MINUTES OF THE

PEARL HARBOR-HICKAM-KALAELOA
RESTORATION ADVISORY BOARD (RAB) MEETING

OAHU VETERANS CENTER, HONOLULU, HAWAII

December 11, 2024

Note: Text in blue was added for clarification subsequent to the meeting.

I. ATTENDANCE: SEE ATTACHMENT A.

II. OPENING

Ms. Stephanie Kawasaki, facilitator of the meeting, opened the meeting at 6:00 p.m. and introduced Mr. Justin Ka‘ahanui, who started the meeting with a pule. Mr. Ka‘ahanui introduced himself and led everyone in song and prayer.

Captain (CAPT) Sam White, Commanding Officer of Joint Base Pearl Harbor-Hickam (JBPHH), introduced himself.

Mr. Henry Curtis, the Restoration Advisory Board (RAB) Community Co-chair, introduced himself.

Mr. Robert Huber introduced himself.

Ms. Helene Takemoto, RAB member, introduced herself.

Mr. Kyle Kajihiro, RAB member, introduced himself.

Mr. Cruz Vina Jr., RAB member, introduced himself.

Mr. Guy Inouye, RAB member, introduced himself.

Colonel (COL) Monica Gramling, Deputy Joint Base Commander, introduced herself.

Mr. Ross Prizzia, RAB member, was attending via Zoom and was introduced by Ms. Dayna Yoshizaki.

Ms. Kawasaki introduced herself and presented the structure of the meeting, including the order of questions and comments and the addition of online participants. Mr. Curtis specified that questions from RAB members will be taken first, then questions will be taken alternating from online and in-person attendees, and CAPT White concurred.

III. REVIEW AND APPROVAL OF SEPTEMBER 2024 MEETING MINUTES

Mr. Curtis asked if anyone has an issue with the September 2024 meeting minutes. There were no objections, and all RAB members were in agreement; the meeting minutes were approved.

CAPT White asked to follow up on a request from the last meeting to have access to records and files online. Ms. Jocelyn Tamashiro, Environmental Restoration (ER) Manager at Naval Facilities Engineering Systems Command (NAVFAC), Hawaii, referenced Slide 21 in the meeting handout, which contained a QR code and weblink that directs to the Administrative Record (AR) website for JBPHH. Documents produced under the ER Program will be accessible at this webpage. The site has

documents dating back to before the 1980s. When the ER Program produces a new document, such as a work plan or an investigation report, it will be posted to the AR website and will be available for download. Some documents will require a request for access to receive.

Ms. Takemoto asked if the AR includes Red Hill documents. Ms. Tamashiro answered that the records website will only include documents produced under the ER Program. There are two ER Program sites at Red Hill: the Per- and Polyfluoroalkyl Substances (PFAS) Remedial Investigation (RI) and the Former Oily Waste Disposal Facility (OWDF). Those two site documents will be in the AR, but no other Red Hill documents will be in the AR because the ER Program did not take part in producing those documents.

CAPT White asked if there will be any information regarding a future site for accessing Red Hill documents. Ms. Tamashiro answered that they are building an ER website for Red Hill that will house the data and reports for those two Red Hill sites (i.e., PFAS RI and the Former Oily Waste Disposal Facility). This will be available via a link through the Safe Waters website. CAPT White stated that the Navy will keep RAB members informed about this.

CAPT White stated that as membership and meeting attendance grows, it is important to keep in focus the scope of the RAB. If discussions deviate from the scope, the Navy is not in a position to address those issues at this time.

IV. DISCUSSION OF RAB CHARTER AMENDMENT

CAPT White stated that the draft RAB charter was emailed to the co-chair and RAB members and asked if anyone did not receive the draft. All RAB members present agreed that they received the draft. CAPT White asked for feedback on the draft charter.

Mr. Kajihiro stated that on page 4, the draft charter discusses the appointment and selection process for RAB members. The draft charter states that the Navy Co-chair will review all applications for new applicants and members seeking re-appointment. The Navy Co-chair will forward endorsed applications to the full RAB for confirmation. Mr. Kajihiro proposed that all RAB members should get to see the applicants without a filtration process and get to have that discussion openly.

