

# **CLIMATE ACTION, RESILIENCE, AND ENVIRONMENT COMMITTEE**

**Council of the County of Maui**

## **MINUTES**

**February 3, 2021**

**Online via BlueJeans Link**

**CONVENE:** 9:01 a.m.

**PRESENT:** VOTING MEMBERS:  
Councilmember Kelly Takaya King, Chair  
Councilmember Shane M. Sinenci, Vice-Chair  
Councilmember Gabe Johnson  
Councilmember Alice L. Lee  
Councilmember Michael J. Molina  
Councilmember Tamara Paltin  
Councilmember Yuki Lei K. Sugimura

**STAFF:** David Raatz, Supervising Legislative Attorney  
James Forrest, Legislative Attorney  
Nicole Siegel, Legislative Analyst  
Wilton Leauanae, Legislative Analyst  
Kasie Apo Takayama, Legislative Analyst  
Rayna Yap, Committee Secretary  
Keoni Shirota, Committee Secretary  
Jean H. Pokipala, Office of Council Services Assistant Clerk  
  
Axel Beers, Executive Assistant to Councilmember Kelly Takaya King  
Kate Griffiths, Executive Assistant to Councilmember Gabe Johnson  
Evan Dust, Executive Assistant to Councilmember Tasha Kama  
Lois Whitney, Executive Assistant to Councilmember Tasha Kama  
Jordan Helle, Executive Assistant to Councilmember Yuki Lei K. Sugimura  
Keisa Liu, Executive Assistant to Councilmember Gabe Johnson

**ADMIN.:** Keola Whittaker, Deputy Corporation Counsel, Department of the Corporation Counsel

**OTHERS:** Genesis Young (CARE-1(1))  
Lynn Britton (CARE-1(1))  
Lucienne de Naie, Sierra Club Maui (CARE-1(1))  
Tom Royer (CARE-1(1))  
Tapani Vuori (CARE-1(1))  
Peter Cannon (CARE-1(1))

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Lei Shannon Vanderheuvél (CARE-1(1))  
James Buika (CARE-1(1), CARE-38)  
Junya Nakoa (CARE-1(1)), CARE-38)  
Stuart Coleman, Executive Director, Wastewater Alternatives & Innovations (CARE-1(1))  
Christina Comfort, Program Manager, Wastewater Alternatives & Innovations (CARE-1(1))  
Joachim “Joko” Schneider, Project Coordinator, Wastewater Alternatives & Innovations (CARE-1(1))  
Robin Knox, President, Wastewater Quality Consulting, Inc. (CARE-1(1))  
Amy Hodges, Program Manager, Maui Nui Marine Resource Council (CARE-1(1))  
Michael Reyes, Senior Ecologist and Principal, Maui Environmental Consulting, LLC (CARE-1(1))

**PRESS:** *Akaku: Maui Community Television, Inc.*

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CHAIR KING: . . .*(gavel)*. . . Okay, good morning, everybody. Will the...the...it's 9:01 on my clock, my computer clock. Will the meeting of the Climate Action, Resilience, and Environment Committee of February 3rd, 2021, please come to order. Thank you, Members, for being here. And I'm going to go through starting with our...our Vice...Committee Vice-Chair, and then hopefully our last Member will be here by then. So today we have with us Committee Vice-Chair Shane Sinenci. Aloha. Good morning.

VICE-CHAIR SINENCI: Aloha kakahiaka, Chair. Mai Maui Hikina and haliu kākou.

CHAIR KING: Aloha kakahiaka. I'm going to go next to our Chair Alice Lee so she can tell us our greeting of the day.

COUNCILMEMBER LEE: Okay. Thank you, Madam Chair. Okay, where we buy all of our rugs, Persia, the greeting is salam. Salam.

CHAIR KING: Salam.

COUNCILMEMBER LEE: Yes.

CHAIR KING: Salam. Okay. Great, thank you. Salam to you. All right. Next Member, Gabe...new Member Gabe Johnson. After this week, I think we'll stop calling you that.

COUNCILMEMBER JOHNSON: Aloha, Chair. Good morning, everyone, and salam. And happy to learn more about all of the agenda items. Mahalo.

CHAIR KING: Aloha kakahiaka. All right, next we'll go to Member Yuki Lei Sugimura. Kula.

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COUNCILMEMBER SUGIMURA: Salam, everybody. My neighbor, Mr. Johnson and I are in the County Building, so I'm glad to have my neighbor down the hall. And good morning, everybody. It's a really, really windy day in Wailuku. I...I can actually hear it in my office. Good morning.

CHAIR KING: Good morning. Good to see you. We have Member Mike Molina from under the bridge.

COUNCILMEMBER MOLINA: Hey, salam and good morning to you, Madam Chair, and to my colleagues and everyone else tuning in on this beautiful day out here in Makawao under the virtual bridge.

CHAIR KING: Salam and good morning. And last not but not least, Councilmember from West...West Maui, Tamara Paltin.

COUNCILMEMBER PALTIN: Salam and aloha kakahiaka kākou mai Maui komohana.

CHAIR KING: Salam and aloha kakahiaka. Thank you, everybody, for being here. My name is Kelly King, I'm the Chair of the Committee, and happy to have you all here today. Real...very excited about our subject matter. Just as a reminder for everybody to silence your noisemakers, cell phones, whatever you have that...when you're...when you're talking at least. We have no non-voting Members here. Today, we have from the Administration, a little bit later we'll have Herman Andaya, the Administrator from the Maui Emergency Management Agency. He's due at...somewhere between 11:15 and 11:30 after a meeting. And we have with us today Deputy Director from Department of Environmental Management, Shayne Agawa, as well as our new Deputy Corp. Counsel member who will be taking over for Rachel...Richelle Thomson, Keola Whittaker is on with us today. Are you there, Mr. Whittaker?

MR. WHITTAKER: Yes. Good morning. Salam. Aloha kakahiaka.

CHAIR KING: Good morning, and welcome to the Committee. We're very excited to have you, and thank you for your intro email that you sent me, appreciate that. We also have...I've invited, but we haven't got confirmation of our Environmental Coordinator Makale'a Ane for the Mayor's Office of Climate Action, Sustainability, and Resiliency. From the same office we also invited Alexander de Roode, who's our Energy Commissioner. Other representatives we have today, Members, are...who will be presenting today, Robin Knox, who's the President of Water [sic] Quality Consulting, Inc.; Stuart Coleman, Executive Director of Wastewater Alternatives & Innovations; Christina Comfort, Program Manager at...at the same...at the Wastewater Alternatives & Innovations; and he's also bringing...and for...these are for Q&A, Joachim Schneider, who's their Project Coordinator. We also have Amy Hodges, the Program Manager from the Maui Nui Marine Resource Council. Aloha, Amy. Michael Reyes, Senior Ecologist and Principal, Maui Environmental Consulting. And Michael Reyes, you may...you may recognize his name from his work on our local watershed. Oh, there he is. Hi, Mike. Our Committee Staff is led by a Legislative Analyst, Nicole

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Siegel. Nicole, thank you for all the hard work you've been doing on this Committee. We have as a backup Legislative Analyst, Wilton Leauanae. Thank you, Wilton. Rayna Yap, our Committee Secretary. It's great to be working with you again, Rayna, because we worked together when I was chairing the Planning Committee my first term. Our Legislative Attorney, James Forrest. And I'm not sure if now that the other James has vacated OCS if we're back to calling you James or still calling you Forrest. So...so you let us know what you'd like to be called. And with our Council Services, Assistant Clerk Jean Pokipala. So I would just really give a shoutout to the Staff because they've been doing an excellent job with this Committee. Members, today we have on the...two items on today's agenda, CARE-1(1), Addressing the Impaired Status of Mā'alaea Bay. And CARE-38, the Operational and Budgetary Review of the Maui County Emergency Management Agency. So these are...we're going to be doing some on...trying to fit in the ongoing oversight before budget in...with some of these other issues. And I really want to thank Herman Andaya for making an effort to be here later on. So let's begin with public testimony. Staff, do we have testifiers today?

MS. SIEGEL: Chair, yes, we do.

CHAIR KING: Okay. Oral testimony via phone or teleconference will be accepted. Testifiers wanting to provide video testimony should have joined the online meeting via the BlueJeans meeting link listed on today's agenda. And testifiers wanting to provide audio testimony should have participated via phone conference by dialing 1-408-915-6290 and entering meeting code 470 076 045, also on today's agenda. Written testimony is highly encouraged using the eComment link listed for today's agenda on [mauicounty.us/agendas](http://mauicounty.us/agendas). And I'll note that we did get five very supportive pieces of testimony, written testimony to the Committee on today's agenda. We can talk about that later on when we get to the first issue. Instructions on how to submit testimony via eComment can also be found at [mauicounty.us/ecomment](http://mauicounty.us/ecomment). So we're going to move on to oral testimony. Oral testimony is limited to three minutes per item. If you're still testifying beyond that time, I will give you one minute to complete your testimony. And when testifying, please state your name, if you are testifying on behalf of an organization or just yourself, and please inform us if you're a paid lobbyist. Also be mindful of the use of chat during the meeting. Chat should not be used...should not be used to provide testimony or chat with other testifiers. If you're here to provide testimony, please be courteous to others by turning off your video and muting your microphone while waiting for your turn to testify. Once you are done testifying, you will be asked to disconnect from the call; however, you're welcome to continue to view the remainder of the meeting on *Akakū* Channel 53 or on [mauicounty.us](http://mauicounty.us). Participants who wish to view the meeting only without providing testimony, please also disconnect at this time and view the meeting on *Akakū* Channel 53 or visit [mauicounty.us/agendas](http://mauicounty.us/agendas). Only Councilmembers, Staff, and designated resource personnel will be connected to the video conference meeting once testimony concludes. So I wanted to remind all Committee Members, Administration, and the public to please be patient if we run into technological issues. Those seem to crop up from time to time. And now we'll go ahead and proceed with oral testimony. Staff has been monitoring today's chat for the testifiers, and we'll...we'll do our best to

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take each person up in an orderly fashion. All right, Staff, can you call the first testifier?

**. . .BEGIN PUBLIC TESTIMONY. . .**

MS. SIEGEL: Chair, the first person signed up to testify is logged by...as Scott, and the second is logged in as Owner. You can go ahead and unmute yourself, Scott.

UNIDENTIFIED SPEAKER: Scott?

CHAIR KING: Okay, if you're there, we don't...we see your square, but we don't see your video or your...and you seem to be muted. Okay, there's unmute. If you'd like to unmute your video so we can see you.

MR. YOUNG: Hi. Just wanted to testify in support of...of cleaning up Mā'alaea. That's really all I wanted to say, just to be in support of that, it's very important. And you know, it's kind of a disaster there. So that's all. Thank you.

CHAIR KING: Okay. Well, since...and since we know you...some of us know you as Genesis, what name would you like us to use for you for the...

MR. YOUNG: Genesis.

CHAIR KING: Genesis Young?

MR. YOUNG: Yeah. I can't figure out how to get rid of the other one on the --

CHAIR KING: Okay.

MR. YOUNG: -- interface. I'll work on it.

CHAIR KING: All right. Any questions for our testifier? Thank you so much. And...and also just, Members, Genesis is also on the Climate Action and Advisory Committee, that volunteer group. So thank you for being here, appreciate the input, and I hope you can stay and watch the meeting.

MR. YOUNG: Thank you.

CHAIR KING: Thank you. Next testifier?

MS. SIEGEL: Chair, the next person signed up to testify is logged in as Owner, to be followed by Lynn Britton.

CHAIR KING: Owner. The person who signed up as Owner, can you unmute yourself? Unmute your video, unmute your microphone, and begin your testimony. Okay. We're seeing kind of light...lights...glowing light on your square, so maybe we'll come

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back to the person logged in as Owner. They seem to be having some difficulty with the video and the audio. Are you there? One more chance. Okay. We'll go to the next testifier and then come back.

MS. SIEGEL: The next person signed up to testify is Lynn Britton, to be followed by Lora.

CHAIR KING: Okay. Aloha, Lynn.

MS. BRITTON: Good morning, everybody. Aloha. Salam. I did...I did write and submit written testimony, so I won't go into the whole letter. I just want to really thank the Chair King and the Committee for taking up this very important issue. Just talking to Russell Sparks at DLNR and Allen Tom at the Whale Sanctuary and of course, Lucienne de Naie has been with us from the beginning on this. I think it's a very important discussion and way overdue. So thank you so much. I am here to participate in any way I can. Aloha.

CHAIR KING: Okay. Aloha. Are there any questions for Lynn? Member Paltin?

COUNCILMEMBER PALTIN: Thank you, Chair. Thank you, Ms. Britton, for coming and your diligence for all matters Mā'alaea. And I just was wondering, you know, like because the...the impaired status of Mā'alaea Bay also has a lot to do with the mauka portion, if...if you were up to speed on the progress on the purchase.

MS. BRITTON: Thank you for asking. Yeah, it's...it's very exciting. I was explaining to Chair King a little bit before we started the meeting, we are going to be talking to Scott Fretz at State Forestry and Leah Lani Rothbaum from Trust for Public Lands, and Lucienne. We'll be discussing tomorrow how we can move this forward. So it's very exciting. Forestry is very interesting...interested in owning and managing the property, and we...we have plenty to report to the Committee as we go forward. Thank you so much for asking.

CHAIR KING: And Member...

COUNCILMEMBER PALTIN: Thank you for that update. Oh.

CHAIR KING: Is that the only...is that the only question, Member Paltin?

COUNCILMEMBER PALTIN: Well, I just...if I could follow up, because I did get an email from the owner asking about scheduling, and so maybe if...if you could include them in...in your progress update or something.

CHAIR KING: Yeah, I was going to ask the Committee if they wouldn't mind having Ms. Britton...either Ms. Britton or Peter Cannon on as resource people when we get to Q&A if you have any questions for Mā'alaea Village Association and their progress on this. So if there's no objections, we'll designate Lynn as a...as a resource. And...

**COUNCILMEMBERS VOICED NO OBJECTIONS**

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CHAIR KING: Okay, great. And when Peter comes on we can see if he wants to...if he has any...anything to say as well.

MS. BRITTON: Thank you.

CHAIR KING: Committee Vice-Chair Sinenci, you had a question? Oh, just lose him. If...I saw him with his hand up earlier. Committee Vice-Chair Sinenci, did you have a question?

VICE-CHAIR SINENCI: Sorry, no, that was my question if she could stay on --

CHAIR KING: Oh.

VICE-CHAIR SINENCI: -- as a resource.

CHAIR KING: Okay.

VICE-CHAIR SINENCI: Thank you.

CHAIR KING: Oh, excellent. Okay, great. Any other questions for Ms. Britton? Councilmember Sugimura?

