Present But Yet To Be Confirmed: Susan Crow (UH CTAHR) and Jonathan Deenik (UH CTAHR)
- Members Excused / Absent: David Forman (WS Richardson School of Law)
- Staff Present: Sandy Ma (OP-Staff for the Task Force), Justine Nihipali (OP), and Lori Sunakoda (Deputy AG)
- Others Present: Rep. Chris Lee (Hawaii State Legislature), Jamie Barton (Hawaii Agriculture Research Center), Robert “Rocky” Mould (City and County of Honolulu Office of Climate Change, Sustainability, and Resiliency), Malia Nanbara (State DLNR Division of Forestry and Wildlife), Kenneth Yamamura (County of Maui), Mike Kido (SanHI), Nami Ohtomo (WSP), Dale Sandlin (Hawaii Cattlemen’s Association), Keith McFall (State DoH Clean Air Branch), Aki Marceau (Elemental Excelerator), Jamila Jarmon (Elemental Excelerator), Lissette Yamase (State DLNR Division of Forestry and Wildlife), Marianne Rossio (State DoH Clean Air Branch), Lisa Hinano (Conservation Council for Hawaii), Leah Laramie (State DLNR Department of Forestry and Wildlife), Joelle Simonpietri (Simonpietri Enterprises), Casey Ching (State DLNR Division of Forestry and Wildlife), Talia DeFranco (State DLNR Division of Forestry and Wildlife), Anu Hittle (DLNR), Paul Selmants (USGS), Leslie Cole Brooks, Kalina Cloud (WS Richardson School of Law), Rachel Goldberg (WS Richardson School of Law), Jonathan Marstaller (Pono Pacific), and Meg Turner (Sen. Gabbard’s Office)

DISTRIBUTED MATERIAL

- Greenhouse Gas Sequestration Task Force Meeting Agenda for November 29, 2018
- Draft Minutes for May 22, 2018 Carbon Farming Task Force Meeting
- Act 15, SLH 2018
- Act 16, SLH 2018
- **DRAFT** White Paper from the Hawaii Delegation at the US Climate Alliance states present at the July 2018 Natural and Working Lands Learning Lab in Washington, DC

I. Call to Order, Public Notice, Quorum

Chair Leo Asuncion called the meeting to order at 1:07 pm. The Task Force's November 29, 2018 meeting notice was published on November 7, 2018, according to public meeting notice requirements. The Task Force has 19 members total pursuant to Act 15, SLH 2018, and there are 11 members present for quorum to start the meeting.

II. Welcoming Remarks

Chair Asuncion welcomed everyone to the Greenhouse Gas Sequestration Task Force meeting. Chair Asuncion announced that Act 15, SLH 2018, which created the Task Force, requires the Task Force to act quickly in the next few years. Chair Asuncion stated that we tried to have meetings in September and October in 2018 but could not achieve quorum because of the advice and consent provision (HRS § 26-34) of Act 15.

III. Introduction of Task Force Members and Stakeholders

Chair Asuncion had Task Force members introduce themselves and their affiliation:

- (1) The chair of the Task Force is Leo Asuncion, Director of the Office of Planning;
- (2) Mike Madsen, Environmental Engineer, Department of Health Clean Air Branch;
- (3) Susan Crow, University of Hawaii CTAHR Researcher (subject to confirmation);
- (4) Ashley Lukens, Director of the Hawaii Center for Food Safety and Executive Director of the Frost Family Foundation;
- (5) Bobby Farias, Kunoa Cattle Company;
- (6) Alan Gottlieb, Hawaii Cattlemen's Council;
- (7) Robert Miyasaki, State Department of Transportation;
- (8) Earl Yamamoto, Department of Agriculture;
- (9) Christian Giardina, DLNR (USDA USFS);
- (10) Melissa Miysahiro, Chief of Staff, Blue Planet Foundation;
- (11) Philipp LaHaela Walter, DLNR DOFAW;
- (12) Jonathan Deenik, University of Hawaii CTAHR Researcher (subject to confirmation);
- (13) Scott Glenn, OEQC

Chair Asuncion introduced Rep. Chris Lee who was instrumental in passing legislation creating the original Carbon Farming Task Force and now the second iteration of the Carbon Farming Task Force, which is the Greenhouse Gas Sequestration Task Force.

Rep. Lee stated that the 2018 Legislature took unprecedented steps to catapult Hawaii with our counties and private sectors as partners forward to actually address the looming challenges of climate change as they grow more dire by the year. Everyone here on the Task Force and in the room as stakeholders serve a very critical purpose.