Mr. Curtis stated that the RAB members did not receive a redline version of the draft charter and the documents are somewhat cumbersome to review. Mr. Curtis stated that the 2015 RAB charter says, "The RAB will focus on the protection of human health, cleanup, waste management, and technology development issues that are clearly relevant to the cleanup of the facility." Mr. Curtis pointed out that the statement regarding "human health" is not in the new draft charter.

Mr. Curtis stated that the 2015 RAB charter says, "the RAB has the discretion to hear presentations on the social, economic, cultural, aesthetic, public health, and worker health and safety aspects of cleanup." The new draft charter in a different section says, "the facilitator will be sensitive to local, cultural, historic, and environmental justice issues and have been trained, if feasible, in environmental justice issues." Mr. Curtis stated that in the 2015 charter, the RAB has the right to raise the issue, and in the new charter, the facilitator should have these skills but doesn't say that the RAB can raise the issue.

Mr. Curtis stated that in the 2015 RAB charter, members stay on forever until either everything has been solved or until the member resigns. Mr. Curtis stated that RAB member Tom Lenchanko resigned via email. The new RAB charter has two additional criteria: one is if the Navy sells the property, and the other says that current RAB members are subject to and limited to a 2-year term. Mr. Curtis stated

that it could be interpreted to mean that after 2 years, all RAB members are off. CAPT White agrees that that is worth clarifying.

Mr. Curtis stated that in the 2015 RAB charter, members should be located in the City and County of Honolulu and surrounding areas. The current draft charter states that members should be located in the Pearl Harbor, Hickam, and Kalaeloa zip codes. Mr. Curtis expressed interest in clarifying this point.

Mr. Curtis stated that in the 2015 RAB charter, members could select alternates in case a member cannot attend a meeting. In the new draft charter, a RAB member can give a proxy vote to another RAB member. Mr. Curtis stated that this is important because if a RAB member misses two meetings, they can be removed from the RAB. Mr. Curtis questions if using a proxy vote counts as an absence.

Mr. Curtis stated that though it is not in the 2015 RAB charter, site visits used to be conducted with every RAB meeting. CAPT White asked where this is codified. Mr. Curtis answered that it is not codified, but was common practice from previous JBPHH Commanders. The current draft charter states that site visits will be conducted once per year. CAPT White stated that the Navy is open to discussion on the charter and that his intention is to collect feedback, reach an agreement, and then vote on the charter. CAPT White asked that the RAB members provide feedback via email to Ms. Tamashiro so that the charter can be revised and the meeting can be expedited.

Mr. Curtis proposed that two RAB members be removed from RAB membership because they are no longer active members and suggested a discussion of RAB membership for three applicants. Mr. Curtis mentioned that the current charter states that the military selects members of the RAB, but he suggested that membership selection be approved by the military and approved by the RAB. CAPT White explained that the Navy does not want to rush the process of a charter or membership and would like to finalize the charter before selecting a RAB member. Mr. Curtis agreed.

Returning to the subject of site visits, CAPT White stated that there are infinite possibilities of combinations of scheduling site visits and RAB meetings, but that that RAB needs to agree on the way forward. CAPT White stated that if the desire is to do four RAB meetings, there will be no pushback from him; the goal is to reach a workable, supportable, and sustainable charter moving forward. There was a gap in holding RAB meetings for an extended period of time; if this can be avoided by having a charter that is supportable that meets the intent, desire, and transparency for the community, then it will help sustain the RAB.

Mr. Curtis stated that there was no mention of conflict of interest in the 2015 charter, but that the new charter reads, “Any RAB member, including the Navy and Community Co-chair, who have a conflict of interest with respect to any issue before the RAB shall immediately make known in writing the nature of the conflict to the board. A conflict of interest shall preclude the member from voting on this issue and preclude the member from making or using his or her position to influence a government decision regarding the issue.” Mr. Curtis stated that “conflict of interest” is not defined, and that as he reads it, if there’s an issue that faces the RAB that appears at the legislature, RAB members would not be allowed to testify on the issue at the legislature.