COUNCILMEMBER SUGIMURA: Yeah, thank you. So for the benefit of the public, just because Lynn has such a vast passion and knowledge, I wonder if you could just do a brief summary of what your testimony said just so that we can bring the community in with this discussion because you have the history. So if...if you would just allow her to...you know, that...that's my question for her, if you would allow her to just briefly talk about that.

MS. BRITTON: Thank you, Yuki Lei, for putting me on the spot.

COUNCILMEMBER SUGIMURA: Well, you're so passionate, right? We appreciate you.

MS. BRITTON: I know, but I'm also very emotional about the subject, so...

COUNCILMEMBER SUGIMURA: Yeah.

MS. BRITTON: Basically the Council has heard our testimony for several years now about the importance of preserving the open space at Mā'alaea Mauka, as well as the coastal erosion issues. You've approved funding for the coastal erosion study, which we're working with Planning Department on now on the RFP. And also, today you will be hearing more about the current...for a regional wastewater treatment plant for Mā'alaea. So basically my testimony said all of this was very important to Mā'alaea, and it was all related to the value of Mā'alaea Bay. And I also pointed out the study that was done in 1971 by the University of Hawai'i that talked about how valuable how Mā'alaea Bay was and their concerns for development in the area that might

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affect the watershed and the bay. So that's pretty much what my testimony said. Thanks, Yuki Lei.

COUNCILMEMBER SUGIMURA: Thank you for sharing. Thank you, Chair.

CHAIR KING: Thank you, Member...thank you, Member Sugimura. So...okay. I think no other questions, we'll go to the next testifier, and then ask Ms. Britton to standby.

MS. SIEGEL: Chair, the next person signed up to testify is Lora, to be followed by Lucienne de Naie.

CHAIR KING: Lora? If you can unmute yourself, start with your full name.

MS. SIEGEL: Looks like she may have dropped from the call.

CHAIR KING: Okay. Let's go to the next testifier, and then we'll come back if she gets back on.

MS. SIEGEL: Ms. de Naie.

MS. DE NAIE: Good morning, everyone. I'm Lucienne de Naie. I'm testifying today on behalf of the Sierra Club Maui Group, who authorized me to submit some comments. Sierra Club has tracked things at Mā'alaea for many years...wow, probably like 35 or something, you know, back into the '80s, and it's a hotspot. You know, it's actually one of the most culturally valuable and ecologically valuable areas of Maui, but it's a place where the combination of having tall mountains and high winds and a lot of different factors all converging at once has meant that the waters have had a lot of pollutants introduced into them. And so like everyone else who is concerned about Mā'alaea, Sierra Club Maui would love to see solutions moving forward. So we are so grateful to this Committee, to Chair King and every one of the Members who's taking an interest in this. I just want to summarize by saying that what happens in the bay depends upon what happens in the land, and so the solutions of actually managing an entire watershed, the Pohakea Watershed from the mountain to the bay, including the Spencer lands in between as one unit is very important. So we strongly support acquiring those lands and using them as a...as a management area. They are very productive ag lands as well. They have some of the deepest topsoil on Maui. They are culturally important as well because they have an ahupua'a boundary right through the...the...slicing through the land. So this was a place that in ancient times it was decided that, you know, two ahupua'a met each other. So we really need to move forward with a comprehensive plan that looks at the wastewater issues from the condos, that looks at the management of the silt coming down from the mountains, that looks at the impacts from the winds and the dust being carried from the fields onto the reefs. It's...it's really a multiprong approach. So we just really support any efforts that the Committee can make to move forward on very practical solutions. So appreciate the topic being brought up today.

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CHAIR KING: Okay. Thank you, Ms. de Naie. Any questions for Ms. de Naie? If not, thank you so much for your words and for your support for the...the item that we're going to be discussing.

MS. DE NAIE: Very good. Aloha.

CHAIR KING: Next...aloha.

MS. SIEGEL: Chair, the next person signed up to testify is Tom, to be followed by Tapani Vuori.

CHAIR KING: Okay. Tom? Okay, you need to unmute yourself. We can see you, but we can't hear you.

MR. ROYER: I...I just unmuted myself. I...I did not join the list to testify. Sorry.

CHAIR KING: Oh, okay. Okay. That's okay.

MR. ROYER: I...I...I've been...I can mention that a positive note is that the...the Diuron that I studied in the early...about 2013, I think, I studied the influx of Diuron from the cane fields. And of course, the Diuron no longer is coming into the cane fields, and Diuron has a very short half life of...of several years. So Diuron is not a problem.

CHAIR KING: Oh, okay. Great. And Tom, can you give us your last name, just for the record?

MR. ROYER: Royer, R-O-Y-E-R.

CHAIR KING: Okay, great. Thank you so much. Thank you --

MR. ROYER: Thank you.

CHAIR KING: -- for being here. Any questions? Oh, we have questions for you if you're willing to answer them.

MR. ROYER: I'll try.

CHAIR KING: Okay.

COUNCILMEMBER SUGIMURA: Just...just...just...

CHAIR KING: Our Committee Vice-Chair Sinenci.

VICE-CHAIR SINENCI: Was just wondering what was Diuron, is that, like, just runoff?

MR. ROYER: It's...it's...Diuron is a herbicide that A&B used to use on the sugar cane fields, and the...in Australia, they have banned any use of Diuron on stream flows that enter

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the Great Barrier Reef. They had proof that Diuron was killing the corals there. So I...I did a study of Mā'alaea Bay and I found Diuron coming in from the stream near Island Sands, but I could not find any significant concentrations within the bay.

VICE-CHAIR SINENCI: Thank you, Tom.

CHAIR KING: Great, thank you. And Member Sugimura has a question.

COUNCILMEMBER SUGIMURA: Thank you, Tom. I was going to ask Mr. Sinenci's question. But I'm just curious then when you did the study. The year was it?

MR. ROYER: Pardon?

CHAIR KING: Tom, she wants to know when you did the study.

COUNCILMEMBER SUGIMURA: Yeah.

MR. ROYER: As I remember, it was about 2012 and '13 I did the sampling. I was the only one that was excited with having a storm come in and...and get that stream flowing. So I was out there right after that, doing...doing samples...

COUNCILMEMBER SUGIMURA: And you found no problem...you found no problem anymore? Is that what you...

MR. ROYER: And...and I...I assume that there is no problem anymore. They...the other thing that they used was they used Roundup. If the Diuron didn't work, they used Roundup.

COUNCILMEMBER SUGIMURA: Thank you.

CHAIR KING: Okay. Thank you, Member Sugimura. Other questions? If not, we'll move on to the next testifier, Tapani.

MS. SIEGEL: The next testifier is Tapani Vuori, followed by...

MR. VUORI: Okay. Salam and aloha kākou...kākou, everyone.

CHAIR KING: Salam.

MR. VUORI: First of all, thank you for the CARE Committee and Maui County Council for setting this meeting up and starting to look...really look at the Mā'alaea issue...community...watershed and the environmental issue. I would like to echo what Lucienne said earlier. I think it's important that we look at this issue holistically. So everything really is connected. The watershed, it starts from the mountain and it impacts the nearshore ocean. That is why it's so important that even our Federal partners with the NOAA sanctuary are involved with this effort because we have such a pristine water...water area, you know, with the sanctuary out

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here. So we can actually improve our specific area and location here with the Mā'alaea Bay. I...I think it's going to take the entire community working together with all the stakeholders, and it needs to be all inclusive dynamic where we all come together, that is now happening. I know there has been a lot of people working over 30 years on this issue. Now we are actually starting to see things coalesce and come together, and I'm really, really happy to see things come together. And really appreciate Maui County Council really starting to focus on this to the point that you are. So I would like to, from my personal side, I'm here to help any way we can help or I can help and...and with the resources Maui Ocean Center has. We are part of the community, and we need to add value to the local community, so this is where I'm personally coming from. So thank you again for your effort, and thank you for your time.

CHAIR KING: Mahalo, Tapani. Any questions for the testifier? No. If not, thank you so much for being here, for your words.

MR. VUORI: Thank you.

CHAIR KING: Next testifier?

MS. SIEGEL: Chair, the next testifier is logged in as Peter, to be followed by Lei Shannon Vanderheuvell.

MR. CANNON: Can you hear me?

CHAIR KING: Yeah, we can.

MR. CANNON: Okay, thank you. Now, my name is Peter Cannon, and if I say Mālaea instead of Mā'alaea, please forgive me because I grew up here. I was born and raised right here in Mā'alaea, and can remember, from a personal side, this bay was like Tahiti when I grew up. And I can tell you that the snorkeling and the diving was far better than Molokini is today, when we...in my memories. The two biggest problems with...with the impaired status of Mā'alaea Bay are manmade. One is the injection wells, and our community's been proactive in trying to find a reasonable wastewater plant or try to come together and create a regional wastewater plant. We're very close. We have an offer from the...a consortium, including Cambrian and Hawaiian Electric as the financier to build one in Mā'alaea. We're missing one thing, and that's the conveyance system that would take the sewage from the various condominiums and take it to the plant. We've had the cooperation and wonderful offer from Mahi Pono to give the land. We asked for two acres, and they offered ten to build the plant out of the tsunami zone and have a place for the water to go and be absorbed. And that same green belt could be a windbreak and a firebreak for Mā'alaea. So the community's been very proactive, and that's been going on for over two years now. The...the second problem, also manmade, is the dirt that comes into the bay, and really, if you look into it, you'll...in antiquity, Mā'alaea Bay was protected by the Mā'alaea Mudflats. The mudflats were a natural filtration system. And when we...when the State created that highway into four lanes, they created a concrete

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culvert that takes even all the water from Kanaio Stream and four...four streams total, and there's more than four when it rains, all that dirt coming down the mountain goes into a culvert and comes down into the...what's now a flood zone or...or retention pond that can't handle the load. And...and a very quick fix would be turn...turn Kanaio Stream back to its natural flow, and it'll go right into the mudflats. And you can even see the...the stream on Google Earth. Having Mā'alaea...Mā'alaea Bay is an economic engine for...for Maui. And the Ocean Center has the seed stock, they could even rebuild exotic corals that were once found in Mā'alaea Bay. Nature is very resilient. If we could just get the bay clean enough to accept the corals back, it...it...it'll all...it would all come back to what it was before. I think that's all I have to say. And I'm sorry my video is not aimed right.

CHAIR KING: That's okay. We can...we can see most of you, it's just cutting off your forehead. There we go. Okay. So Members, before I ask if there are any questions, I would like to also designate Peter Cannon as a resource person so that if you have questions about any of his testimony, you can ask them later after the panel discussion. Any objections?

**COUNCILMEMBERS VOICED NO OBJECTIONS**

CHAIR KING: Okay. Can you hang around, Peter? And then...and just to see, after the presentation, if we have further questions?

MR. CANNON: Certainly. Thank you.

CHAIR KING: Great. Thank you. Thank you, Members. Okay. Next testifier?

MS. SIEGEL: The next testifier is logged in as Lei Shannon Vanderheuvél, to be followed by Kimberly Willenbrink.

CHAIR KING: Lei? Oh, there she is.

MS. VANDERHEUVEL: Can you...can you hear me?

CHAIR KING: Yeah, we can hear you.

MS. VANDERHEUVEL: Okay.

CHAIR KING: We can see you.

MS. VANDERHEUVEL: Yeah. My computer wasn't working very well. Just...I didn't actually plan on testifying, I was just trying to listen in. But I...I will concur with Lynn Britton and Peter Cannon. I'm also on the Mā'alaea Village Association Board, and we...we've been trying to...our hardest to try and organize different things to...to make aware of all the problems, the erosion, where it's coming from, just trying to find solutions. And I just thank you for bringing this matter up on your...on your CARE meeting, and I just appreciate everything you're trying to do for us. Thank you.

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CHAIR KING: Okay, mahalo, Ms. Vanderheuvél. Any questions of our testifier? Okay, thank...we appreciate you being willing to speak even though you just came to listen. Thank you so much for being here.

MS. VANDERHEUVEL: Yeah. You're welcome.

CHAIR KING: Next testifier?

MS. SIEGEL: Looks like the next testifier is James Buika, to be followed by Junya Nakoa.

CHAIR KING: Oh, okay. Great.

MR. BUIKA: Aloha, Chair and County Council. My name is James Buika, I am a Planner in the Planning Department, and as some of the others, I did not plan on testifying. I was planning on just doing a good day's worth of work and listening and learning from the experts. But I see also you have Herman Andaya and the Emergency Management Agency on your agenda. And I spent the day yesterday, me and Tara Owens with Peter Cannon out at Mā'alaea along the shoreline there, discussing some issues on the site visit. So they kind of go together here. We are working on the RFP. Tara is working on it, it's over to me to review, so we're making progress on the coastal erosion assessment that Council last year funded at \$175,000. So we're working diligently on that, making progress. Tara is on another Sea Grant meeting along with Wes Crile, so they...they would be listening, but they're tied up. And I just...the purpose of my testimony is to make you aware of a program that probably...well, is going through Maui Emergency Management Agency. It's a new FEMA grant program called BRIC. So we need to just follow the yellow brick road is kind of my motto here. It's...but it's B-R-I-C, Building...Building Resilient Infrastructure and Communities. There is money this year, and we're applying for some grant money. It...it...nature-based...nature-based infrastructure hazard mitigation projects are applicable and eligible, and so we've applied for a couple so far this year at about \$500 million. The Feds pay 75 percent of the cost of these projects. And next year because of the pandemic, it's tied to the pandemic, it will be over \$4 billion of...of grant aid available. So I want you to be aware of it. And to me, just two final comments, I have been...part of my job description actually is to work with the Office of Planning on the Ocean Resource Management Plan, and we're having a meeting tomorrow. And also, I am the current Chair of the State Hazard Mitigation Forum, a Statewide planning forum for prioritizing grant projects. So my goal is to bring grant dollars to Maui County. I also would like to...and my final comment is through Yuki Lei and other Councilmember efforts, we have our community facilities district ordinance in place where private sector folks can tax themselves for a regional coastal erosion project or other projects. So my model going forward that I'm attempting to explore is 25 percent funded by private regional self-tax community facilities district people, matched 75 percent by the FEMA BRIC program as we go forward. So we potentially could reduce our...our regional coastal erosion project costs by 75 percent if we're smart. So I'm following this. I'm working closely with Herman Andaya, who's sponsoring some projects through Hawai'i

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Emergency Management Agency. So I'll...I'll leave it at that. I just want to make you aware of it. I think it's a good private/public partnership as we go forward. There will be lots of money next year that I hope we can take advantage of, and we have some pilot projects we're attempting to run through the FEMA mill at this point. So I'll leave it there. Thank you, Chair. Back over to you.