We are only one state of course and we have significant challenges which we all know about. With the release of the National Climate Assessment with updates from countries around the world, it is clear that we are nearly beyond a tipping point from which we may not be able to recover from within our lifetimes. While that may sound overblown, the next generation will inherit whatever we choose to do or not do. It is frustrating that we are here and have to deal with this when we might have been better off dealing with this 40 or 50 years ago. The question is now what do we do. The good news is that we are not reinventing the wheel. We are not doing something unheard of. There are lots of other jurisdictions and states and other countries far beyond where Hawaii is presently in terms of policy, action, funding and progress in the real world in terms of dealing with carbon, greenhouse gases (GHGs), climate change on people, society and businesses. Each of the Task Force members serve a very important purpose and represent a constituency that will be significantly impacted by the things that will be coming down the pipe whether it is our environmental community, agricultural community, business community, public and private partners, etc. All of us have a role to play and much to lose. This means that the status quo way, making incremental change, nickel and diming things and putting band aids on things are not going to work anymore. For this Task Force, this means asking questions outside of the comfort zone. The Legislature acted outside the box and stepping outside the comfort zone by committing Hawaii to a zero emissions clean economy. That is something that other states have adopted following Hawaii's lead. Some Hawaii departments are taking the lead. For DLNR it is taking action and investing in things that previously did not rise to the level of focus it has to now. For Department of Agriculture, as stewards of Hawaii's agricultural industry and the soils which have so much capacity to sequester carbon, it cannot do things the same way and needs to think outside the box. For our private sector partners, it is just the same. If anyone feels uncomfortable with that, I would ask that you step aside and find someone within your department or designee that is committed to this mission because that is the vision of the Legislature and ultimately the will of the people that elected us and empowered us to take action. It is our culture, economy and future that is on the line. This is the level of importance that this takes. The recommendations of the Task Force will empower the Climate Commission and the Legislature and are critical.

Chair Asuncion thanked Rep. Lee for his support and remarks.

Chair Asuncion proceeded to explain the advice and consent provision of HRS § 26-34 that the Task Force is subject to. Members not duly named in Act 15 must go through confirmation – member from the Climate Commission and two CTHAR nominees (Drs. Crow and Deenik). The nominations will go to Boards and Commissions at the Governor's Office for a packet of information to be prepared and then to the Senate for confirmation. Those nominated by the Legislature will not have to go through the advice and consent process. Chair Asuncion stated that we will send a letter asking for counties to send their representatives to the Task Force, except for Maui County, which

we will wait to do until the new Mayor is sworn in. Chair Asuncion explained that, pursuant to Act 15, if you are already a designee then you cannot name an alternate.

Chair Asuncion would like to add Aki Marceau from Elemental Excelerator to the Task Force and go through the HRS § 26-34 process. Ms. Marceau approached Chair Asuncion regarding joining the Task Force. Chair Asuncion needs the Task Force's consensus to add Ms. Marceau. Ms. Marceau stated that she is the managing director of policy and community with Elemental Excelerator and sees herself contributing to the Task Force through the lens of innovation. Elemental Excelerator each year finds and funds about 15 companies and in the recent few years Elemental Excelerator has seen a huge influx of companies with some ties to carbon and carbon sequestration. Chair Asuncion stated that he does not need a vote because Ms. Marceau will need to go through the advice and consent process to be added to the Task Force. Chair Asuncion expressed that at this time he is not worried about the size of the Task Force being too large, given that with Ms. Marceau, the Task Force will be 20 members. Member Glenn asked Ms. Marceau about conflicts of interest as Elemental Excelerator invests in businesses and the Task Force may come out with recommendations that may help or hurt those businesses. Ms. Marceau states that Elemental Excelerator is a nonprofit organization. Elemental Excelerator helps other businesses scale and succeed and their positive impacts on the community. If there is a conflict of interest, Ms. Marceau said that she could step out. Ms. Marceau stated that she hoped that having a broad lens on the national and local scale with the nexus of innovation and carbon sequestration would be additive to the conversation.

Member Lukens had a question about alternates. Member Lukens was appointed by the Legislature and wanted to know if she could have an alternate. If Act 15 does not provide for the word "designee" after your appointment, then you cannot have an alternate explained Chair Asuncion.

There are no objections from the Task Force as to Ms. Marceau joining the Task Force so her name will be forwarded to Boards and Commissions, per Chair Asuncion. Usually Senate Confirmations are held in mid-March to early April time frame but it can happen early.