Mr. Kajihiro asked if the draft charter can be put in something like a Google Doc that allows comments so that RAB members can add annotations and notes. CAPT White acknowledged that the request is for a working document where comments can be made and tracked changes can be accepted or not accepted; CAPT White asked if this is a possibility. Ms. Tamashiro answered that this is a possibility that can be worked on after the meeting. CAPT White requested that RAB members reply all and include all cc’d email contacts when replying to emails. Mr. Curtis confirmed and proposed that with this plan, the RAB can vote on the revised draft charter at the next RAB meeting. CAPT White asked

if there are any additional questions from online RAB member participants, and there were no questions.

Mr. Curtis asked, if the RAB votes on the charter at the next meeting, will the RAB also have a discussion regarding new RAB members at the next meeting? CAPT White stated that the feasibility of voting on the charter will depend on how robust the exchange of emails and changes to the charter are. If the charter is ready and there is a consensus among the RAB members before voting that the charter will be approved, then the RAB will vote on the charter. Otherwise, scheduling to vote on the charter that is questionable will likely be misleading. CAPT White stated that he cannot commit to saying the RAB will vote on the charter until they assess the progress on the charter. Mr. Curtis agrees.

Mr. Kajihiro asked if the RAB reaches a consensus on the charter before the next meeting and anticipates that the RAB will vote to approve the charter at the next meeting, then could the list of applicants for RAB membership be shared at the next meeting? CAPT White anticipated that the answer will be yes but does not want to commit to this answer until there is progress on the charter.

Ms. Takemoto stated that several RAB members are community citizens and that the statement in the charter about conflict of interest could prohibit those who may testify on certain projects from participating in the RAB. Ms. Takemoto stated that she thinks this section needs to be revised. CAPT White responded that because "conflict of interest" is not codified, who is the adjudicator of a conflict of interest? If there are no criteria as to what "conflict of interest" is, then there is ambiguity. CAPT White stated that the feedback he is receiving is that "conflict of interest" needs to be codified, but his concern is that if we attempt to codify every conflict of interest, then the list will be endless. CAPT White stated that as long as there is no personal gain from a situation that's being advocated for or against in the RAB, then he does not see that as a conflict of interest. CAPT White stated that is something the RAB needs to agree on and codify to some level. Ms. Takemoto responded that when speaking about "codifying," that implies that things are set permanently, and she cautioned against using this language. CAPT White responded that the RAB needs to reach an agreement as to what language to use. Ms. Takemoto agreed.

Mr. Huber suggested having a page of simple definitions—for "codify," "conflict of interest," and other terms—in the context of the amendment and/or any drafts. Mr. Huber also requested that the 2015 charter be sent to new RAB members in an email. CAPT White stated that he believed this was already sent to RAB members and asks if it was sent. Ms. Tamashiro confirmed that she did send it and would double check that Mr. Huber was on the distribution. CAPT White had no objections to adding definitions, and Mr. Curtis agreed that it is a good suggestion.

Comment 1 (C1): (Ms. Brady) I find it kind of insulting that human health was left out, especially because our water has been poisoned and your own families have been sick, so that's a problem for me. Also, specifying that RAB members have to come from a certain zip code – we are all taxpayers, we are paying for this. I think by limiting it, it's not only unfair but it's also very revealing.

V. COMMUNITY INVOLVEMENT PLAN UPDATE

Mr. Curtis noted that the 2015 RAB charter mentions the Community Involvement Plan (CIP), but the new draft charter does not.

Ms. Tamashiro explained that the CIP is a document that is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that outlines how the Navy will involve the community in the ER Program and communicate data and information to the community. As part of the CIP, the Navy initiated a survey in June 2024 that ended in November 2024. 96 responses were received, and Ms. Tamashiro presented the highlights of the survey: Of most

concern to the public that responded were chemicals of concern (COCs) including PFAS, petroleum, metals, and pesticides. 31 percent (%) of respondents were not familiar with what the ER Program does. 38% of respondents were not familiar with what the RAB does. 63% of respondents rely primarily on social media to receive their information. 58% of respondents rely on traditional news (i.e., newspapers, television) to receive their information about what the Navy is doing for cleanup. Ms. Tamashiro acknowledged that the Navy has a lot of communication building and transparency work to be done with the public, and that they will start this by distributing the draft CIP to the RAB by the next RAB meeting. Ms. Tamashiro listed examples of public communication activities, including fact sheets, meetings to present findings, briefings to any local officials that are interested, creation of websites or social media briefings, workshops on how the cleanup process works, press releases, newspaper articles, and making sure the information repository and ARs are up to date so the public can download all plans and reports the Navy is producing.