CHAIR KING: Okay. Mahalo for that...mahalo for that information. That's great. We'll...we'll definitely invite you back to the Committee, and hopefully you can do a presentation. And let us know how we can help you too through the Committee, if you need letters of recommendation for the grant.

MR. BUIKA: Thank you. That's...

CHAIR KING: We want...we want to see the "BRIC" house.

MR. BUIKA: Yes.

CHAIR KING: Okay. Question...Member Paltin, you had a question, followed by Member Sugimura.

COUNCILMEMBER PALTIN: Thank you, Chair. Thank you, Mr. Buika, for being here and sharing that testimony with us. I think in Member Sugimura's Committee the last time we were talking about trying to make like a policy criteria of what would qualify for the CFD. And I was wondering, you know, like it's great to hear there's going to be choke money, but is there a limit? Like if...if all the coastal around the whole County wants to do some sort of thing because of the impending sea level rise coastal erosion, would we be able to handle that, or do we need to like kind of develop a criteria of how we're going to choose which CF...which areas qualify for CFDs in your mind?

MR. BUIKA: Well, we have our...oh, am I...yeah, you can hear me, right? Okay. We do have our Maui County Hazard Mitigation Plan, where we attempt to identify projects. And any projects that we do identify, whether they're Maui nui wide, Maui...Maui Island or specific beach cells, we need to identify them in our County Hazard Mitigation Plan, and that's easy to do, easy to update. And then they become identified and recognized by our policymakers that this a priority. So I think that's the way to do it. I think certainly we need to prioritize it, prioritize these projects. We could help you prioritize projects. But as I study this for over a decade now, it...kind of an epiphany for me working with Kahana Bay and Napili Bay where we are applying for some dollars, one of the big hurdles is the financing. You know, we do the EIS, we do the education outreach, community design, community outreach, we do the permits, but where we...certainly not my expertise, but where we are falling short is how do we finance a \$20 million project. And I think this is...this is a big breakthrough where...so...so there are dependencies on all these projects. Identifying them certainly is the first step, and then putting these pieces together, I think, is critical, including the financing. So yeah, whoever...however we can do a CFD for whichever projects...and what it does is it...because the limitation on the FEMA projects always

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is the match, the 25 percent match through my history of working with the program for 25 years. Yes, we can grab these dollars, but FEMA needs a distinct match. So if we have private entity taxing themselves with the match, we're in. We...we flow right up to the top, to the top ten percent nationwide. It is a nationwide competitive program, but financing is key, I think, as we all know. Thank you.

CHAIR KING: I don't want to get too much into (*audio interference*) on this because I do want to have you back so that we can --

MR. BUIKA: Thanks.

CHAIR KING: -- do a follow up. But we also...

MR. BUIKA: Thank you.

CHAIR KING: Thank you so much for...for bringing that to our attention. And we can also, Member Paltin, ask Director Andaya about...you know, since they're working together on this. So when he comes on later on, you can ask him questions about, you know, how they're going to figure out standards for this kind of thing.

COUNCILMEMBER PALTIN: Okay. I just had one follow up if...if that's all right?

CHAIR KING: Okay, if we can make it quick. We've got other testifiers.

COUNCILMEMBER PALTIN: Sure. I...my...my one follow up would be like, you know, if we're doing these mitigations for coastal erosion, but they're not a long-term solution because of sea level rise, could we link it to folks who are willing to plan for managed retreat as a policy, in your opinion?

MR. BUIKA: Yes, for sure. I mean, that is another...as you know, as we all know, it's easy to say managed retreat, it's more difficult to do it, and there are many steps. So we need...and we potentially could get dollars to study specific situations for managed retreat. Thank you.

COUNCILMEMBER PALTIN: Awesome.

MR. BUIKA: Thank you, Kelly.

CHAIR KING: Okay, thank you.

MR. BUIKA: Thank you.

CHAIR KING: You're my...you're my new best friend, Jim. So thank you for being here.

MR. BUIKA: Thank you. That's always good to hear.

CHAIR KING: I think we have one more question from Member Sugimura.

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MR. BUIKA: Good morning.

CHAIR KING: You're...you're muted.

COUNCILMEMBER SUGIMURA: There we go. Mr. Buika, this is like a gift from all your years of being in the...the industry, I guess. But on the...so you're saying for Mā'alaea this is a possible solution because that's what's on the agenda, and after this meeting I'm going to call you so we can talk about Kahana, Napili, and all the communities that are coming to us looking for help with the CFD. So is that...

MR. BUIKA: Yes, it...yes, it is. I had a conversation yesterday with Peter Cannon on the shoreline about matching CFD for Mā'alaea, you know, down the line obviously, and tying it in with the FEMA BRIC program. So yes, the answer is yes, that would be great. Thank you.

COUNCILMEMBER SUGIMURA: All right. And then I'm going to call you after this meeting. I want to know what you're doing with Kahana and Napili. Thank you.

MR. BUIKA: Okay.

CHAIR KING: Okay, thank you --

COUNCILMEMBER SUGIMURA: It's not on the agenda.

CHAIR KING: -- so much, Jim. Yeah, any other testifiers who have any information about grant money, we can...we can push you to the top of the list. No. Next testifier, Staff?

MS. SIEGEL: Chair, the next testifier is Junya Nakoa, and then we can try to go back to Owner. It looks like they're still logged on the call.

CHAIR KING: Okay, great. Aloha, Junya.

MR. NAKOA: Good morning. Yeah, like everybody said, they wasn't even going talk, I just going listen, but --

CHAIR KING: Oh, okay.

MR. NAKOA: -- since James...since Buika went bring up the Kahana and the Napili one, last week the Planning Department had to decide about how the people that was working on the Hololani project, you know what I mean, they was fined so many thousands of dollars, and then they reduce the fine. So whatever you guys do in this...in this area, make sure the guys not screwing 'em up, and make sure they making 'em better, not...not making worse. Making sure that they not...you know what I mean, the machine is the right machine going in the ocean, if they is going to put one. You know, we got to start doing all this kind stuff all the over island, and I

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just wanted to educate myself on what was going happen in Mā‘alaea because I know get plenty (*audio interference*) I...I learned choke from that Tara Owens lady. They...they awesome. They came in Kahana and I listened but...for get educated so we can get our people all together for...for help support. Mahalo.

CHAIR KING: All right, mahalo, Junya. Any questions for testifier? Are...are you still there? We have a question from Committee Vice-Chair Sinenci.

MR. NAKOA: Okay.

VICE-CHAIR SINENCI: Mahalo, Chair . . .(*inaudible*). . . Aloha, Junya. Mahalo for being here today. I was just curious, you mentioned some fines that were reduced. Can you elaborate on...on what...what type of fines for...for what?

MR. NAKOA: I think the Hololani and the Goodfellows, that penalty was \$75,000 or something, and they went reduce down to 20. Something about too harsh the penalties. But again, these guys...you know, the thing was a long, long, long meeting, the Planning, we had to go through. Was pretty much all day and all night, but...

VICE-CHAIR SINENCI: Was that for having heavy equipment within the shoreline area?

MR. NAKOA: Well, the...the buggah was...the heavy equipment was actually in the water, and...and they had...the...the charge was about barricades, certain blockage or something they never have up. But yeah, that was one big problem over here in Kahana so I just like make sure the thing no happen again, yeah? Because we no like be in the same position, screwing up our ocean like the...the stupid Mayor went push for the...for the injection wells, you know, the ocean is getting all screwed up, but who pay...who pay for ‘em? Us, the Hawaiians, the people of Hawai‘i. You know, we pay for ‘em with the fines or we pay and we deal with the...the repercussions of the screw-up. So enough already, gotta stop that kind stuff.

VICE-CHAIR SINENCI: Okay. Mahalo for...for your testimony. I...I do understand that you have to...if...if you’re inside the water, you need some kind of marine certification to be...to be working within the...along the shorelines. Mahalo for your testimony.

MR. NAKOA: Yeah. Yeah, yeah. They was talking about that, and they was saying that it could be one State issue or because of DLNR, I don’t know. They was going back and forth. You know, they had the...they had their...they had their lawyers, so they had the...they had the...it’s the million-dollar lawyers for tell all this kind other stuff, yeah? So yeah, and I did bring that up.

VICE-CHAIR SINENCI: Thank you.

MR. NAKOA: Mahalo, brah.

CHAIR KING: Mahalo, Junya.

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MR. NAKOA: Because I was going to thank you guys.

CHAIR KING: Thank you. Thank you for your testimony. Thank you for being our watchdog. Okay. Staff, are we going back to the person who identified as Owner?

MS. SIEGEL: Owner, if you can go ahead and unmute yourself.

CHAIR KING: They're still having some technical difficulties. Can you try...maybe just turn off your video and turn...and unmute your audio so you can just speak? Okay, anything...

MS. SIEGEL: They're unmuted on our end.

CHAIR KING: Okay. Yeah, I don't know...

MS. SIEGEL: They didn't (*audio interference*) that they wanted to testify, we just wanted to give them the opportunity, just in case.

CHAIR KING: Okay. All right. Okay. Do we have any other testifiers signed up?

MS. SIEGEL: Chair, no one else has indicated they'd like to testify.

CHAIR KING: Okay. Is there anybody else wishing to testify who's on the call? Unmute yourself and speak up. Otherwise, if there are no objections, I'll go ahead and close public testimony.

**COUNCILMEMBERS VOICED NO OBJECTIONS**

CHAIR KING: Okay. Are we...any objections to receiving written testimony into the record?

**COUNCILMEMBERS VOICED NO OBJECTIONS**

CHAIR KING: Thank you.

**. . .END OF PUBLIC TESTIMONY. . .**

CHAIR KING: Yeah, we got some really good testimony for...folks, if you got a chance to read it from NOAA and from DLNR, very supportive and wanting to know how they can help.

**CARE-1(1): ADDRESSING THE IMPAIRED STATUS OF MĀ'ALAEA BAY**  
(RULE (7B))

CHAIR KING: So today we're going to start with discussing the impaired status of Mā'alaea Bay with a presentation and discussions to help us understand what the impaired status means, why the bay is considered impaired, and what can be done to improve

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its status. Today Members, we have with us Robin Knox, President of Water [sic] Quality Consulting, Inc. From Wastewater Alternatives & Initiatives [sic] we have Stuart Coleman, Executive Director; Christina Comfort, Program Manager; and Joachim Schneider, Project Coordinator. We have Amy Hodges, Program Manager from the Maui Nui Marine Resource Council, and Michael Reyes, Senior Ecologist and Principal, Maui Environmental Consulting, LLC. So we...they're...they're here...they're here as experts on the impaired status of Mā'alaea Bay to present to us, provide comments, and ask...ask questions that we may have. And also from the County departments we have Shayne Agawa, Deputy Director of Environmental Management. And we have invited the Office of Climate Action, Sustainability, and Resiliency, although we haven't heard from them if they'll be here. Before we get started, Members, given the presenters' expertise on the matter relating to the impaired status of Mā'alaea Bay, if there are no objections, I'd like to designate Ms. Knox, Mr. Coleman, Ms. Comfort, Mr. Schneider, Ms. Hodges, and Mr. Reyes as resources persons in accordance with Rule 18(A) of the Rules of the Council.

**COUNCILMEMBERS VOICED NO OBJECTIONS**

CHAIR KING: Thank you. All right, so we're going to go ahead and start with Robin Knox. I think, Robin, you're first on the agenda for the presentation. Welcome and thank you for being here.

MS. KNOX: Thank you, Chair, and thank you, Committee Members, for allowing me to present to you this morning. Let's see, I need to share my screen.

CHAIR KING: Okay. And we've allotted about ten minutes for each presentation so that we have time for Q&A after the presentations.

MS. KNOX: Let's see, slide show. There we go. So I think some of the previous testifiers actually saw some of my slides, or saw the same things that I saw because it's...

*(Power Outage)*

**RECESS: 9:50 a.m.**

**RECONVENE: 9:58 a.m.**

CHAIR KING: . . .*(gavel)*. . . Okay, we'll call the Climate Action, Resilience, and Environment back into order. It's 9:58, and we are...I think we had that little glitch fixed, and hopefully we can get smooth sailing from here on out. So if...and we're right in the middle of Robin Knox's presentation. So thank you for...for holding off there so we could get things fixed and continue on.

MS. KNOX: Sure. So what we're looking at are some of the more visible signs of the problems at Mā'alaea that affect the water quality. This is a storm event, February 6, 2018, where we were actually able to measure the amount of pollution going in through this storm drain here. And there were 167 tons of sediment, silt,

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total suspended solids in just a four-hour stormwater discharge. And that also had nutrients associated with it. And you can see that the sediment not only filled up the harbor, but went out into the bay. What you can't see in the pictures is the invisible nutrients, the dissolved inorganics, and this is a map of what the nitrites looked like. And this is one of the water quality standards that's most often not met. And what I learned from this is the realization that during storm events, not only the surface water is moving, but the groundwater is moving. And the groundwater is moving every day, but it moves more during the surface events. Normally there would be a green area here in the middle of the harbor where the water is cleaner, and there are always hotspots at these two corners where the...by the boat ramp and over here by the condos. But on this day, we actually had to add the new color of purple because the concentrations were so high in that area. So that's probably groundwater movement, as well as surface water. So the tool that we have from a regulatory standpoint to deal with this is the Clean Water Act, and it's about water resource integrity. So it includes not only chemistry, which is what most people think of when you say water quality, but also the physical biological integrity of the water. And I just circled some of the things that are important at Mā'alaea, like land use, groundwater, precipitation, and runoff, nutrients. And I'll also say when, which was mentioned earlier, is also very important there. It's important to know that the Clean Water Act is kind of an evolutionary process of adaptive management. It started out worrying about navigation and not obstructing navigation, which the sediment in our harbor actually is a problem for navigation, and it evolved to get more State responsibility, more public health concerns. And it was really hard to get any traction until they started issuing these NPDES permits in 1972. By '77, they needed...they realized that nutrients were a problem. And that's our biggest problem, I think, in Hawai'i other than sediment, is nutrients. And by '87, they realized that it's not just enough to put certain technologies in place, but we need to look at the water quality individually at each place and do what's called water quality based pollution control. By '92, they started developing total maximum daily load regulations that required certain actions to achieve those water quality based goals. So those goals, like eliminate discharges of pollution, resulted in that permitting program, results in specific limits and permits. The protection of fish and wildlife and no toxic discharges led to water quality standards. The control of non-point source pollution led to our polluted runoff control and watershed planning efforts, and it is adaptive management. We monitor, we assess, we report to Congress, and then actions are required. This is a more complex view of that same thing, but the important takeaway is that the water quality standards are used to compare water quality to the standard, and then if the water is not meeting the standards, it's considered impaired, and the TMDL or other pollutant control, like permits or runoff control, are required. These are the standards, and the important takeaway here is that we have numeric standards for nutrients, which most states don't have. And the geometric mean is kind of a long-term weighted average that we use for determining in the assessments whether or not we're meeting the goals. A TMDL is kind of like a pie for pollution control, and it's...it's actually determining what is the amount of pollution that can be discharged on a daily basis and not exceed the water quality standard or impair the use. Because it's really those uses of fishing and swimming that we're trying to protect. So you can see here point sources, which are for the