IV. Review and Acceptance of the May 22, 2018 Carbon Farming Task Force Meeting Minutes

Chair Asuncion informed the Task Force members this is merely for their information and there is no action on this item. This is a review of the May 22, 2018 Carbon Farming Task Force meeting minutes. The draft minutes were published on the website on the Office of Planning on June 18, 2018 along with an email sent to all Carbon Farming Task Force members on the same day. Edits were requested and revised draft minutes were posted on the website on June 26, 2018. This is for information purpose only. This Greenhouse Gas Sequestration Task Force cannot take action on approving the Carbon

Farming Task Force minutes but Chair Asuncion wanted all the information to come forward and make the information available to the Task Force.

V. Orientation

A. Introduction Act 15, SLH 2018

Sandy Ma's Power Point Presentation on Act 15 may be found on the Task Force [website](#). Ms. Ma is the coordinator for the Task Force. Legislature passed HB 2182, which was signed into law as Act 15, SLH 2018, which created the Task Force and recognized that Hawaii's working and natural lands can sequester a lot of Hawaii's GHG emissions. The Task Force is an extension of the Carbon Farming Task Force which was repealed June 30, 2018. The main new requirements of the Task Force are urban trees and achieving net negative emissions by 2045 (per the clarification made by Member Glenn).

B. Introduction to Act 16, SLH 2018

Danielle Bass's Power Point Presentation on Act 16, studying the feasibility of a carbon offset framework in Hawaii, may be found on the Task Force [website](#). Findings and definitions for Act 16 may be read in Act 16, which is located on the Task Force [website](#). The purpose of Act 16 is to partner with the Task Force to establish a framework for a state administered carbon offset program to which the revenues realized from the sale of carbon offset credits may be invested in two (2) ways: (1) projects that generate further offset credits; or (2) to enhance the state's climate adaptation or mitigation plans. A report of the feasibility of a carbon offset program is due in 2019 for the 2020 legislative session. In October 2018, staff attended the Coalition of Agricultural Greenhouse Gases (C-AGG) Conference in Washington DC to learn and discuss sustainable agriculture, GHG mitigation and agricultural carbon offset projects. In November 2018, staff attended US Greenbuild International Conference to learn and discuss carbon offset crediting in the built environment. An RFP is also being drafted for consultant services for feasibility of carbon offset framework in Hawaii.

Member Lukens asked if the consultant will be charged with drafting the report to be due in one year. Ms. Bass answered that the consultant will be working with the Office of Planning and provide expert resources on carbon offset projects that may be available in Hawaii. Member Lukens asked if we are looking for a carbon offset expert. Ms. Bass answered yes hopefully. Ms. Bass answered that she did not want to delve too much deeper into the RFP because it has not been released. Member LaHaela Walter requested some information about the collaboration between the Task Force and Office of Planning. Ms. Bass responded that she hopes that any consultant retained would have the ability to make presentations to the Task Force and possibly offer a carbon / GHG symposium to discuss the viability / feasibility / possibility of a carbon offset framework in Hawaii. Chair Asuncion stated that he would like to see in the proposals

from consultants that the consultants are planning to work with the Task Force on the development of a report / framework. At the end of the day the Legislature is going to decide what the framework is going to look like and Chair Asuncion stated that we are going to give them that information based on the best available data from the information the consultant brings to the table. The assumption now is that it is feasible. Chair Asuncion stated the report needs to look at it financially and legally. If there needs to be legal changes that need to be made, then it is another session later. Chair Asuncion also stressed that a report needed to touch on how much is it going to cost us.

C. Recap of Carbon Farming Task Force Activities

As part of the orientation, Chair Asuncion provided a recap from the Carbon Farming Task Force. The Carbon Farming Task Force met on September 15, 2017, January 30, 2018 and May 22, 2018. The Carbon Farming Task Force also got out into the community.