Mr. Curtis asked if the CIP could be available to the RAB as a Google Doc 30 days before the next RAB meeting. Ms. Tamashiro agreed and stated that the Google Docs format is mainly for the RAB to provide comments on. Mr. Curtis asked if Ms. Tamashiro anticipated that the CIP will be voted on by the RAB or if it is a military document that will be separate from the RAB. Ms. Tamashiro responded that the RAB members should vote on the document itself and acknowledged that this will be a draft version of the CIP. Mr. Curtis requested that the Navy post the previous (i.e., 2005) CIP. Ms. Tamashiro agreed to post the previous CIP.

CAPT White acknowledged comments from previous RAB meetings regarding the size of text on the presentation handouts and asked if anyone was currently having difficulty reading the slides in the presentation. There were no objections.

Question 1 (Q1): (Mr. Kajihiro) I was just curious, and maybe you said it but I missed it. Can you explain how was the sampling done for this? How the outreach for the 96 responses was conducted?

Answer 1 (A1): (Ms. Tamashiro) We put a survey out on Facebook and we advertised it on the Navy webpage. It went out to whoever sees the Navy's webpage.

[The survey link was also distributed as a handout at the June and September 2024 RAB meetings, and emailed to all meeting attendees after each meeting.]

Comment 1 (C1): (CAPT White) Can you be more specific? What Navy page was that?

Comment 2 (C2): (Ms. Tamashiro) I believe it was the NAVFAC Hawaii Facebook page.

Comment 3 (C3): (CAPT White) Along with the Joint Base…

Comment 4 (C4): (Ms. Tamashiro) Yes.

Comment 5 (C5): (CAPT White) My point is that it was not just posted on a single site, but multiple sites. It's important that we get some feedback. People have trouble, whether it's RAB members or others, accessing that.

Mr. Kajihiro stated that he isn't sure if this is a site that community members necessarily go to often. CAPT White acknowledged this and asked what a recommendation is to address this issue. Mr. Kajihiro asked if there will be more outreach to continue this type of survey. Ms. Tamashiro stated that the intent is to have an additional survey when the Navy reestablishes the Waianae and Central Oahu RABs, and there will be an opportunity for everybody to comment again. Mr. Kajihiro offered that the

RAB can help get that survey out [to community members] when the time comes. Both CAPT White and Ms. Tamashiro noted this and thanked Mr. Kajihiro.

Mr. Huber stated that 63% are using social media and certain age demographic use Facebook and Instagram. Mr. Huber stated that the young and up-and-coming are the future of Honolulu and that, anecdotally, those under age 30 do not tend to have much knowledge of local environmental issues. Mr. Huber proposed using a more generic Instagram site and working with students in the University of Hawaii's environmental studies program that are adept at Instagram to set up an account with the RAB that can reach a wider audience.

Ms. Kawasaki asked if there were any questions from virtual attendees.

Question 1 (Q1): (Ms. DeCosta, online) Why was the RAB charter changed? What is the rationale?

Answer 1 (A1): (Mr. Curtis) We were sent three meeting minutes and the minutes were either before the charter was endorsed by the RAB or after the charter was endorsed by the RAB, but we don't have minutes of the 2015 RAB [charter] being passed by the RAB. The only thing we actually have is the 1997 charter which would cover Pearl Harbor only and Hickam only. This would be the first charter that actually will have a recorded vote by the RAB itself on the new Joint Base, which Kalaeloa was added into.

Q2: (Mr. Higa) As far as the CIP…there's hundreds of thousands of people in the community and you got 96 responses. Is that something that is valid?