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most part regulated under NPDES permits, each one would have an allocation of a certain number of pounds per day of pollution that they were limited to. And especially at Mā'alaea, we have a huge non-point source load that comes from groundwater, stormwater, and even windblown pollutants. An important takeaway here also is that under NPDES permits, meeting those limits are mandatory, whereas for the load allocations for the non-point source, that's actually voluntary on the part of, you know, dischargers and property owners, although, the State is required to take some actions. Pollutant load is a...a mass per unit time, like pounds per day. Most people are used to seeing pollutant data as a concentration, mass per unit volume like milligrams per liter, but we need to know not only that, but how many liters of that water got discharged, so we look at flows. And often pollutant load has to be modeled. It gets more complex than just monitoring. This is an example of why that's important, and this is from Mā'alaea. So if you look at, for instance, Maui Ocean Center, which is regulated under an NPDES permit, you see that their pollution load is very low. They're a large discharge. It's a million gallons per day, but their concentrations are low. The injection wells are actually fairly small in terms of flow, but they have larger pollutant concentrations. The groundwater is large, both in concentration and in flow, and it's the major contributor of mass. Stormwater had extremely high concentrations, but it doesn't discharge every day, so it's lower in mass than you might have thought from looking at that initial picture that I showed you. So this is just an example of why it's important to look at the mass of pollution per unit time, not just pollution concentrations. So the State does that every two years, assessment, and report to Congress, and this is the latest report. This was from 2020. This is the name of the report. You can find it online. It was put out in July. The important things to know are these categories. We would like to be category one, where all of our uses are...are supported, but you're going to see more category three, insufficient data, and category five, a TMDL or other pollutant control action is needed. It's possible we can get into category four on our way to category one, which is we have a plan, we're putting it in place, and we're...we're acting on the pollution control needs. The...so any waterbody not meeting the State numeric water quality criteria is considered impaired, and they prioritize these based on...for TMDL, which is a very complex and legal study, so it's extremely resource intensive. And they prioritize those at DOH based on number of pollutants not attaining the standard, the severity of the exceedances. Their resource availability, which is a huge constraint on doing this work and realistic schedule of completion, and all Maui TMDLs are low priority. I'm not aware of any TMDLs that have been done on Maui, although, some have been done on all the other islands. This is a new tool called My Waterway at [epa.gov](http://epa.gov), and I show it to you because you can go there yourself and look up any waterway. And what they do is they show you, like here's for the harbor, when was the last report, the water body is impaired, what are the uses that are impaired, aquatic life, recreation, and then if you click on this button, you get a water quality report that tells you more. And then you can go down to the assessment unit level, like this is the Mā'alaea Beach screen. This is the official report to Congress that gives more information. And like I said, the categories, you're seeing a lot of threes and fives. I've just highlighted the waterbodies that are at Mā'alaea. We see a lot of impairment for nutrients. The N means not attaining standards. The little dashes mean no data. So McGregor Point, no data at all, you know, big whale

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watching point. Pohakea Watershed, which is the watershed where, you know, all this drainage is going from to the harbor. You can see that some things...first of all, we have data, and that's I suspect due to the Maui Nui Marine Resource Council and others who have been doing some of that monitoring. We have some As, which means standards are being attained, but you still see for nutrients a lot of Ns, and we also have an N for bacteria. So that's threatening a recreational use. Why? What are the sources? These are possible sources. The non-point sources, like I said, are a huge input here. The submarine groundwater discharges carry everything that's been put on the land that gets into the groundwater, so that includes cesspools, septic tanks, injection wells, agricultural...you know, irrigation that carries agricultural chemicals. So it's not just the surface runoff. And it includes point sources that are regulated, anything that's under an NPDES permit. So again, the distinction is these point sources are required to meet their pollution reduction goals, and the rest we need to come up with some kind of collaborative way to do it. Injection wells, as we all know, are in that grey zone, we don't know exactly how those are going to be regulated going forward, but they definitely are a source. And so what are our opportunities to do something about this? Obviously implement TMDLs, or preferably something less resource intensive, some other kinds of pollution control strategy. And one of the exciting things in the most recent assessment report is DOH is now talking about non-point source regulation, and I don't know exactly what that means, but it sounds like a way to address what we know is a major part of our problem. We need adequate funding for this watershed planning and restoration. We need more regulation of stormwater pollutant discharges and injection well pollutant discharges. They are regulated, but not in a way that protects the ocean. So that...that's it, that's all the slides I have.

CHAIR KING: Okay, great. Well, thank you so much. And Members, if you could keep track of what questions you have, we're going to go through all the four presentations in this section first, and then we'll go back to questions from the...the Committee. So next, I believe...let's see, we were working with this order last time and, Nicole, if you can remind me, were we bringing on Maui Nui Marine Resource Council next?

MS. SIEGEL: Chair, it looks like Wastewater Alternatives & Initiatives [sic] is on the call if they're ready to present.

CHAIR KING: Oh, okay. Oh, yeah, I see Stuart now. Okay. Yeah, I think we had moved you because we thought you were...you were busy until 10:00 but it's after 10:00 now. So --

MR. COLEMAN: Yes.

CHAIR KING: -- is Stuart Coleman and...so I've got about ten minutes for each presentation, Stuart, if you can fit within that. Then we'll...we'll...if you can hang on for question and answer afterward, that'd be great.

MR. COLEMAN: Yes. Good to see you. Mahalo, Chair King and Vice-Chair and Committee Members. Thank you for having us on today. Joachim, "Joko" is going to share his

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screen, and thank you. We are WAI, Wastewater Alternatives & Innovations, and I am Stuart Coleman, the Executive Director. And our mission--we're a new nonprofit--is to reduce sewage pollution and restore healthy watersheds by bringing in really innovative and more affordable ecofriendly solutions to waste...wastewater management. So I also serve on the Cesspool Conversion Working Group and with the 90,000 cesspools across the State, we were thinking about just originally moving to...to septic systems, which are expensive and not nearly as efficient as we need them to be. So we're trying to help Hawai'i's homeowners and communities across the State to kind of manage this process of, you know, upgrading cesspools and failing septic systems across the State, but also dealing with issues about injection wells and helping communities with cluster systems. So we're going to be talking about...a little bit about that today. And we have...along with the innovative technology, we're also trying to offer people across the State more financial resources through the EPA and the USDA Rural Development Office to help with this process because it's a very expensive one. And then working with, you know, county councils like yours and committees that are trying to, you know, expedite and make this process more efficient through policy and advocacy and community outreach, and then pilot projects. And so one of the areas that we're looking at...have been looking at is in Mā'alaea. We can go to the next slide.

MR. SCHNEIDER: Yes, thank you very much, Stuart. I hope everybody can hear me well. Like Stuart said, my name is Joko, I'm the project coordinator for WAI, and I wanted to give a quick refresher. I knew Robin already talked about this a little bit but injection wells, what they typically look like, and what the current legislature [sic] is. So on the left, you can see what a typical injection well looks like. You have the ground level and the typical four-inch PVC pipe going deep into the ground. You have the solid casing where no wastewater is discharged, and then eventually, when a layer is reached where the wastewater can be discharged, you have the perforated casing with rock packing outside. So that's the way that oftentimes injection wells look. And I've seen them to be between 20 and 100 feet deep on average, but there are a couple that are a lot deeper than that even. And then if we...oh, in terms of treatment, you typically have at least secondary treatment, so aerobic treatment happening before any wastewater is discharged in these injection wells. Most of the time you have disinfection also occurring, but some of them in Hawai'i are permitted as injection wells without that, so. But most of them you will do...you do have secondary treatment. And then on the right, we can see a map here off the UIC line as it's typically called, underground injection control line, as defined by the Department of Health. The green area, so you can see no new injection wells will be allowed, period. So there's no way that a new injection well will be allowed in the green areas because it would be an impairment to drinking water resources and aquifers. In the red areas, it used to be before 2018 that new injection wells would be allowed whenever they were applied for; however, since Bill 131 was passed in 2018, which stated that the director of wastewater may only approve injection wells as the absolute last resort if no other options is available, such as because there's not enough area or because of limiting soil layers that don't accept wastewater, then they're allowed in the red areas, but other than that, they will not be.

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MR. COLEMAN: Thank you, Joko. And so we began, as part of our innovative technology program, we had talked with folks at Mā'alaea about their problem with the...with the injection wells and looking for, you know, potential cluster systems and other opportunities that are going to be less expensive and more efficient. And I know Tapani's on the call and...and he's...we've been working with him regularly. And so we introduced them to Cambrian Innovation, which is a company that does these package plants, so it's modular and scalable, and they do treatment. And the great thing about Cambrian is we work with them, we won a deal day study (*phonetic*), and then they also won...they were part of the Elemental Excelsior Cohort. So they just won that a number of months ago and received funding to introduce this technology into Hawai'i. And what makes it so unique is there's no CapEx required, there's no huge capital investment. It's sanitation as a service. They charge, you know, pennies per gallon of treated wastewater. And so we brought that to the...the folks at Mā'alaea, the ten condos there with more than 20 injection wells, and we're still in the process of working with them to bring this in. And it's basically, you know, we take the...the wastewater...I say we, that would be Cambrian Innovation, they charge a monthly fee, and then instead of just injecting these into the wells, we can take this recycled water and use it for ag, for instance. And so we've been talking to Mahi Pono and...and doing possibly of a greenbelt there, which would be great for...for wind, for fire, for, you know, heavy rains and flood control. Just so many good uses. And so we're in the process of working this through. It's going to take a little more time with...with permitting, but we think this is a really good fit for this area. So we'll go to the next slide. There we go.

MR. SCHNEIDER: Yeah, and this process with no monthly...sorry, with no initial capital expense, but then a monthly...a wastewater treatment fee, it's called the WEPA, the Water Energy Purchase Agreement. And other benefits other than obviously the huge capital savings in the beginning is that Cambrian handles all wastewater management aspects so that the clients, in this case Mā'alaea Town, does not have to worry about operation and maintenance of this plant. Cambrian also has the option of owning the system themselves, so that there's not even any ownership efforts that have to be done by the client. And this is all done with cutting-edge technology. You know, they...they use these MBRs that have been in use in Hawai'i lately, very successfully. And like I said, you only pay for performance, that means only paid for gallons treated. Repairs is handled by Cambrian, upkeep is handled by Cambrian. And like Stuart said, these are modular, so they can be upgraded, upscaled, or downscaled depending on the capacity needed, so that it's super convenient for the client. And I'll kick it over to Christina.

MS. COMFORT: Hi, everyone. I hope you can hear me. I was just going to talk a little bit about water quality. We already heard from Robin Knox, and thanks so much for that presentation. So as we heard, there's a lot of sedimentation, nutrient corpulence, turbidity, suspended solids that are a problem in Mā'alaea Bay. And one...I did find one study showing that 17 percent of the nitrogen and 73 percent of the phosphorous flux to the nearshore system is from these injection wells that we're looking for solutions to replace. And one of the things that's important to remember about nutrient pollution to reefs is that it can cause harmful algae growths, including

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invasive algae, and there is evidence of that happening in Mā'alaea Bay. So this is a really important issue to help preserve the native species and the coral ecosystem. And while the coral declines that have been observed in the bay are primarily caused by sedimentation, it's also important to remember that sewage pollution, any other stressors in addition to that will decrease reef resilience. So anything we can do to improve the water quality will help and allow reefs to bounce back faster from bleaching events and other types of stressors. And finally, I just wanted to highlight again the...the part of Cambrian Innovations, which is really interesting is that you can generate agricultural level of reusable water. So that is actually a great way to start thinking about using the water to reforest areas upstream. It can help with agriculture, green areas, and the more green areas you have, the less sedimentation and sediment loading you'll have to the bay as well. So there's lots of potential to use the byproduct of this type of the Cambrian Innovation's system to help with water quality in a broader scale.

MR. COLEMAN: Yeah, thank you, Christina. And the...kind of building on...on what Christina just said, I think another great aspect is that, you know, where nutrients in the bay are extremely harmful, when you put them in the land, it can be beneficial and...and...and used as some of the nutrients that are needed in the soil. So this resource recovery is the main kind of benefit of a system like Cambrians to do this with the kind of cluster system. And...and doing it at scale is also, you know, saves a lot of money. So we'll...we can stick around for any immediate questions now or for questions later, but thank you for that opportunity to present.

COUNCILMEMBER LEE: You're muted.

CHAIR KING: Thanks, Alice. That just...that happens with such frequency, I can't even...it's not even funny anymore. But...so thank you so much, Stuart. We're going to move on to Amy from Maui Nui Marine Resource Council for our next presentation, but we'll back with you with any questions that...so aloha, Amy.

MS. HODGES: Aloha.

CHAIR KING: Thanks again for being here.