D. Recap of Working Group Activities from the Carbon Farming Task Force

As part of the orientation, Chair Asuncion informed the current Task Force that the prior Carbon Farming Task Force had working groups and they did some activities. The chairs of the working groups presented on their groups' activities. Member LaHaela Walter was Chair of the Economics Working Group of the Carbon Farming Task Force. Other members of the Economics Working Group of the Carbon Farming Task Force were Tyler Jones, Rocky Mould, Kenneth Yamamura, and Ron Whitmore, with guests such as Scott Glenn, Arin Gross (Conservation International), Danielle Bass and Kirsten Oleson (UH). The purpose of the Economics Working Group was to develop incentives and funding mechanisms for incentives, e.g., loans, tax credits, grants, research, technical assistance, educational materials, outreach, etc. Member LaHaela Walter stated that Economics Working Group of the Carbon Farming Task Force followed three (3) basic guiding questions: (1) what practices in agriculture, aquaculture, agroforestry, urban forestry and forestry have the largest potential to sequester and store carbon on public and private areas in the long term; (2) how can land and water managers be incentivized to adopt such practices; and (3) what can we learn from existing policy initiatives in other countries and parts of the world. To the third item, the Economics Working Group of the Carbon Farming Task Force invited Arin Gross of Conservation International to present on its paper on Payments for Ecosystem Services (which may be found on the Task Force [website](#)) at its April 27, 2018 meeting. The Economics Working Group of the Carbon Farming Task Force also met three other times before the Carbon Farming Task Force was repealed June 30, 2018. The Economics Working Group of the Carbon Farming Task Force attempted to meet May 25, 2018 but a call-in snafu resulted in botched meeting. The Economics Working Group of the Carbon Farming Task Force met June 22, 2018 and discussed a cost / benefit analysis of the most promising GHG sequestration pathways, analyzing all different pathways on natural and working lands and coming up with the most bang for the buck if the legislature decided to fund a

sequestration pathway. Member LaHaela Walter stated that hopefully another working group will continue to research / investigate this. There is also draw down book and how much could be stored and how much it would cost. Member LaHaela Walter developed a work plan for any newly reformed working group. The Economics Working Group of the Carbon Farming Task Force also discussed the utility of the social cost of carbon.

Dr. Crow was Chair of the Chair of the Science Working Group of the Carbon Farming Task Force. Other members of the Science Working Group of the Carbon Farming Task Force were Jonathan Deenik, Jayme Barton, Michael Madsen and Robert DeRobles. The purpose of the Science Working Group of the Carbon Farming Task Force is to measure baseline levels and increases in greenhouse gas sequestration, improvements in soil health, and other key indicators of greenhouse gas benefits for participation in carbon markets and/or establishment of best management practices. Science Working Group of the Carbon Farming Task Force met May 8, 2018 to discuss emissions data, the work of the DoH Clean Air Branch and the emissions baseline. They met July 5, 2018 to discuss what was needed in terms of resources to pull together a carbon sequestration in Hawaii soils baseline and how long it will take. They had a presentation by Climate Action Reserve about the jurisdictional accounting framework. They also met July 17, 2018 to discuss the formulation of a baseline for agricultural and natural environments. A mandate of the Task Force is “to establish a baseline for greenhouse gas emissions within Hawaii and short- and long-term benchmarks for increasing greenhouse gas sequestration in the State's agricultural and natural environment[s]”. The discussion centered around best management practices for farmers to implement to determine sequestration improvements before and after execution. They again met November 14, 2018 receive a briefing by Colorado State University Scientists about implementing Comet Farm / Daycent modeling for soil health and best management practices for farmers and forestry management.

Member Glenn was Chair of the Chair of the Legal / Policy Working Group of the Carbon Farming Task Force. Other members of the Legal / Policy Working Group of the Carbon Farming Task Force were Ashley Lukens, Josh Stanbro, Rocky Mould, Ben Sullivan and Rep. Lee with guests from The Nature Conservancy. The purpose of the Legal / Policy Working Group of the Carbon Farming Task Force is to identify and recommend measures to the Legislature and Governor to increase climate resiliency and improve greenhouse gas sequestration, build healthy soils, and provide greenhouse gas benefits to participate in carbon markets and/or establish best management practices. Member Glenn reported that the Legal / Policy Working Group of the Carbon Farming Task Force never officially met while the Carbon Farming Task Force existed. The Legal / Policy Working Group met after the Carbon Farming Task Force was repealed. At the July 5, 2018 meeting, people discussed the need for baseline information before policy formation and the concern about enough scale in Hawaii to tackle GHG sequestration. People also recommended having Paul Selmants and Christian Giardina present about carbon storage in natural and working lands. At the July 16, 2018 meeting, people

discussed outcomes from the Learning Lab. At the August 16, 2018 meeting, people discuss the meaning of carbon neutral / net negative in Act 15, directionally correct best management practices for healthy soils / agricultural sector, carbon offset credits, and Hawaii Department of Commerce and Consumer Affairs hosting offset credit registry due to securities concern.

The Public Outreach Working Group of the Carbon Farming Task Force never met. Chair Asuncion explained that for the Task Force, going forward, the working groups will be different than under the Carbon Farming Task Force. The Task Force can conduct business as an entire membership or through standing committees (created by the Task Force) or through permitted interaction groups (created by the Task Force).

VI. Public Comments

No public comments.