A2: (CAPT White) I will give you my opinion on this, which this is a very valid point. 96 out of 1 million people is not representative. However, it may be mathematically valid because I believe probability requirements are 32 to have a valid number. That's neither here nor there. It's a small enough number that shows that we need to do a better job reaching out to younger folks and everyone else. Point well taken.

Comment 1 (C1): (Mr. Higa) If you guys get out to neighborhood boards and let them know so that they can inform the community…that way you touch everyone on the island. Thank you.

Q3: (Ms. Lin, online) Where can we find an electronic copy of the presentation slides?

A3: (Ms. Tamashiro) The presentations will be emailed out after this meeting has concluded, along with the draft minutes.

C2: (Mr. Curtis) Will they also be posted to this new website?

C3: (Ms. Tamashiro) The Google Docs website?

C4: (Mr. Curtis) No, the massive website you've created to hold documents on.

C5: (Ms. Tamashiro) Yes, they can be posted to the AR website.

C6: (CAPT White) I do believe they have not been up until this point, is that correct?

C7: (Ms. Tamashiro) I myself had trouble finding several of the old documents, so I don't believe so.

C8: (CAPT White) So when you agreed to Mr. Curtis' note, that means moving forward we will be posting these slides on that website. Is that what we're agreeing to?

C9: (Ms. Tamashiro) Yes.

Q4: (Mr. Lau) This is not a question, but an offer. To get the word out on the community involvement, we would be glad to work with you as a partner in getting the word out in advance. We do it through a variety of means: through websites, through our presentations at most of the neighborhood boards around the island, social media. We'd be glad to partner with you to get the word out. Like on that survey, we could've put that on our water bill to 170,000 people—customers that get their water bill from the Board of Water Supply—ahead of time to let them know about the RAB meetings, which I believe is very important.

VI. TECHNICAL PRESENTATIONS

Ms. Tamashiro introduced herself as the ER Manager at NAVFAC Hawaii. Ms. Tamashiro explained that the ER Program is responsible for addressing historical releases of hazardous substances to the environment, and that topics related to the closure of Red Hill and any fuel remediation fall under a different program and will not be discussed at this particular meeting. Ms. Tamashiro noted before beginning the presentation that the Navy has not received all validated results from the PFAS groundwater sampling event that started in September 2024 and ended mid-November 2024. The Navy is currently waiting for validation, which is standard process. An independent third party has to review all data and how the laboratory ran their procedures to analyze the samples sent to them. Therefore, the Navy is not prepared to discuss PFAS at Red Hill at this particular meeting.

Understanding Pathway Analysis and Groundwater Plumes – Ms. Jocelyn Tamashiro, NAVFAC Hawaii, and Ms. Kim Markillie, Navy Region Hawaii

Ms. Tamashiro began the technical presentation by noting that these were two topics requested by the RAB (i.e., what are the contaminant pathways to Pearl Harbor, and can the Navy do a holistic plume review in groundwater).

The ER Program follows CERCLA, which addresses past practices of waste disposal and hazardous substance spills before there were laws and controls. Slide 7 presented the CERCLA framework, which is made of the investigation phase (Preliminary Assessment, Site Inspection, RI, Feasibility Study, and Record of Decision), cleanup (Remedial Design, Remedial Action Construction, and Remedial Action Operation), and Long-term Management to Site Closeout. The Pearl Harbor Sediment site is currently in the Remedial Action Construction phase, and data and reports have been shared with the RAB throughout the entire process.

When starting an investigation, a conceptual site model (CSM) is developed. A CSM is an interpretation of site data that organizes the best understanding of the site conditions at that particular time. The CSM can help identify where there are data gaps and supports planning for sampling, risk assessment, and remedy selection. The definition and components of a CSM were presented on Slide 8, and an example of a graphical CSM was presented on Slide 9. The CSM illustrates the relationship between contaminant sources and receptors through potential or actual migration and exposure pathways. An example of a tabular CSM was presented on Slide 10 depicting the physical, chemical, and biological processes that influence the transport of contaminants from sources to receptors in a flowchart.

Elements of a CSM should include information on the local environment (e.g., geology, hydrogeology, topography), migration pathways, sources of contaminants, human and ecological site receptors, and

activities by those receptors that could result in exposure to site releases. This information guides the Navy in deciding what media to sample, where to sample, depth of sampling, number of samples, and if organisms should be sampled, and other decisions to verify the assumptions in the CSM.