MS. HODGES: Let me share this with you all. There we go. Okay. Well, thank you for having me. Hello. What I'm going to do is share with you today some of the actions that the Maui Nui Marine Resource Council has been doing over the past year, and plans to continue to do or add new things to our roster of projects moving forward so you have an idea of what's going on. I do want thank our partners who are on the call today that are doing other huge sections of the work, like the wastewater work is major, and we just want to support them however we can, but here's what's we've been up to. As we know, fire is an issue in the area. Eleven fires in the past 20 years, and it threatens everything in Mā'alaea, the environment and our human...human resources there. And this is what it looks like after the fire comes through, which results in the sedimentation and the brown water events that we're all familiar with. So we've been working on a few things. Of course, we...we focus on

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our coral reef health, and that means starting up in the mauka region, so we have been working to reduce and slow the fires in the area and then control the erosion, the resulting erosion. There we go. This past year, we were able to implement some of the new firebreaks and fuel breaks in Pohakea, so that's the watershed including Mā'alaea. So you're seeing here with the backhoe the MECO access road, which is that powerline road that goes up there. We were able to grade that and make it more accessible and widen it to be a sufficient firebreak for the area and repair the failed kickouts and what water bars there were. Get them back to functioning so that when we receive rain there, like right now in the storm, the...that road doesn't become just a highway for water to flow down, so there are appropriate kickouts put in there to kind of mitigate the amount of water flow and velocity coming down. We also did that along the Spencer Road, which is the bottom border road that kind of parallels the highway. And we'll be maintaining the fuel break buffers, like keeping the vegetation down on either side of those firebreaks throughout the next year, and then ultimately handing that off to DOFAW as they manage the property in the future. And in 2021, this year, we'll be looking at doing some strategic plantings in that area of fire resistant tolerant plants just to help with the erosion loss. The erosion that happens down along the highway there is called head cuts, and that's where the gulches meet the highway and the water digs back and erodes and creates these big erosion hotspots, and then the drainages come under the harbor as we've seen. So we've been focusing on monitoring those, and Maui Environmental Consulting is doing that. And I know Michael Reyes will touch on this in his presentation, but this is part of what we've been doing in the past year. The monitoring has been going on to help quantify the amount of sediment loss and...and be doing that through this wet season. The image on the right is just post-storm on January 18th, the big rain event we had where we were able to calculate about 64,000 pounds or 32 tons of sediment loss from just two of these head cuts. And that is the monitoring sites there and the drainages that enter the harbor, so you can get an idea of just how close these big erosion hotspots are to the harbor. This is the storm event on January 18th, and we were able to perform storm sampling. We got 25 samples, both from in the gulches and road runoff and marine samples here, and this is what the water looked like. A little less impressive than the storm event that Robin Knox shared from 2018, but still significant. Hopefully the bandwidth will show these videos for you over Zoom [sic]. This was around 2:00 p.m. on that storm day, and here's the other end of that drainage right into the harbor. We'll likely be out there again today if the...if the rain is significant enough. And the result is, of course, coral damage here, and flow out into the bay that spreads to our neighboring reefs. So looking into 2021, '22, '23, seeing the results of the head cut monitoring and just how much sediment loss occurred at just those two sites. We thought it was really logical for us to pursue repairing those two erosion hotspots. So we have just submitted a grant request to NFWF, National Fish and Wildlife Foundation, to support the beginning of repair of those head cuts. So that's finishing and monitoring, and then doing design and planning, engineering, permits, pulling back those walls that are collapsing in, and then deploying a geotextile soil stabilization material that's also permeable to help just hold the sediment back, but still allow the water to infiltrate. So we'll be looking at that in the next couple of years. And of course, the...our OED grant supported...is helping to support this in the current year as well. We are doing surface sample

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monitoring. The stars represent the sites that we've monitored every three weeks for at least the past year, and we'll continue to do so. The yellow stars are part of our Hui O Ka Wai Ola sites. That's our entire leeward Maui regional monitoring program, it's DOH approved, and...and helped result in some of the data showing up in the integrated report that Robin shared. And then separately MNRC staff, so me, samples these other sites as well that are attributed or associated with major drainages. So that's for excess nutrients and turbidity we're monitoring these sites. There's our Hui O Kai Wai Ola program, 2020. We were able to get 449 samples taken in leeward Maui, so down just a little bit from the previous year. We took a couple rounds off when we were all in...in big lockdown for COVID in those first couple months, but still able to get about 450 samples done. And those are all, you know, quality assured data that's publicly available and given to the State. A quick look at the data, I know we've seen some already from our other presenters, but here's an example of all Mā'alaea sites kind of going from west to east as if you were looking at an aerial of the harbor, and each of these bars is a different parameter, like nitrogen, phosphorus, nitrate, nitrites, ammonium, each color of bar. And the scale of them represents the number of times over the State standard they are for...through September 30th of last year. We actually do have our end-of-year data in, so this needs to be updated, but just further evidence of clearly have some issues going on in our water quality here at Mā'alaea. So we do have on loan from PacIOOS, we have a water quality sonde, it's a Seabird is the brand, and it is installed underwater in the harbor and takes a sample every five minutes. So it...it's...it's a great piece of equipment that they have had on loan to us. We've had in the water for about six months now, and we have it for another six months, they extended the loan to us. And so this has wonderful...it does chlorophyll a, turbidity, pressure, salinity. Just getting that continuous reading instead of our grab samples, which are kind of a snapshot, this is round the clock. So we scuba every 28 days, we move it around in the harbor, just...that's what we're permitted for. And this is what some of that data looks like. And I just want to point out the big storm event on January 18th, if you look at turbidity, which is the fourth row down, the light-blue color, as you come over right around 18th to the 19th here, you can start to see that big turbidity event, that's our brown water event from...from that rainstorm. So just some more information that's available, and it's PacIOOS owns this data technically, and that's also made publicly available to any of our partners that would like this data. So that...we'll be doing that for another six months. We also, in 2020, did perform limu nitrogen isotope ratio tests. We sampled limu or algae from across Mā'alaea and sent it in for analysis at UH Hilo, and they come back and tell what you the ratio of the nitrogen isotopes, and the reason we're looking at that is nitrogen, you're trying to wonder where is it coming from, is it wastewater, is it agriculture fertilizer. Those isotopes are different and depending on the ratio, it tells you where more of that is coming from, or helps give you a clue. And so we did find, of course, it's a mixed signature in Mā'alaea. We have wastewater, we have fertilizer, we have other things going on. So it did confirm the assumption and what we know that it's, you know, it's not a single problem, we have to kind of fix everything. But it did lean slightly heavier towards agriculture, fertilizer signature a little more so than wastewater. So just for the justification that you can't just fix one thing, you got to...you got to treat it as a whole in Mā'alaea. We'll probably be repeating this in 2021. It's pretty simple

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and...and a relatively cheap test to do. We have our oyster bioremediation project in the harbor, 2020 saw us putting in about 10,000 of the Pacific species. Each one, you know, at full size could filter up to 50 gallons a day, which is pretty great. We monitor them every two weeks, and we'll keep doing this into 2021 and beyond. And we were able to take broodstock of the Native Hawaiian oyster from the harbor, propagate it at UH Hilo, and then bring back the babies. Just this January put about 3,000 of those back in the harbor, protected in our cages, just to have two different species going there, and they do well in the harbor conditions. So keep using that program to help filter the water, remove the sediments from the water column, and, you know, they can't hurt, they're nature's filter. They're...they're meant to be there. So if they're alive, they're eating, which means they're filtering water, which means they're helping the conditions there. And then we did host a water resources class there, it was great. And we did do a couple of the ditch cleanups along the...the ditch that runs along the highway. In Mā'alaea we find that it does tend to fill up with trash, so we like to do that before the rainy season, and we were able to perform that in December before the storm started, to get any of the debris out of there that otherwise would be washed into...into the harbor via the drainages. So we'll keep doing that. And then what else. New things we're adding, 2021 we are going to start performing coral and fish transects in the area that are too cramp or, you know, . . . *(inaudible)*. . . too cramp. Transects just kind of near the surf right there in Mā'alaea, but we're going to start performing some of our own to help get baseline data on where things are at now with our coral reefs. We are going to start doing some groundwater samples. We've been talking with Kealia Pond, and they said we could take some core samples from there. And identified an old well along the Spencer Road that we'd like to grab some samples from. We'll also be installing an Aqualink buoy at Mā'alaea Harbor, and that's a buoy that tells you surf *(audio interference)* wind and wave action and water temperature to help better understand the currents in the area, and that information is also made publicly available, so any of our surfers out there will be really interested in that buoy, and the boat operators. And then other items we're going to be doing partially sponsored by the OED office is low-impact design or development. Parking lot improvements at the Mā'alaea Triangle, we're going to start talking about and possibly planning some of those out, addressing the dirt parking lots that are associated kind of between the condos and the Triangle. We noticed in the last storm those really were a significant source of sediment runoff and something that's easy to fix. Like to...like to take care of that this year. And...and then also working with our partners at Kealia Pond. You know, we have this wonderful natural wetland right here in the watershed. And so we went and spoke with them, and we said, you know, what can we do to help you? Because a...a wetland that's functioning at its top capacity working really well, you know, that's a win for everyone. You know, a wetland is our prize jewel. So speaking with them, you know, they really need some help with water level control structures. They're doing the best they can to manage that wetland effectively, but they don't have a lot of control over water in-and-out flow there. So working with them to maybe get some funding for almost like gates, water level control structures for them so that a wetland can function and...and filter naturally. And...oh, I guess that's everything. But that's a summary of things that we're doing. I look forward to your questions afterwards. Thank you.

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CHAIR KING: That'd be great. Thank you so much, Amy. Your...your organization has really come a long way in the...in the few years since I've been on the Council. You guys have been doing so much. So really appreciate you being here. And last but not least, we have Michael Reyes, who's going to talk about the watershed project up in that area. There you are. Okay. Hi, Mike.

MR. REYES: Hello, everyone, and can you all hear me?

CHAIR KING: We can all hear you. We can see you.

MR. REYES: Okay. Okay. I wanted to thank the Committee Chair, the Committee Members, as well as the other presenters. I'm going to talk today about the Pohakea Stormwater Management Plan that we prepared back in 2018 for the Maui Nui Marine Resource Council. Basically Wes Crile, who I'm sure the Committee is...is familiar with, we basically canvased the Pohakea Watershed looking for sources of pollution that would be ending up in Mā'alaea Harbor or Mā'alaea Bay. We focused on erosion and sediment transport within the watershed. And so today I'm going to just be reviewing with you some of the observations that...that we made while researching the Pohakea Watershed. The...the watershed is...it's just over 5,000 acres and it's quite steep at the top with the Pohakea Stream or Pohakea Gulch being the predominant stream within the watershed. But as you can see from this quadrangle map, we have, you know, very steep conditions that meet basically right at the...the Spencer property, much more gradual agricultural lands. We have four major streams that are discharging into Mā'alaea Bay and into Mā'alaea Harbor. Those are Pohakea, Kanaio, which Peter Cannon had mentioned earlier. This is the stream that's actually cut off from its original course. He was referring to it as the Mā'alaea Mudflats where it originally entered into the bay, possibly into Kealia Pond. We also have Mā'alaea and Malalowaihole Gulch--and I'm certain that I'm not saying that correctly.

UNIDENTIFIED SPEAKER: Chair?

MR. REYES: But I...I wanted to highlight where these discharges are actually going. So we have Pohakea that's entering into Kealia Pond, and then we have Kanaio and some of the smaller gullies all crossing underneath Honoapiilani Highway and entering the...an armored swale or like an armored concrete lined ditch, and then being rerouted out into the bay through the condos. And then we have these other areas entering...going underneath the highway and being discharged into the harbor.

VICE-CHAIR SINENCI: Can we do the full screen please, Chair? Thanks.

CHAIR KING: Oh. Oh, yeah, can you...Mike, can you put it on slideshow just so we don't see all the thumbnails on the side? Great. Okay, thank you.

MR. REYES: Sorry about that. So you know, I'm just going to gloss over. So there's obviously...you know, we have our marine environment, we have, you know,

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coral...coral reef, well known in front of Kealia Pond, and then also to the west associated with McGregor's Point. As far as land use, we have a large tract of conservation land, we have some agriculture lands, as well as the urban corridor. As far as soils, I'm not going to get into the weeds on this, but basically the point is we have many soils at upper elevations with high runoff potentials. And you know, basically all of these soils are...are running off into these agricultural lands and urban areas, and...and what that means is you have a high potential for erosion and sediment during these stormwater events. This is Wes standing in one of the head cuts associated with Honoapiilani Highway. This is actually just off the highway. And I'd say from, you know, the top of bank down to the...the bottom, you're looking at about 16 to 20 feet deep for this area. We also found within the conservation lands we had disused old roads that are...that are actually operating as stormwater conveyances, and we saw a lot of erosion happening on...on a lot of these old roads. This is the Spencer Road that...as you can see, this is the Mā'alaea Triangle here. You can see the evidence of erosion associated with this road. We also saw, up in the conservation lands, sort of like landslides where we're losing vegetation and subsequent topsoil loss. And you can...is evident as you, you know, drive by. You can look up the mountain, you'll see these bald areas. And so again, within the agricultural lands, you have these severe erosion occurring at the head cuts. And...and this is an example, so we...I have Google Earth aerial imagery of 2013 compared with 2019, and basically what's happening is that as these streams discharge during a stormwater event, you have water that's building up at the culvert, and it becomes very turbulent as it's backing up, and it's basically scrubbing and eroding away at the stream bank. And as you can see, it's causing severe erosion to occur. The...the top of this is called a knickpoint, and basically as this turbulent water continues to scour, it...it...it slowly makes these head cuts larger and larger. We also saw just evidence of erosion associated with the old Waihee ditch system. This part of the ditch system, like I said, as Kanaio Stream enters it used to flow out towards Kealia Pond and now is diverted into this armored ditch or armored swale and is...is rediverted. These ditches, unfortunately they become full of rubbish from the road and so during stormwater events, you get this high velocity water that's picking up all the rubbish in the ditch system and...and discharging it in the bay. Again, we have these roads associated with distribution and transmission powerlines that were used to maintain these areas, but are now...or had been in...in disrepair. Within the urban area, we have dirt roads that...that...or dirt parking lots that Amy had...had mentioned. We also have our stormwater drains, we have, you know, basically oil and grease and rubbish from the...the parking areas in the urban corridor that are discharging directly into the harbor. Within the condo area we have, you know, leaf litter and organic debris that during storm events is washed out into the bay, and this becomes a source of nutrients, you know, all of this leaf litter starts to decay and becomes available nutrients that could cause algae blooms within...within the bay. So some of the strategies that...that we had come up with to address these issues were to address the roads, and...and Amy had showed some slides. We actually had Goodfellows come out...I should say Maui Nui Marine Resource Council had Goodfellows come out and regrade both the lower section of the MECO road, as well as the Spencer Road. And so the point here is if you see on the...on this slide to...to the left, you would have stormwater coming down these