VIII. Formation of Working Groups

Chair Asuncion stated that we needed to take items of the Agenda out of order because quorum will be lost. As the Task Force were just discussion working groups, with the members indulgence, Chair Asuncion asked that Agenda item VIII be taken up and then the meeting can get through all the presentations which do not require actions by the Task Force.

Chair Asuncion explained that there is a proposal to reform old Working Groups. Chair Asuncion explained that there are three ways the Task Force can do business. One is in its entirety with 11 members present for quorum, meeting Sunshine Law requirements. Two is by standing committee which is a subset of the Task Force which does not meet quorum requirements (less than 11 people) but also needs to comply with Sunshine Law requirements. Standing committees have no sunset dates and can have additional tasks assigned by the Task Force. The cons for standing committees are the logistics for a staffer to coordinate. Three is by permitted interaction groups (PIGs), which is a subset of the Task Force and does not need to meet quorum requirements (less than 11 people). PIGs are assigned Task Force tasks and a deadline for finishing tasks and can consult with anyone to complete the tasks. There are no notice requirements for PIGs. PIGs can come back to Task Force to give status reports but the Task Force cannot give PIGs new assignments or revise the assignments. Even asking for more time by the PIGs is a change in the scope. The Task Force can only say thank you and keep working in response to status reports. Deputy Sunakoda agreed with Chair Asuncion's report of the three ways the Task Force can conduct business.

Chair Asuncion prefers PIGs and the Task Force exercise discipline not to change the scope of work assigned to PIGs. The first meeting is forming the PIG with the scope of work, the second meeting is the PIG gives the Task Force with the findings and

recommendations as the result of the work and Task Force deliberates on the findings and recommendations, and at final meeting the Task Force to makes decision on the PIG recommendations, if there is any.

If the Task Force adds more meetings, then it has to be under Sunshine Law.

Chair Asuncion suggests creating PIGs. PIGs will be allowed to choose their own chairs. Member Glenn stated that PIGs have to have members stated and PIGs cannot substitute for the Task Force making decisions. The Task Force cannot rubber stamp the PIGs recommendations and findings. Member LaHaela Walter asked how PIGs interact and collaborate. Chair Asuncion said that is up to PIGs. Deputy AG Sunakoda said it must be within the scope of both PIGs and cannot go outside scope of either PIGs. Chair Asuncion suggests that each PIG should have task / scope to collaborate with other PIGs.

Deputy AG Sunakoda stated that the task / scope, and in agreement with previous deputy AG opinion, in the noticed Agenda for the November 29, 2018 meeting at item VIII.A-D is sufficiently detailed to establish the PIGs but if there are any deviations or if there was a request to expand the PIGs then the PIG would need to be disbanded.

Member Giardina ask the process for changing the language to the Science PIG. Chair Asuncion stated, which was concurred by Deputy AG Sunakoda, that if a PIG was established, then it needs to be disbanded to change the scope.

Member Farias asked if it is possible to have a broad scope / task for each PIG and then have the PIG develop its own timeline and then report back to Task Force for first task, then onto next one, etc. Deputy AG Sunakoda stated that this is permissible.

For discussion purposes, Member Glenn move the Task Force create a legal and policy permitted interaction group under the authority of Chapter 92F, Hawai'i Revised Statutes that is charged with the following:

(1) to identify and recommend measures to increase climate resiliency and improve greenhouse gas sequestration, build healthy soils, and provide greenhouse gas benefits to participate in carbon markets and/or establishment of best management practices;

(2) with the membership to be Leo Asuncion, Scott Glenn, Ashley Lukens, Philipp LaHaela Walter, Susan Crow, the 4 mayors designees; and

(3) a deadline and deliverable date of August 30, 2019 or as soon as possible thereafter

Member Miyashiro asked about serving on the legal and policy PIG. Chair Asuncion stated that Member Glenn's motion to form a legal and policy PIG must be seconded first. Member Lukens seconded Member Glenn's motion to create a legal and policy

PIG. Chair Asuncion reiterated that the Member Glenn's motion to form a legal and policy PIG has been moved and seconded.

Chair Asuncion noted that Member Miyashiro wanted to be added to the legal and policy PIG.

Member Lukens noted that Member Forman should also be added to the legal and policy PIG because he is with Richardson Law School and head of the environmental law program.

Member Glenn noted that there are discussions for amendments to the motion to add Members Miyashiro and Forman. This would result in 11 people on the legal and policy PIG and this makes quorum, and someone needs to step down. The reason that Dr. Crow and Member LaHaela Walter are on the legal and policy PIG is so that there is dialog between the other PIGs, given that they were the chairs of their prior working groups and assuming formation of the Science and Economics PIGs, respectively.