CSMs also help to evaluate potential risks from exposure to chemical contaminants released into the environment to the health of humans (e.g., children, residents, industrial workers, recreational visitors) via the Human Health Risk Assessment (HHRA) process and to ecological receptors (e.g., birds, fish, mammals) via the Ecological Risk Assessment (ERA) process. Examples of ERA and HHRA CSMs were presented on Slides 12 and 13. The HHRA does not address or account for risks from other sources of exposure, such as dietary exposures unrelated to the site or from naturally occurring chemicals that are not associated with releases at the site (e.g., metals that are common in volcanic soils).

Ms. Kim Markillie thanked Ms. Tamashiro and stated that for sediment sites, such as Pearl Harbor, the Navy requires a watershed contamination source document to be developed in addition to the site -specific CSM. This document identifies and documents Navy and non-Navy sources whose activities may have impacted the harbor sediments. A figure summarizing the data collected during previous field investigations in Pearl Harbor as part of the CERCLA process is presented on Slide 14. To date, a total of 830 sediment samples and 258 tissue samples of organisms living in or on the sediment have been taken. An extensive list of 243 chemicals of potential concern were initially analyzed for in the 1996 investigation; since then, the list of chemicals was refined and focused to a list of specific COCs according to sampling results. The State of Hawaii Department of Health (DOH) issued the harbor-wide fish and shellfish consumption advisory for Pearl Harbor as a result of the 1996 sampling event, and this advisory is still in effect today. Because it is a group of relatively new emerging contaminants, PFAS were not evaluated in previous investigations at the Pearl Harbor Sediment site; however, the potential presence of PFAS in harbor sediment will be evaluated as part of the upland PFAS investigations of areas of interests within the vicinity of the harbor that show a potential pathway to the harbor sediments.

The CSMs specific to the Pearl Harbor Sediment site were presented to the public in February 2016 and were open to public comment in the Proposed Plan prior to finalizing the Record of Decision in September 2018. The ERA CSM is depicted on Slide 15 and identifies routes of concern for ecological receptors. These include direct contact and ingestion of chemicals in or on sediment particles and dissolved in sediment porewater by organisms living in or on the sediment surface (e.g., benthic/epibenthic invertebrates), and exposure of higher trophic level organisms (e.g., fish and waterbirds) to chemicals that bioaccumulate in the tissues of organisms. Ms. Markillie noted that this CSM is a living model and is revised as things in the environment change (e.g., new contaminants are discovered).

The baseline ERA identified four groups of marine life as assessment endpoints to evaluate risk to marine organisms. These groups included AE-1 (invertebrates living in sediment and having direct contact with sediment, or macroinfauna), AE-2 (invertebrates living on sediment and having direct contact with sediment, or epifauna), AE-3 (bottomfish feeding on both macroinfauna and epifauna and having direct contact with sediment), and AE-4 (waterbirds feeding on macroinfauna, epifauna, and bottomfish, and having incidental contact with sediment). The ERA determined that there are complete pathways for ecological receptors exposed via dermal contact with or incidental ingestion of sediment (e.g., invertebrates and bottomfish), and for higher-trophic level ecological receptors (e.g., waterbirds) exposed through consumption of fish and invertebrates in the harbor. The Navy evaluated species representing three of the four assessment groups to evaluate risk to marine organisms by taking tissue samples. Tissue samples were collected and analyzed from ghost shrimp, snapping shrimp, and polychaete worms (AE-1, macroinfauna); blue-clawed stone crabs (AE-2, epifauna); and bandtail

goatfish (AE-3, bottomfish). Results of the ERA determined risk to bottomfish is greatest of the organisms evaluated. For this reason, the bottomfish was selected as the representative ecological species for the site. By addressing risk to bottomfish, risk to all other ecological receptors will also be reduced. Bottomfish were collected from 24 locations throughout the harbor in 1996, 2009, and 2017 and will continue to be sampled periodically as part of the long-term monitoring program for the site. As a result of the ERA, two remedial action objectives were developed to address unacceptable risk to ecological receptors.