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roads, and the roads would come almost like a streambed themselves. The stormwater...as it moves down these steep roads, the stormwater starts to move very quickly, it builds up energy, and it actually erodes and makes these old roads that firefighters and first responders are...are using to fight fire, they actually are becoming a source of sediment. And in this instance, you can see Wes is actually standing in the kickout for this road. As you can see, the stormwater basically doesn't make it into the kickout anymore, it keeps going down the road and building up more speed and more energy. And so the picture on the right shows, you know, a BMP in place along the kickout. The road has been graded and flattened out so you don't have those channels and rails anymore. And so the idea is that stormwater sheet flow occurring during a stormwater event doesn't get very far before it's kicked off the road, goes through the BMP, and...and that way, the road is maintained for our first responders and firefighters. The road also doesn't have any vegetation associated with it, so it's...works as a firebreak and as a fuel break during fire events. And so this...this is great that this recently happened. This is another picture kind of showing the same thing. This is a before and after with the BMPs in place along the kickout, and the road has been regraded so that it's a safe place, especially during fire events for first responders to...to access these areas. Again, this is...this is the road, and you can show during a recent fire the...the road actually worked as...as a firebreak to stop the fire from continuing down the mountain. Another strategy that...that we had proposed to Maui Nui Marine Resource Council that Amy had touched upon that they're starting to do is to plant fire-resistant species to hold soils in place, exposed soils in place, especially after fires have occurred and we've lost that vegetation and, you know, and topsoils are now bare and exposed. We want to lock them in place using vegetation. We know that it's a very windy area, so even when stormwater events are occurring, we can be losing soil due to wind erosion. As far as the head cuts that I had touched upon earlier, there's...there's different ways of...of going about protecting from head cuts getting worse. You can use riprap, you can use the geotextiles, plant vegetation to lock that soil in place. What we've been doing is head cut monitoring at these locations. And to...to kind of estimate the amount of soil loss, we've been putting soil pin arrays at these locations. And so if you can imagine, for each one of these green dots represents three ten-inch soil pins that have been driven into the ground at the very edge of the head cut. And during a storm event, if we lose soil pins, we can estimate how much soil has been lost by how many pins have eroded away and...and...and fallen into stream system. So this an...this is an example, this is June of 2020, and you can see in this instance, this area here is actually this here, where I was standing to take the picture has now given way...has actually fallen into the head cut. And so this...you know, this is just after the Martin Luther King Day January 18th stormwater event that occurred. So you can see just how severe the erosion is along these head cuts. Another issue that we've observed within the head cuts is we have homeless encampments that are occurring in the actual culverts that run underneath the highway. And so if I go back to...to this picture here, I mean, you can see that's...that's the...the dome at Maui Ocean Center, this is all the Mā'alaea Triangle here, where just on the other side of the highway you have these culverts. And because they're filled with...with rubbish, obviously any stormwater that's trying to enter in these areas backs up and is clogged, further causing this head cutting. If water can't get through this culvert, it backs upstream

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causing these...these turbulent emissions. And so Amy and the Maui Nui Marine Resource Council has been great on...on...on keeping on top of this and calling to have this rubbish removed, but it's an ongoing situation that...that needs to be addressed. Again, we have rubbish within the armored channel on the makai side of the highway. And again, all this rubbish you can imagine, you know, when this area does flow with water, all this rubbish is discharged directly onto our reef. You know, this is the Spencer Road, you can see that it...it basically discharges right onto the highway if it...if it's flowing with stormwater. Maui Nui Marine Resource Council just had this road regraded by Goodfellows, and so you can see here kind of the before and after. This is Wes Crile standing in what is a severely eroded portion of the road. You have a stream coming down here and so if you can imagine if stormwater, you know, laden with...with sediment is coming down this way, it's either going to move this way and discharge through these culverts going to the highway, or it's going to dump right out onto the highway. And this is what it looks now. It's been graded and...and so all of this erosion, we're hoping been addressed. Another opportunity we have is along Pohakea, you know, we have the powerline corridor that's running along Pohakea through the agricultural lands. This runs out by the MECO powerplant and then into Kealia Pond. This area of Pohakea is like basically a ditch at this point, and we think that there's opportunities there. This is the electrical transmission infrastructure and dirt roads that are associated with it, and we think that, you know, all of these areas are...there's an opportunity to address sediment and mitigate for fire hazards within these areas. We also have some projects associated with the golf courses or other areas even within the ag lands where you could have, you know, these permeable reactive layers. I know that Tova Callender and...and Wes had...had success with these on the West Side with biochar using, you know, sources of contamination, nutrients, moving through these permeable reactive layers. And...and they basically treat that water before it enters into the ocean. Another thing that is popular, especially within like golf course ponds is like floating vegetative areas, and they actually just pull nutrients. These...these kind of like floating islands of vegetation pull nutrients right out of the...out of these ponds. So within the lower areas, we've been looking at the Spencer land specifically as this great opportunity to...to host some of these projects that we think would be very beneficial to the watershed. The reason why the Spencer lands are so beneficial is because they are kind of like right at that inflection point of steep rocky soils with high runoff potential and...and then below, you have this, you know, very gradual areas where agricultural lands. And so this is kind of a great buffer in between those two areas. Within these lands we have proposed like these string of pearls, detention basins where you have basically a stream that's kicking off into small detention basins that are able to capture sediment and basically slow stormwater so that, you know, sediment is suspended, solids are able to drop out of solution. And...and so we have these very flashy streams that may only last a couple hours, and so if we can contain that water on the landscape and allow sediment and...and suspended soils to...to fall out, we get all kinds of great things occurring. We have, you know, aquifer recharge and obviously we're able to capture some of that sediment before it discharges into the ocean. We also think that this area can be used for large detention basins. You know, these areas basically capture large volumes of water and...and that water then percolates back into the aquifer or groundwater, capturing that sediment within the

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basin. Other options are to use these dry wells, which basically you would have a deep well going directly down into the ground and these wells would...would basically only capture stormwater that is then sent, you know, directly into the ground so that this water doesn't go right out onto the reef and...and smother the reefs. Within the urban area, within the Mā'alaea Triangle, we know that we have these unpaved areas, parking areas. We've observed sedimentation with these areas. Amy mentioned within the Mā'alaea Triangle parking lots, we have an opportunity for low-impact development, BMPs to be put in place that's like permeable parking areas, to...to turn planted areas into like bioswales basically, so we could have native plants within these...you know, these small green spaces within the parking lot. And then stormwater could then...using curb cuts could then go into these areas and, you know, the stormwater would then be cleaned by these plants that are...that are planted here. And so it's kind of a win-win for...for everybody. For the Mā'alaea Triangle, it's a way to introduce visitors to native plants, and then obviously any stormwater coming off of...of the parking lots is directed into these rain gardens, if you would, and...and, you know, waters these plants, but also treats that water so that it's not being discharged directly into the harbor and into the bay. Again, Amy had mentioned Maui Nui Marine Resource Council is using oysters within the harbor. And so just to end, the...the projects that we had proposed are listed here. The projects we had proposed within the Stormwater Management Plan are listed here. We had given them a priority in the plan for stakeholders within the community to get a feel for what we thought was, you know, low-hanging fruit, what we thought was very expensive, and so everything highlighted, I believe, is being currently addressed in some form or another. And you know, obviously, the Spencer parcels or they're kind of highlighted in green, I know that's kind of an ongoing thing. I know that Peter Cannon and Wes Crile had been looking at restoring the Kanaio Stream pathway. But that's it, I just wanted to kind of recap what was going on and some of the things we observed and some of the projects we proposed in the Pohakea stormwater management. So thank you, everybody.

CHAIR KING: Okay. Thank you for that...yeah, thank you for that presentation. I love that we're seeing a lot of the problems that are happening, but we're also getting some solutions in these presentations as well. So Members, we're going to go ahead and reschedule the MEMA oversight part so we can give more time for questions for this item, and also because of potential pending emergencies that the Director may have to address today because of this weather. So we'll reschedule him. And he was apologizing, but he was grateful for the time that he needs to put into what he's doing. And so would you...would the...does the Committee want to go ahead, since we had that short break earlier and...and go into Q&A, or do you want to take a break first and then come back and go into Q&A? Any...any...is everybody okay with just powering ahead? Yeah? Okay. Great. Okay, so what we'll do is we'll go through all the Members...Committee Members, starting with the Vice-Chair, and give everybody five minutes for Q&A, and then if we need a second round, we can go back around. But hopefully this will give everybody who, if you've been writing down your questions, a chance to address. And if we could bring back on screen our panelists, and I think our two people from Mā'alaea Village Association in case we have questions for them. We'll start with Committee Vice-Chair Sinenci. Questions and...

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VICE-CHAIR SINENCI: Yeah. Mahalo...mahalo, Chair, for the opportunity. So my first question was for Mr. Cannon if he was still on...onboard. And so it looks like from, you know, down towards Kihei area, there's the Kealia Pond and...and this being kind of a natural, a wetlands and wildlife refuge, and this is where a lot of the Waikapu and Wailuku streams would empty out and kind of...kind of stagnant before even going into the ocean. What we want to do, slow down the water. But it looks like, Mr. Cannon, between all the condominiums at Mā'alaea and...and Kealia, there's a couple other ponds or...or wetland areas. Who does...do you know who does that belong to?

MR. CANNON: Can you hear me okay?

VICE-CHAIR SINENCI: Yes.

MR. CANNON: All right, thanks. The...the Mā'alaea wet...Mudflats are A&B land that's now owned by Mahi Pono, and it's completely connected to the Kealia Pond, and always has been. The Waikapu and Wailuku streams, you can see them go all the way through Kealia, not through the mudflats. What's been cut off from the mudflats is Kanaio Stream on down. There's four...four big ones. And what...what...what strikes me with this presentation is all the work that nonprofits and others have done ahead of us to stop the amount of dirt that comes. But what strikes me is the same amount of water still comes down, and where does that water go? It goes straight into the bay through that detention basin that was built in...in the middle of the stream to only handle that stream's water and not four streams worth of water. But to me it's a really easy fix, a bulldozer and a jackhammer, divert the water back to the cane lands, which is what Mahi Pono says, we want the water. But definitely convert...take Kanaio Stream down its natural path because it...it goes straight to the mudflats. And I want to bring up one other...the old stream that went by the Crockett property, which is now Milowai, that stream is...is now underground in a pipe, and it goes...it's...it's one of the biggest providers of pollution according to Robin because it comes out in a...in a...in a pipe straight into the Mā'alaea Harbor. That...that pipe is so close to the retention basin that it could actually be diverted to the retention basin, which...which wouldn't have the big flow from Kanaio and the others, and it could...it could actually...the retention basin could actually put...be put to good use taking that stream's water so it doesn't go into the harbor.

VICE-CHAIR SINENCI: Mr. Cannon, so the...the Kealia Wildlife Refuge, is that a State...State park...State-owned park?

MR. CANNON: Kealia is a national wildlife area, Federal lands, but there's just --

VICE-CHAIR SINENCI: Yeah, all...

MR. CANNON: -- a boundary that goes...there's a fence that goes across and it's...it's between private land and...and Federal lands. But it is certainly connected, it's always been connected.

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VICE-CHAIR SINENCI: Right. It just seems --

MR. CANNON: If...if you walk in there...

VICE-CHAIR SINENCI: -- from aerial shots...

MR. CANNON: Yeah, the mudflats.

VICE-CHAIR SINENCI: It...it just seems that you would think that the Federal would...would include some of the towards, you know, expand towards Mā'alaea and...and encompass some of those other wetlands that are adjacent to...right, it's just a boundary, but it's...it's a larger wetland area.

MR. CANNON: Exactly right. It's a larger wetland area, it always was, but part of it's private property, and it's really not useful for...for anything. As a mudflat, you couldn't build on it, you'd have...so yes, you...you make...you bring up a good point, it could be...if Mahi Pono was willing to transfer it, it could certainly be part of the Federal wildlife preserve.

VICE-CHAIR SINENCI: Okay. Thank you, Mr. Cannon. And then my next question was for the...the WAI group. And so they mentioned a Cambrian system, a portable Cambrian system as an alternative to the 20 injection wells currently at Mā'alaea. Do...does the Cambrian system meet EPA standards? Does it require water...access to water? Does it require, you know, distance to residents, those types of things, Mr. Schneider?

MR. SCHNEIDER: Thank you very much for your question. Yes, I can tell you that the Cambrian systems are all California Title 22 compliant. So that means since the Hawaiian laws and codes are...and generally more...less stringent, you could say, than Title 22, that once the applications for permit will come into the Hawai'i Department of Health, these will be granted. So it is compliant. And in terms of setbacks, it will meet the regular setbacks that any other wastewater treatment plant would have to abide by, but since there would be a parcel set aside for the location of the treatment plant, this would be no issue. And there would be a separate collection system, where each house in the area or each condo would collect...would connect to a...sort of a sewer system, and then that would lead...bring all the wastewater system to the treatment plant. Does that make sense?

VICE-CHAIR SINENCI: So...so you're saying, Mr. Schneider, that we would need...you need to acquire surrounding property to...to put the system?

MR. SCHNEIDER: Peter, do you want to take that one? I see Peter shaking his head. . .  
*(timer sounds)*. . .

MR. CANNON: Mahi Pono has offered the easements that we would need on their side of Hauoli Street to take it all the way to the plant, and they've also offered ten acres in

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order to absorb the water and make a greenbelt above Mā'alaea. So everything...everything we have is in place except for the building of the collection system, the distribution system that would take the sewage from the...the condominiums and to the plant. That's the only missing link.

VICE-CHAIR SINENCI: Okay. Thank you.

CHAIR KING: Okay.

MR. CANNON: And it's economically feasible. It's cheaper for us to use WAI, use the Cambrian system than it is to do it ourselves.

CHAIR KING: Okay, thank...we're going to move on to the next Committee Member now. Thank you for that response and the answers. Thank you...thank you very much, Committee Vice-Chair Sinenci. So I'm just going to go in alphabetical order. We'll move on to Member Johnson, and we'll start --

COUNCILMEMBER JOHNSON: Okay.

CHAIR KING: -- the clock for five minutes.

COUNCILMEMBER JOHNSON: Thank you, Chair. I have a lot of questions for the presenters. Before my life in...as it was now, I was a farmer, and before that I was...worked in conservation, so I...I love the language you speak. First question is, is for the presenters is do we have a Vetiver stock? Is there a Vetiver farm on Maui? I don't...I'm kind of nervous to import Vetiver from another island full of invasive species. So do we have Vetiver stock on island?

CHAIR KING: Who do you want...who...who are you addressing?

COUNCILMEMBER JOHNSON: I think Maui Nui or I'm...I'm sorry, who...who was speaking to that?

VICE-CHAIR SINENCI: Ms. Hodges.

COUNCILMEMBER JOHNSON: Ms. Hodges?

MS. HODGES: Right. Yes, we do. We have...we're working with Sunshine Vetiver Solutions, and they're located...they have farms both located in Kihei and on the West Side.

COUNCILMEMBER JOHNSON: That's wonderful.

MS. HODGES: So that's who we're working with, and...and they're really helpful.

COUNCILMEMBER JOHNSON: Great, great. This next question...thank you so much. This next question is for Mrs. Knox about the pollution sources on Maui. Is there ranking

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specific to County that...for the contributions? Like is there...there's some things that we can't do as County, but is there a ranking of the pollutants that you think that the County could pay attention more to that's more in our wheelhouse?

MS. KNOX: I...I don't think that anyone has done a formal ranking of that. I can tell you that if I showed you the graphic for where the County injection well pollutant loads are that they would be off the chart --

COUNCILMEMBER JOHNSON: Yeah.

MS. KNOX: -- because they're very large. Even though they have, you know, more than...more than secondary treatment, just the volume makes it a lot, and it's an everyday discharge. So yeah, we could do more reduction there, and as well be mindful and I...I know as a farmer you understand this, be mindful of everything we put on the ground, even if we're irrigating agriculture with wastewater, that we still have to watch that nutrient load and make sure that the cumulative amount isn't too much for the bay.