Member Lukens moved to amend the motion to permit the legal and policy PIG to coordinate and consult with any other permitted interaction groups, as needed within the scope of its task.

Member Miyasaki noted that to avoid the quorum issue organizations can send members to the legal and policy PIG that are not sitting members.

Member Glenn moved to amend the motion to remove Chair Asuncion, Member LaHaela Walter and Dr. Crow.

Chair Asuncion noted, with confirmation with Deputy AG Sunakoda, that even if the legal and policy PIG membership does not meet quorum for Sunshine Law purposes, if Task Force members are invited to the legal and policy PIG which will cause there to be quorum, then the legal and policy PIG will have to conform with Sunshine Law. However, other people from Task Force organizations can send members to the legal and policy PIG and that will not cause Sunshine Law to be triggered.

Member Gottlieb asked if standing committees could be created to form PIGs. Chair Asuncion said that standing committees were not on the Agenda to be formed.

Chair Asuncion stated that we should form the legal and policy PIG at this initial meeting and then at the next meeting we will form the other PIGs and this will give staff time to suggest recommended language. Chair Asuncion confirmed, with Deputy AG Sunakoda agreement, that PIGs can make interim status updates to the Task Force. Chair Asuncion stated that unofficial working group meetings are not hereafter allowed.

Member Glenn clarified that the deadline and deliverable date of August 30, 2019 is to match Ms. Bass's carbon offset project reporting.

The following legal and policy PIG was moved and seconded with no objections:

(1) to identify and recommend measures to increase climate resiliency and improve greenhouse gas sequestration, build healthy soils, and provide greenhouse gas benefits to participate in carbon markets and/or establish best management practices;

(2) with the membership to be Scott Glenn, Ashley Lukens, Melissa Miyashiro, David Forman, and the 4 mayors designees;

(3) to coordinate and consult with any other permitted interaction groups, as needed within the scope of its task and so long as there is not a quorum of the members of the Greenhouse Gas Sequestration Task Force; and

(4) with a deadline and deliverable date of August 30, 2019 or as soon as possible thereafter.

Member Gottlieb had to leave the meeting at this time and quorum lost as there became only 10 voting members. Drs. Crow and Deenik present at the meeting have yet to be nominated by the governor and confirmed by the Senate pursuant to HRS § 26-34.

Chair Asuncion stated that we will defer on the formation of any other PIGs until the next meeting to give the staff time to work on the acceptable language for PIGs.

Chair Asuncion stated that we are going back in the Agenda to item VII for a couple of presentations.

VII. New Business

A. Report by U.S. Geological Survey on Baseline and Projected Future Carbon Storage and Carbon Fluxes in Ecosystems of Hawaii

Paul Selmants is with the USGS and was present to discuss a report on the Baseline and Projected Future Carbon Storage and Carbon Fluxes in Ecosystems of Hawaii released May 2017, which may be found on the Task Force [website](#). Dr. Selmants' Power Point Presentation on the USGS Survey may also be found on the Task Force [website](#). This report was mandated by Congress in 2007 to assess the carbon sequestration potential of natural ecosystems. There will be another updated report for Hawaii starting 2019 and incorporating the needs of this Task Force. USGS only used historical land use scenario and one fire scenario and projected that into the future. In total, natural ecosystems in Hawaii (for the 7 main Hawaiian Islands) store about 260 teragrams of carbon (1 teragram = 1 million metric tons). Most of that is in the soils, about 70% is in

the soils. 25% is in live biomass – living trees, shrubs and grasses. 5% is in detritus – dead wood and dead leaves on the ground. USGS also assessed ecosystem carbon balance. This means CO₂ gets absorbed into plants by bio photosynthesis and plants use that CO₂ and convert that into sugars to build biomass. Some of that biomass dies and falls into the soils where they get consumed by fungi and bacteria where they respire CO₂ back into the atmosphere. Living plants also respire CO₂ back into the atmosphere. So, the balance between CO₂ being removed from the atmosphere and then being reemitted is what is meant by carbon balance. There are other pathways of CO₂ loss from ecosystems back to the atmosphere by disturbing soil, burning biomass, etc. When USGS projects ecosystem carbon balance for Hawaii into the future, Hawaii is a net carbon sink. Ecosystems are absorbing more CO₂ from the atmosphere than remitting back into the atmosphere. It is about 0.4 teragrams of carbon per year being sequestered. Because of changes in land use and climate, ecosystem carbon balance will decline about 35% by 2060.