The HHRA CSM for the Pearl Harbor Sediment site is depicted on Slide 17. The HHRA evaluated several transport mechanisms for risk to human health from exposure to COCs in sediment, including direct contact through incidental ingestion and dermal absorption, bioaccumulation through ingestion of fish/shellfish, inhalation of volatile organic compounds, and inhalation of windborne particulates. Additionally, risk to human health from exposure to COCs in surface water via direct contact by incidental ingestion and dermal absorption and potential inhalation of volatile organic compounds was evaluated. Inhalation of particulates was not considered a complete pathway because sediment is a wet medium and does not allow for particulate suspension in air. Because of Pearl Harbor's size and the variety of land uses surrounding the harbor, it was determined that several populations are potentially exposed. A potentially complete and significant pathway for risk to human health is from ingestion of fish/shellfish. As a result of the HHRA, one remedial action objective was developed to reduce risk to human health through the fish consumption pathway. By reducing the concentrations of chemicals in sediment, the concentrations in fish tissue will also decrease and are intended to meet the DOH's level for limited fish consumption.

Mr. Curtis asked if questions could be taken before moving on to the topic of groundwater plumes. Ms. Tamashiro agreed.

Q1: (Ms. Takemoto) On your slide, you have the Hawaiian stilt, which is an endangered bird, so you cannot do any testing, but have you tried a different species of water bird?

A1: (Ms. Markillie) Well, we actually correlated in our ERA the California stilt, which is a very similar species and there is a very robust database on that stilt. We used that particular species to correlate what type of risk the Hawaiian stilt may have.

C1: (Ms. Takemoto) So you did it as a comparison, but not as a live test?

C2: (Ms. Markillie) That is correct.

C3: (Ms. Takemoto) Did you try any other birds that are native in Hawaii versus a species that is on the mainland?

C4: (Ms. Markillie) No, we did not.

C5: (Ms. Takemoto) Like the egret or something like that? They're exotic but they're plentiful and not endangered.

C6: (Ms. Markillie) That is correct, you're right there. I'm actually not sure if we included the egret. This baseline ERA was done a while ago but I can look into that. If we don't have a database for our species here in Hawaii, what we attempt to do through our ERAs is use a database that is similar or the cousin of that specific species. There is a fairly robust database that exists for egrets and for the California stilt.

C7: (Ms. Takemoto) Yes, but is there a correlation between the Hawaiian stilt and the California stilt? Because they may not be that similar. You might be comparing apples to oranges as opposed to a fuji apple versus a delicious apple. You've identified an endangered species, which leads you to think, did you do tests on an endangered species?

C8: (Ms. Markillie) No, we did not.

C9: (Ms. Takemoto) So that's why the question is why did you use the Hawaiian stilt?

C10: (Ms. Markillie) They're very prevalent in Pearl Harbor.

C11: (Ms. Takemoto) Right, I understand that. Is the reason why you're using that is it's some type of marker? Or to see what impact it would have on the Hawaiian stilt?

C12: (Ms. Markillie) It is one species that we have identified as part of our ERA and want to make sure that they are protected.

C13: (Mr. Steve Hurff) The AE-1, AE-2, AE-3—invertebrates, macroinfauna, epifauna, and bottomfish do get sampled. What you're looking at there is what the bird would be eating, so the risk to that bird. So you're trying to examine not that bird directly, but what the bird would feed on so it's protective in the eventual remedy. So from that standpoint you're trying to look at a representative species that would be potentially at risk if you're looking at everything else below it in the food chain. Did that make things a little bit clearer?

C14: (Ms. Takemoto) No, I understand the concept. I'm just wondering what impact—I understand the CSM and why you're using that but my question is, we do have the Hawaiian stilt there feeding on some of the contaminants. Eventually, what happens to the Hawaiian stilt and the impact? I am concerned because it's an endangered species. I'm trying to figure out how you can preserve or reduce the risk to an endangered species, that's all.