COUNCILMEMBER JOHNSON: Okay. Thank you for that. I guess this is going back to Mrs. Hodges about your NFWF funding, how's that coming along? Is it a yearly fund? Do you...do you get NFWF every...you know, recurring, or how's that working out?

MS. HODGES: Sure. Yeah, the Coral Reef Conservation Fund programed through NFWF, that's an annual grant. We're operating under one right now that closes in March, and we've just submitted a preproposal for the year 2022 that will be a two-year term. We also have the NFWF Coastal Resiliency Grant, which was a three-year grant that we're operating under and wraps at the end of this year. So yeah, NFWF has been really helpful with Mā'alaea, and Michelle Pico with that program really understands what's going on on Maui specifically. So we're hopeful for the next...

COUNCILMEMBER JOHNSON: Hey, that's...that's wonderful news. If you get in with NFWF, that's big funds for you. So I'm happy that you're recurring and it's...it's...you know, that's great to hear. And following up one more question for you, I had heard through the coconut wireless that the oysters got stolen. Is that true? Is it...

MS. HODGES: That is true. Yes, we had three cages stolen from one...one location. They did get stolen, and so we have installed...replaced all of our...unfortunately had to replace all the infrastructure with stainless steel infrastructure and put up security game cameras with infrared night vision. Hoping to both deter...basically to deter and make it more difficult for anybody that would want to do that. But ultimately, we're looking at moving some of the sites to...well, I don't know if I want to say.

COUNCILMEMBER JOHNSON: Exactly.

MS. HODGES: Yeah, but still be in the harbor.

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COUNCILMEMBER JOHNSON: Yeah. And...okay. So I just...so no real setback beside the financial setback for your program?

MS. HODGES: Yeah. Yeah, yeah. We...you know, we're talking a few hundred that went...that went missing. Yeah.

COUNCILMEMBER JOHNSON: Okay.

MS. HODGES: Out of a few thousands.

COUNCILMEMBER JOHNSON: Yeah, okay.

MS. HODGES: Yeah.

COUNCILMEMBER JOHNSON: And then this is...I don't know who to address this question to. I know the State is run by...or I mean Mā'alaëa is run by the State, but who owns the parking lots? Is it still the State, the...the...

MS. HODGES: I mean, I'll speak to what I know. I know that there are different parking lots, and some are State, and some are part of I believe the Triangle Association. But maybe --

COUNCILMEMBER JOHNSON: Okay.

MS. HODGES: -- Tapani or someone could speak better to those.

COUNCILMEMBER JOHNSON: Okay. Thank you, Ms. Hodges. Thank you, presenters. That's all the questions I have for you, Chair. Mahalo.

CHAIR KING: Okay, great. Perfect timing. Thank you, Member Johnson. And we'll move on to Member Lee. I...I know you've got a whole list of questions.

COUNCILMEMBER LEE: I do.

CHAIR KING: Great.

COUNCILMEMBER LEE: Yeah, just a few. Just a few. Thank you. I have a question for Mr. Coleman --

MR. COLEMAN: Yes.

COUNCILMEMBER LEE: -- or Mr. Schneider. Wondering what that monthly fee you were referring to is with regard to your system, the Cambrian system. There is no upfront cost, but there is a monthly fee that the residents have to pay. What's that monthly fee?

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MR. COLEMAN: It's...it depends on how many condos are involved, and so it depends on the daily load, the average daily load, but, you know, we're talking pennies per gallon, like one or two pennies per gallon of treated effluent.

COUNCILMEMBER LEE: Oh, could you give me an example of, I don't know, how many condos are in Mā'alaea that are on the cesspool system and need to convert?

MR. COLEMAN: There...all total ten condos, but Tapani and...and Peter might be able to give you a better kind of estimate because they're part of the Mā'alaea Village Association. But I...I think we were calculating for all ten condos under, I think...Peter, correct me, 120,000 gallons per day or something? Yeah. So...

MR. CANNON: A hundred and twenty thousand gallons a day for the ten condominiums, and it's about a little under...a little over 2 cents a gallon to process. And this number...if we take the wastewater and...and turn it into irrigation water, it's actually cheaper than we can do it for ourselves.

COUNCILMEMBER LEE: So can somebody give me an estimate of the monthly fee? You do the math. Two cents per 126,000 gallons a day.

CHAIR KING: Or...or maybe...Member Lee, maybe they could...you could tell us how that compares with the average...the sewage fee that we normally charge. Does that help, Member Lee?

COUNCILMEMBER LEE: Well, any...any estimate would help. Yeah. Because right now, it's hard to understand without knowing. Okay, so someone's going to have to pay \$30 a month, you know? Something like that. Whatever...whatever the estimated fee is. I mean, because...and are there any other costs associated with this system that...that either the residents have to bear or, let's say, the County has to bear?

MR. SCHNEIDER: Yeah, so this is...to...to the run the math for you here, if we assume 120,000 gallons per day...and again, this is if all...or when all the ten condominiums jump on this, we multiple that by 2 cents a gallon, we reach \$2,400 per day, which average over a 30-day month is \$72,000 per month. And again, this includes everything, that is repairs, it's upkeep, operation, maintenance, everything. So that is for the entire community including the Ocean Center, including the condominiums, the industrial triangle. So I don't quite know how many different parties there are paying this, but all across Mā'alaea, it would be \$72,000 per month.

COUNCILMEMBER LEE: Okay.

CHAIR KING: So Peter, I think...

COUNCILMEMBER LEE: Now, let's say...let's say right now, they're not paying anything. So what if people...some people decide, you know, I decide to opt out?

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MR. SCHNEIDER: So I will...I will say...I don't want to correct to you, but the condominiums all run their private wastewater treatment plants right now, which is sort of an enormous cost really because they have to have an operator, they have to do the repairs themselves, and they're running into all of these environmental issues. So it's not really going from zero to a hundred in terms of price, but, you know, as Peter said, with the leverage of having the reuse water that will have a positive benefit as sort of a cost offset, it all makes financial sense.

COUNCILMEMBER LEE: Okay. I...I'm just wondering that, you know, if this is feasible enough for most people, if not all, to participate, and it sounds like it...it would be a benefit for the individuals to participate. Okay.

MR. SCHNEIDER: We believe so. Thank you.

COUNCILMEMBER LEE: Yeah. Thank you. That's all the questions I have. Thank you.

CHAIR KING: Okay, great. Great questions. Thank you, Member Lee. Okay, going down the line, we're at Member Molina.

COUNCILMEMBER MOLINA: Thank you, Madam Chair. Let me just preface my questions first by thanking all of the panelists. A lot of information to absorb, but very helpful, and I hope we going get college credit after this, you know. I guess my first question would be basically the history of the area, maybe Peter could answer this, off the...on the mauka side, historically has...were there any Hawaiian settlements in that area? And...and I ask because, you know, if we're looking at potential development in the area, would this further exacerbate, you know, runoff into the harbor and the potential fire hazard? Because of the...how Mā'alaea is situated. I'll just throw that out there if you can answer that for me.

CHAIR KING: Peter...I think that question was for you, Peter.

COUNCILMEMBER MOLINA: Yeah.

MR. CANNON: I think there's...Lucienne would be a good one to answer that. But yes, Mā'alaea was a very large Hawaiian community at one time, and to...to build above there would...would definitely exacerbate the situation for the runoff and...and for the pollutions that would come down. There is a...there was a heiau above the...what...what is Mā'alaea Harbor, and a lot of the rocks were taken from that heiau to make the harbor itself. There was a spring within the harbor that had an 'opae that only grew there. And the...there was beaches inside that area, pocket beaches within the harbor area. And it...it was a natural stopping point for Hawaiians on the way to...to Lāhainā, including the trail just mauka of Lāhainā...of...of Mā'alaea. So yes, there was a...and there's...there was a heiau up higher and there was...there's a number of homesites and interesting artifacts and things to see above there that aren't well publicized, which is probably a good thing.

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COUNCILMEMBER MOLINA: Okay. Well, thank...thank you for that. And it was really disturbing to see all the rubbish in the culvert as well. So I don't know what we can do to maybe help educate people, if maybe some signage can be put there to, you know, help us keep the environment safe because of...with all that rubbish backing things up, and it just creates more...more additional runoff and stuff going onto the reef. So I don't know if that's a potential solution. It may help, it may not, but. With regards to the runoff affecting the limu, I thought that was interesting. Does it create more toxicity in the limu and, you know, maybe we recommend people don't eat the limu in that area or pick limu? Maybe I could get --

CHAIR KING: Maybe, Amy...

COUNCILMEMBER MOLINA: -- maybe Amy.

CHAIR KING: Amy, is that...that sounds like a question for either Amy or...Amy Hodges or Michael Reyes. Amy, do you have an answer to that?

MS. HODGES: Yeah, well, you know, I mean, I can't speak to the toxicity because certainly there's other things besides nutrients running off with that sediment, right, chemicals, all kinds of bad stuff. But I know that the reason we're using limu is because it sort of accumulates it, tells the story over time of what's happened with the...what we're looking at with the nitrogen, and so that's evident in the...in the tissue of that algae. So it's more of a historic record of what it's been exposed to over time as compared to, you know, a snapshot, grab sample. The water...that...that nitrogen doesn't...doesn't last as long, so that's why we're using it. But someone might...else might be able to speak to the limu itself being edible. Certainly I know with our oysters everyone is like oh, let's eat them, and I'm like you don't want to eat anything from here. Like these guys are filter feeders, they're accumulating...do not eat these, they are toxic. But of course, limu would be...

CHAIR KING: It looks like...it looks like maybe Robin can speak to that, your...your question, Councilmember Molina.

MS. KNOX: Yeah, I just wanted to say other than the work that...that Tom Royer did with...with Diuron, I don't think that there has been a look at either what toxic compounds are coming in or actual aquatic toxicity of algae or fish or anything else in the water. And it definitely...both the nutrient loads and those toxic compounds could affect everything, not just limu that are there. And wastewater is known, you know, to have...anything that humans put in their bodies, including pharmaceuticals, personal care products, and things like that in it. So there could be some affects, but basically we don't know because no one's really done a look at that.

COUNCILMEMBER MOLINA: Okay, great. So best advice to those people who are stealing the oysters, you may not want to do that, yeah. Okay, and last question before my time is up. The estimated cost of any types of potential solutions that we can do, you know, for the short term, I guess. Well, we know the bigger solutions will cost more and with the uncertainty of Federal monies and State monies for grants and all of

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that, anything that you would recommend that we could right now that's affordable, I guess? I don't know if that's the right term, but...

CHAIR KING: Okay. Who...any particular person you'd like to...maybe have Peter respond to that?

MR. CANNON: I don't know the numbers, Mike, but it would be relatively inexpensive to divert the water of Kanaio Stream back to where it belongs, and the other streams there back to the cane fields. . . .*(timer sounds)*. . . That...that doesn't seem like a big number to me. There's another problem within the flood detention area. There's a haul cane road between the A&B...what's A&B land today and...and Mahi Pono land. Down the middle of that stream, they...they built a bridge that is a four-foot pipe, and that pipe cannot carry the load. And all...all the water just goes around it and then across Hauoli Street and into the bay as well. That's a...that's a problem I didn't bring up. But Mike, diverting the streams back to the mudflats is...is not a big deal, it's not a big number.

COUNCILMEMBER MOLINA: Great. Well, I think it's high time we talk story with the landowners and try to mitigate some of the impacts of the flooding. So great...great suggestion, Peter. Thank you, Madam Chair.

CHAIR KING: Okay, thank you so much, Member Molina. And moving on, we have Member Paltin next, but we can go back...come back to you if...are you ready for...

COUNCILMEMBER PALTIN: Sorry, my kids, they said the water is rising and the ground is shaking. I don't know.

CHAIR KING: Oh, no. Okay, that's what it looks like behind you, it looks like water rising.

COUNCILMEMBER PALTIN: I just told them stay in the house. So okay, sorry, my turn. I guess my most question is the...from...Mr. Reyes, I think, was the one that had those pictures of the riprap solution in the head cuts that he was speaking about. Was...is that correct?

CHAIR KING: That's correct. Are you still here, Mike?

MR. REYES: Yes, I am.

CHAIR KING: Okay.

COUNCILMEMBER PALTIN: I just was wondering if that's a proven method and, you know, just if the water would not seep down and then further erode around the rocks if you're...if you're like putting large boulders in there.

MR. REYES: Good, so that's a great question. Basically we researched how head cutting can be addressed, and so like large rocks is...is one of the ways that it's addressed. But what we did was basically make a list of all the things that we learned from...from

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that research. We think that, you know, when you...whenever you armor a shoreline like that, there certainly could be consequences. But basically with those...you know, what the riprap is supposed to do is just slow the water while armoring what...what is left of the...the banks of the stream. Now, in...in the one picture that I showed, I don't think riprap would be the ideal solution in that those...those stream banks are vertical at this point, so there's no stacking rocks in there. Basically I would think in that area, and again I'm not the engineer, but pulling those banks back so that they're not so steep, and then using like geo webbing, which is basically just like a material that you could then...it holds the soil in place and you can like plant plants in that...in that geotextile, that geo webbing would probably be a more ideal solution in that instance. But you could have that plus riprap plus some other...kind of like tackle from all sides sort of thing. And so certainly we would want to have an engineer come out and design the best approach to...to addressing that erosion.

COUNCILMEMBER PALTIN: Could that include like diverting the water to a sediment retention basin over there?

MR. REYES: Certainly. I mean, that could be an option is...is to actually...you know because these are such flashy systems, we can take advantage of the fact that it may not be large volumes of water for long periods of time. And so any water that we can divert out into a large detention basin or many smaller connected detention basins, you know, all that water pulled out is water that's not going out onto the reefs. And by capturing that water, we're slowing it down and allowing pollutants to...to drop out. We're also allowing some of that stormwater to percolate down into the groundwater and kind of recharge that groundwater. So if you have polluted groundwater during a stormwater event, you could imagine stormwater is then kind of helping to...to recharge and dilute that...that groundwater...

COUNCILMEMBER PALTIN: And to clarify, it's not the water going into the reef that's the problem, it's the polluted water, right?

MR. REYES: Correct, yeah.

COUNCILMEMBER PALTIN: Okay. And you know, the water bars that you showed, is there like...where does the water...if you kick it out from its roadway path, have you done like native planting or hydromulch of native seeds below so that it kind of...it doesn't create another head cut where the water bar is made?

MR. REYES: So like water bars and...and those kickouts, that's just like basically standard operating for dirt roads, especially in steep areas. And so we...ideally what you would do is put some sort of vegetation in place. Right now we have BMPs in place, we have like the...the...the coir logs that are...that are placed to hold sediment from going down the...the side of the mountain and then reentering into the stormwater system.