Member Lukens asked whether all lands in USGS's modeling designated agriculture are treated equal or are management practices taken into account. Dr. Selmants responded that for the current USGS report, the report did not take into account management practices but is doing that to some extent in the report update, e.g. woody crops versus other crops. Member Lukens asked whether grazing was taken into account. USGS's modeling did not incorporate grazing either and was just designated as grasslands. This should be updated with the new report.

The USGS modelled a hypothetical simulation of Koa reforestation on Hawaii Island, taking non-native grasslands and planting 25 square kilometers of Koa trees per year for 21 years with a tree density of 100,000 trees per square kilometer, which would cost approx. \$311 million. The Koa trees would be planted in areas where they would grow well above 750 meters in elevation with sufficient rainfall and this would increase the current Koa range about 60%. Reforesting Koa simulation shows a big net increase in carbon balance – thousands of tons of CO₂ per year, removing more CO₂ from the atmosphere. Attendee Dale Sandlin inquired if the modeling looked at improved pastures, grazing and active management in relation to Koa reforestation. USGS just treated them like grasslands. Attendee Dale Sandlin stated that was pretty dangerous and USGS was missing a very large component. USGS understands and wants to improve its modeling and wants to get this type of input. Under this scenario modeling, at its peak in one year, carbon sequestration is increased by 921,000 tons of CO₂, which under current California carbon market prices is \$12.5 million. Under this scenario modeling, over the course of 50 years, Koa reforestation scenario would basically pay for itself based on current California carbon market prices of \$15 per metric ton of CO₂. Dr. Deenik asked does sequestration decline after the peak. Dr. Selmants stated that young trees grow really fast and sequester more carbon and as they mature they sequester less. Member LaHaela Walter stated that sequestration should not be confused with actual storage. Rate of carbon storing per year goes up really fast initially as trees grow really fast when young and then peaks and the rate of carbon growth goes

down but this does not mean that carbon storage per acre goes down. The carbon storage is there and stays there. Member Farias stated that for this Task Force's mind set how much carbon is stored rather than rate may be what it should look at. Dr. Selmants reminded the Task Force that it is also interested in emissions. Dr. Selmants noted that depending on what land use intensity and change, sometimes changes in land use can alter the carbon balance more than changes in climate. Member Glenn asked if USGS looked at models in the State Sea Level Rise Report. USGS used Hawaii State specific models and not the State Sea Level Rise Report which was based off of IPCC models. USGS will look at everything. Member Glenn asked that all models be in sync and cross measurable. Member Farias inquired whether reforestation will do what we need done in the timeframe it needs be done in. Dr. Selmants does not know yet. Member Farias responded that monoculture is not going to do it. Single thought process is not going to get us there. For example, solar panels four feet off the ground is not going to work. Member Farias stated that he is a rancher with no owned land. Monoculture is not going to generate enough income. Reforestation is not going to do it. Even best management practices are not enough. The data is good and the baseline is need and something way more aggressive than status quo is required. Member LaHaela Walter stated that he is not advocating for reforesting the entire State. Knowing the literature, Hawaii has diverse areas that can sequester carbon. USGS is not suggesting reforestation of all of Hawaii. Attendee Dale Sandlin suggested that USGS look at the 2015 Agriculture Baseline. USGS will be incorporating that 2015 Agriculture Baseline into its update. Chair Asuncion inquired if the update will be incorporating any loss due to loss of grasslands. Dr. Selmants stated that much was not included in the \$311 million, such as cost of fencing, value of loss of grasslands, etc. USGS is not interested in telling people where to plant trees or where not to plant trees. USGS is interested in cooperating with the Task Force and having the Task Force tell USGS where it is interested in reforesting and asking how much carbon there will be if reforestation occurs or if land is turned into productive grazing lands. Member Glenn stated that the State emits 20 million metric tons of CO₂ per year and has a 0 electricity requirement by 2045. Ground transportation is another 5 million metric tons of CO₂ per year and has a 0 requirement by 2045 per Mayor's goal. This leaves about 10 million metric tons of CO₂ per year to figure out what to do with – part of that is aviation, bunker fuel and industrial processes. Hawaii is a net sink for AFOLU. Given that the Task Force's charge is to figure out for the State to be a net negative by 2045, how much potential does USGS see for the State for natural and working lands? Dr. Selmants responded that this depended on a lot of things and we need to build in disturbances in the modeling. There is no number to give right now.

B. Discussion of Proposed Projects for the Greenhouse Gas Sequestration Task Force

Chair Asuncion stated that Act 15 seeded the Task Force with \$150,000 we need to encumber by end of the fiscal year. The funds have a 5% restriction. So, we have \$150,000 minus 5% to play with and part of that is operations of the Task Force, rental fees for meeting rooms, etc. There are projects that were brought up during the Carbon

Farming Task Force and worthy of funding to the point that we can. We may not be able to fund the full amount. If we could get the information it needs, then it would be valuable to this Task Force. We can go back to the Legislature to ask for more funds in future sessions. Requests for future appropriations may come from PIGs or the full Task Force in appropriations or bills. We have three projects. This is just information for the Task Force.

Dr. Crow stated that the Science Working Group and she drafted a scope of work to collect data to initialize some of these decision support and planning tools such as Dr. Selmants just presented. The scope of work will focus on working lands to collate available data already existing in different forms and places and connecting with groups / people that have done the work and collecting additional data resources (measuring to target initialization of tools that already existed and initialized for Hawaii and refined and reconciled with other tools out there). The purpose of scope of work is to identify benchmarks and indicators, specifically the development of data resources required to generate a baseline for short and long-term benchmarks for increasing GHG sequestration and soil health and yields in natural and working lands in Hawaii's agriculture, forestry and other land uses in AFOLU sector. The scope of work is directed at UH Manoa to build local capacity and work with local capacity. Member LaHaela Walter asked if data from Dr. Selmants' model will be included. Dr. Crow responded that she will tap into Dr. Selmants' data and additional soil carbon data and NRCS data. Member Lukens' understanding is that there is not data available for differently managed agriculture and ranchlands. Dr. Crow responded that this is collection component of the scope of work.

Chair Asuncion introduced Jayme Barton of Hawaii Agriculture Research Center to discuss the other project. Ms. Barton will be building off of what Dr. Crow is doing. Ms. Barton has a pilot Healthy Soils Hawaii (HSH) project to implement Best Management Practices on farms and ranches to increase sequestration of carbon, increase organic matter, reduce tillage, and reduce other GHG emissions in soils. Funds will be provided to demonstration farms and ranches in the form of cost-shares and used to offset implementation costs as ranching and agriculture is very risky proposition. Ms. Barton will be patterning the HSH after the California Healthy Soils program. Ms. Barton highlighted the concern of overregulation by government on ranchers and farmers. Ms. Barton sees farmers and ranchers as land stewards helping with carbon sequestration.

Chair Asuncion introduced Member LaHaela Walter to discuss the last project with UH Natural Resources Environmental Management Department with Prof. Kirsten Oleson and her Resource and Environmental Policy Class. Prof. Oleson's class will be producing white papers on agricultural, aquacultural, forestry, and agroforestry practices / policies that could sequester carbon and GHGs and identify any incentives to promote sequestration.

Chair Asuncion stated that we will be trying to fund the two projects.

C. Report on Various Meetings / Initiatives

In the interest of time, there were supposed to be some reports (as itemized as section VII.C.1-4 below) on various meetings attended by staff. Instead of reporting, Chair Asuncion will have staff write up their meetings and post on the website to peruse at your leisure.

1. U.S. Climate Alliance Learning Lab – Washington D.C. July 11-13, 2018
2. Hawaii Macadamia Nut Association Annual Meeting – Hilo, Hawaii July 28, 2018
3. Coalition on Greenhouse Gases – Arlington, VA October 9-10, 2018
4. Other

D. Other

None

IX. Announcements

A. Next Meeting Date and Time – February 28, 2019 at 1:00 pm (TENTATIVE)

Chair Asuncion asked that Task Force members save the next meeting date and time for February 28, 2019 at 1 pm. Venue will be announced. Staff will try to find a large meeting room to accommodate everyone.

B. Other

Member LaHaela Walter announced that the project the Carbon Farming Working Group was working on will require a contractor if the Economic PIG when formed will adopt it. Member Glenn announced that at the September 2018 Global Climate Action Summit Gov. Ige issued a challenge to the world on behalf of the US Climate Alliance for the natural and working lands for states and other jurisdictions to improve their inventory methods of land based carbon flux, identify best practices to reduce GHG emissions, put plans in place to do that, and basically build towards being a net carbon sink for your jurisdiction in the natural and working lands sectors. Member Glenn stated that nonprofits around the world have commit to doing that, including American Forests that committed to planting 55 million trees across the US, The Nature Conservancy and C-AGG, that committed to enhancing sequestration capacity across the US. Hawaii is being a leader and it is starting to show.

X. Adjournment

Chair Asuncion adjourned the meeting at 4:10 pm.