COUNCILMEMBER PALTIN: I got some --

MR. REYES: But...

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COUNCILMEMBER PALTIN: -- BMPs behind me, they didn't work so good though.

MR. REYES: Yeah, it's sometimes very hard to do. . . .*(timer sounds)*. . . Amy has...and Maui Nui Marine Resource Council, I do believe, has plans to plant, whether it be Vetiver or native species in association with those kickouts.

COUNCILMEMBER PALTIN: Shucks, I...I missed my...my most curious question about the pearls and the oysters.

CHAIR KING: Okay. We'll come back to you, Member Paltin. I want to get to Member Sugimura, and then we'll see if anyone else has any more follow-up questions, but. Thank you for your patience, Member Sugimura. Go ahead, it's your turn now.

COUNCILMEMBER SUGIMURA: Yeah, apologize for going in and out of this meeting. Because of the heavy rain, my office is flooding actually. So thanks to Public Works to the rescue and Marlene downstairs, what...what an angel, so appreciate that.

CHAIR KING: Send them to my office afterwards, I think, because...

COUNCILMEMBER SUGIMURA: I...I think so. We had to ask Mr. Sinenci if they could go to his office, and I think they were going to ask Tamara if they could check out your office. Yeah.

CHAIR KING: Okay. So we're starting now. Don't count that, Staff.

COUNCILMEMBER SUGIMURA: Okay, okay.

CHAIR KING: Start her five minutes now.

COUNCILMEMBER SUGIMURA: Thank you. So I've missed a lot of the presentations, but I...I can see where Maui Nui Marine Resource Council is kind of the glue that's pulling this all together. I want to thank you. And Kelly, all your years of support through budget, now I can see, you know, what they've done and it's...it's fabulous. Michael Reyes and Wesley Crile, with your presentation...or...or Michael Reyes, the Mā'alaea Village...I don't know who this question goes to, but Mā'alaea Village had asked for a private road to be built in time of emergency. And I just by...by looking at the presentations, I just wondered if...if they have looked at that thought, and what the impact would be for runoffs or maintenance. Or have they even thought about it or has that not been proposed by Mā'alaea Village?

CHAIR KING: Who...who is that directed to? Is it...

COUNCILMEMBER SUGIMURA: I guess it would be really, I guess Tom and Mike Reyes. And then I have another question regarding Cambrian.

CHAIR KING: Okay. I think we don't have a Tom on, but Mike Reyes?

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COUNCILMEMBER SUGIMURA: Oh, I'm sorry, Peter. I'm sorry, I meant Peter, Peter Cannon.

CHAIR KING: Okay. Go ahead, Peter.

MR. CANNON: I can...I can answer that. There was a cane road that...haul cane road that went from Haycraft Park up to approximately where the Maui Electric plant is. And I actually went and found the gate and the old signs that says enter at your risk. And what the request was, was to have a second way to leave Mā'alaea in case of an emergency. If there was a fire and we couldn't get out, this is a back...a backdoor. It wouldn't affect what we're talking about with water because you would...this road would have a...not a bridge, but just a pipe underneath it to allow water to flow naturally. So that's just a side bar to what Mā'alaea Village is trying...is trying to accomplish, but thanks for the question.

COUNCILMEMBER SUGIMURA: Okay. And so it wouldn't be affected by all the...what...what Mike...Mike Reyes' presentation, not at all? Okay, that was kind of alarming. When I saw that I thought wait, we're going to, you know, forge a road and create more problems, but I'm sure that'll be looked at if it's possible. Stuart Coleman, is that your name? For...I'm sorry, for the Cambrian system.

MR. COLEMAN: Yes.

COUNCILMEMBER SUGIMURA: It is? Okay.

MR. COLEMAN: Yes, thank you.

COUNCILMEMBER SUGIMURA: So can you...can you tell us about that? Alice went into the cost for the Cambrian cost but you also talked about what is needed is bridging of the collection system. So do you have an estimate for what the costs are and what is that? Who's going to do it? What are you looking for? Because without that, it sounds like you're not going to have your connection, so can somebody speak to that and what the cost would be?

MR. COLEMAN: Yeah, that's I'm tempted to say the \$64,000 question, but I didn't want to throw any numbers out there that are confusing. We're not sure exactly yet. Peter and Tapani might have a better idea because that wouldn't be included with the cost of setting up the Cambrian. You know, they set up there to treat it, but a conveyance system would need to be built. They're...we're working with a former County Councilmember Steve Holmes and who's helping with...he's from Honolulu --

CHAIR KING: City and County.

MR. COLEMAN: -- Honolulu City and County. . . .*(inaudible)*. . .

COUNCILMEMBER SUGIMURA: Oh, I was going to say, not familiar.

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MR. COLEMAN: Yeah, not...not here. And he thinks, you know, if it could be included in the cost, those conveyance costs, it would be much...much cheaper to do if we, you know, did a private partner...private...public/private partnership, excuse me, or in grants, Federal grants. And so, you know, that's something that we can look into including the total cost. And then, you know, again, you know, a lot of it is going to turn...depend on Federal grants to help with this. But Peter did...when you guys...I think they had Brown and Caldwell do a study for the...the cost. Did they have figures for the...setting up the conveyance system?

MR. CANNON: We do. We think it's a number between 3 and 4 million. That's the only...only cost left to be able to do this. Cambrian...Cambrian and their team is...is putting up the capital cost of building the plant, we need to find a way to...to pay for the conveyance to get the sewage from the condominiums to the plant. 3 to 4 million is the number that we're hearing.

COUNCILMEMBER SUGIMURA: So that means...if I could, are you looking at the County to do this? Is that what that means, the conveyance system? No?

MR. CANNON: Yuki Lei, you're...you're asking the same questions we're asking, . . . *(timer sounds)*. . . we just know we have a missing link and we're trying to reach out any way we can. We've gone to USDA, we've gone to others, and we've gone to...we've gone to Councilmember Kelly King to ask for help. We...we...this is...we're...we're novices, we're...we're...we're trying our best to be proactive, but this is the one question we're asking too. We just...we just have this one thing to...just one last hurdle and we can get off our injection wells, but we don't know the answers to those questions. That's what we're trying to find right now, help with that item.

COUNCILMEMBER SUGIMURA: I see. Okay, thank you. I have more questions, but I'll hold off.

CHAIR KING: Thank you, Member Sugimura. Yeah, I think the...on that...that 3 to 4 million, that is possibly even something that, you know, when Jim Buika was on talking about public/private partnerships, if the Mā'alaëa folks did a CFD, you know, the Communities Facilities District for that particular part and could do the 25 percent cost share with the 75 percent that he's hoping to get from the Feds, you know, that cuts your cost way down to maybe a million or less. So that might be a potential possibility too, now that we have that CFD legislation. So any follow-up questions, anybody has any burning...Tamara, you still want to find out if there's pearls in those oysters? Member Paltin?

COUNCILMEMBER PALTIN: Yeah, I just was...wanted to know if there's a possibility for an economic development partnership because, you know, you guys need money to malama and...and, you know, A&B took the money and ran and decimated the system or whatever. You know and...and I remember when we were starting up the conversation about Save Honolua. Somebody busted out a Save Mā'alaëa picture bumper sticker with like Freight Trains on it and I was like, oh, I don't want to save

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Honolua like how they saved Mā'alaea, you know. But like now, maybe I just wasn't...it was too soon. But I was just wondering like, you know, maybe how Tahiti, they got their pearls going on. Black pearls, maybe we can do pink pearls or something, I don't know, and just...you know, and like shifting...economic diversification. I hear some folks have like pearl parties and stuff, and just was wondering the possibilities.

CHAIR KING: Amy...

MS. HODGES: Yeah, yeah.

CHAIR KING: . . .*(inaudible)*. . .

COUNCILMEMBER PALTIN: Sorry.

MS. HODGES: So we...we do...of course the...the pearls come up a lot as a question and, you know, we do have the black-lip and the variegated pearl oysters here in the harbor naturally occurring, volunteering as especially biofoul on our cages. You know I've seen a few of them of dead and popped open, haven't seen a pearl yet in them. But it's something that, you know, we would certainly be interested in. But right now, with the way the State laws would...are with shellfish and our permits, we...we're not...we can't do anything with them other than for a conservation purpose. There's no sort of resale on them. And since there's no shell fishing in Hawai'i and things. But you know, it's...it's not something...you know, it's definitely worth having that conversation since it's for conversation purpose in the end with our State agency permitters. I will say, you know, the Tahitian pearl was, you know, originally the Hawaiian pearl, but when we kind of messed up Pearl Harbor, then Tahiti--same species--kind of got the claim to the name of the pearl. It could been the Hawaiian pearl that was world famous, same species of oyster. Yeah.

COUNCILMEMBER PALTIN: So if you need somebody to go and do a site visit in Tahiti, I will be happy to volunteer.

MS. HODGES: Noted.

CHAIR KING: Okay. Any other burning questions, Members? You have another question, Yuki Lei? I noticed that you got cut off.

COUNCILMEMBER SUGIMURA: Oh, actually...oh, thank you. You actually asked the question I was going to ask.

CHAIR KING: Oh, okay.

COUNCILMEMBER SUGIMURA: How do we put all of this together. So --

CHAIR KING: Okay.

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COUNCILMEMBER SUGIMURA: -- I think we...we need money.

CHAIR KING: Yeah, we...thank you so much, Members. We...we...we'll hopefully get some report after the meeting tomorrow that...that Lynn Britton is having with...about the...you know, with the...the landowner there on what's happening with the Mā'alaea Mauka parcel. And I'll be speaking with Member Paltin about whether we want to put that item over to the CARE Committee or keep it in PSLU because I know your priority right now is to get that community...the West Maui Community Plan done. So luckily we have a lot of crossover in our various committees, so we can share these items. But this is a...it's kind of an urgent thing because we want to make sure that we can solve...we can salvage this land before it gets sold to another developer, which I think is what they're trying...you know, I mean, obviously if you own the land, you don't want it anymore, you're going to try as hard as you can to sell it to somebody. And so with that, I don't have any other questions myself. Anybody else...just one last...one last opportunity. I really appreciate all the panelists. Thank you so much for being here and sharing the information. I appreciate the Committee's thoughtful questions, and I feel like we're moving forward on this issue. I also want to just make a note to anybody who doesn't know, that one of the things that Lucienne de Naie is working on is a historical account for this area. So she's actually got a grant from our district funds to do this research, and so we'll be finding out more about the, you know, the history of the area, you know, how it's connected to the Native Hawaiians who lived in the area and things like that. But that will be...that'll be coming out sometime I think this year, this next six months, so we look forward to that. And we'll...if there's no other questions and no objections, I'd like to defer this item.

**COUNCILMEMBERS VOICED NO OBJECTIONS.**

**ACTION:           DEFER PENDING FURTHER DISCUSSION.**

CHAIR KING: Okay, great.

**CARE-38:           OPERATIONAL AND BUDGETARY REVIEW OF THE MAUI COUNTY  
EMERGENCY MANAGEMENT AGENCY (CC 21-36)**

CHAIR KING: And then we'll go ahead and defer, if there's no objections, the item...the second item on the agenda, and I'll reschedule with Herman and let him handle whatever emergencies are happening right now.

**COUNCILMEMBERS VOICED NO OBJECTIONS.**

**ACTION:           DEFER PENDING FURTHER DISCUSSION.**

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CHAIR KING: So we're going to defer both items. And just wish everybody a nice lunch hour. We'll see you after lunch. And thank you so much to everybody for helping move this issue along and looking at the actual problems and the solutions.

COUNCILMEMBER SUGIMURA: Thanks for your hard work.

CHAIR KING: Okay.

COUNCILMEMBER SUGIMURA: It's very interesting.

UNIDENTIFIED SPEAKER: Thanks, everybody.

COUNCILMEMBER PALTIN: Do we know if Moloka'i has power?

MR. COLEMAN: Mahalo.

COUNCILMEMBER SUGIMURA: What...what did you say?

COUNCILMEMBER PALTIN: I was wondering if Moloka'i has electric. I heard some of them don't.

CHAIR KING: Oh, yeah. That's right, where...that's where Keani is.

COUNCILMEMBER SUGIMURA: The light was flickering here in the building.

COUNCILMEMBER PALTIN: Yeah, we had some flickering.

CHAIR KING: When that flicker happened at my house I saw it in your screen too, Yuki Lei. I saw your screen flicker a little bit, so...

COUNCILMEMBER SUGIMURA: Yeah. Plus it's storming in my office.

CHAIR KING: You know, I'm worried about mine too because the last time I went in there after it rained, the papers were all wet on the...

COUNCILMEMBER PALTIN: Marlene called, she said she was going to go in my office, so you can probably call her. Oh, Keani just messaged me. She's watching us. Electric is going on and off.

COUNCILMEMBER SUGIMURA: Oh, so she has electricity.

CHAIR KING: No problems with electricity on Moloka'i?

COUNCILMEMBER PALTIN: She said it's going off and on.

COUNCILMEMBER SUGIMURA: Oh. Okay, we look forward...

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CHAIR KING: Might want to...

UNIDENTIFIED SPEAKER: Chair?

COUNCILMEMBER SUGIMURA: We look forward to hear Budget agenda item. Just *(audio interference)* building. But...

CHAIR KING: Yeah, you might want to get the notes for that meeting tomorrow in case you have to take it over at some point.

COUNCILMEMBER PALTIN: Oh, shoot.

UNIDENTIFIED SPEAKER: Chair, adjourn the meeting.

COUNCILMEMBER SUGIMURA: Oh, okay. We got to stop.

COUNCILMEMBER PALTIN: Oh.

CHAIR KING: Okay. Thanks *(audio interference)* Great conversation.

COUNCILMEMBER SUGIMURA: Bye. Good meeting. Thank you very much for doing this.

UNIDENTIFIED SPEAKER: Chair...but, Chair, gavel.

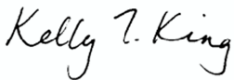
CHAIR KING: Thanks, Shane.

UNIDENTIFIED SPEAKER: Did you gavel, Chair?

CHAIR KING: Oh, you know what, I didn't. . . .*(gavel)*. . .

**ADJOURN:** 11:43 a.m.

APPROVED:



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KELLY TAKAYA KING, Chair  
Climate Action, Resilience,  
Environment Committee

care:min:210203min:ds

Transcribed by: Daniel Schoenbeck

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CERTIFICATION

I, Daniel Schoenbeck, hereby certify that pages 1 through 50 of the foregoing represents, to the best of my ability, a true and correct transcript of the proceedings. I further certify that I am not in any way concerned with the cause.

DATED the 23rd day of February 2021, in Wailuku, Hawai'i

A handwritten signature in cursive script, reading "Daniel Schoenbeck", is written above a horizontal line.

Daniel Schoenbeck