C15: (Ms. Markillie) Absolutely, and that is one of our remedial action objectives. That is by reducing the concentrations of chemicals or the availability of those chemicals to ecological species, then we're basically breaking that chain, right? If you take the contaminant out, if you dredge it or you put sand over it or whatever remedial action we're implementing for a specific area, then you're removing the contaminant that is impacting the fish specifically and the epifauna and the macroinfauna which that bird feeds on.

[Based on the conceptual site model, the following representative bird species were evaluated during the ecological risk assessment: omnivorous waterbirds (represented by Hawaiian stilt, Hawaiian coot, Hawaiian duck, Hawaiian moorhen, and black-crowned night heron), shorebirds (represented by the wandering tattler), and piscivorous (fish-eating) seabirds (represented by the sooty terns). These bird species may be exposed to and/or bioaccumulate contaminants by consuming food items living in, on, or in association with the sediment (e.g., macroinfauna, crabs, and bottom fish) or from incidental consumption of sediment. The Hawaiian stilt was used as an example of a waterbird in the presentation. The egret was not included as part of the ecological risk assessment.]

Q2: (Mr. Curtis) Can you put up the map of Pearl Harbor? I want to make two comments about West Loch. First, the Walker Bay site had dioxin level that was unusual because normally you go out from the contamination site to see where it stops. Whereas at Walker Bay, you assumed that the last test site is where it ended even though it was very hot. Dioxin levels were one thousand times the cleanup levels. The settlement agreement was settled in 2021 and it appears that in West Loch, the last thing

tested in the water was in 1996. That's my first question. My second question is, I attended a webinar last week from the University of Hawaii Water Resources Center looking at contamination at the upper end of West Loch near the marshes. They found significant hits on certain substances in the water in West Loch but it appears again that you've done no testing on West Loch in 28 years.

A2: (Ms. Markillie) Let me address your first question. That portion of West Loch—Walker Bay—is actually a site that has been chiseled out of the Pearl Harbor Sediment project. It is its own site, as well as the West Oahu Ash Landfill because it has known levels of contamination that are, like you said, very high. They are doing a CSM and an investigation based on the land-based contamination associated with that site. It is being investigated separately. I don't know when, I want to say 2019 was the last time we did any sediment sampling in Walker Bay, but I'm not sure about that actual date.

C16: (Mr. Curtis) I realize that's confusing because the military took the land then gave it out to a sugar company who used it as a pesticide mixing area who then went out of business.

C17: (Ms. Markillie) Yes, they went bankrupt, that's right. So that site is being addressed. Your second point to West Loch is that West Loch continues to be sampled and will be part of the long-term monitoring program. It may not be where it has as many sample locations but it will continue to be part of the long-term monitoring program. I do believe it was sampled in 2017, so if that's not shown in the figure then I need to check on that.

C18: (Mr. Curtis) I don't see any yellow in West Loch in 2017.

C19: (Ms. Markillie) So the last one was in 2009.

C20: (Mr. Curtis) I don't even see the 2009.

C21: (Ms. Markillie) That doesn't seem right to me, actually, but we have 2009 fish tissue sampling locations that are included in there and those are always co-located with sediment samples. I will have to check on this figure and see if we got that one wrong, Henry. Thank you.

[The Navy has reviewed and revised the figure, provided in Attachment B, to correctly show all the sampling locations from the 1996, 2009, 2012, and 2017 field investigations. There were several sampling locations in the previous figure that were erroneously not shown and/or covered by other sampling locations. The revised and corrected comprehensive figure showing all locations ever sampled is provided for your information. All sampling locations shown in the revised figure have been verified against the reports submitted from each of the sampling events which are available for public review in our information repositories:

- 1996 and 2009 data sets are included in the Remedial Investigation Addendum, Pearl Harbor Sediment, January 2013.
- 2012 data set is included in the Feasibility Study, Pearl Harbor Sediment, June 2015.
- 2017 data set is included in the Basis of Design Field Investigation Report, Pearl Harbor Sediment, August 2019.]

Q3: (Mr. Higa) As far as your biota testing from 1996 to 2017, have the chemical levels gone down, stayed the same, or gone up? I see you sampling all of Pearl Harbor, but as far as the actual data, what's happening?

A3: (Ms. Markillie) That is an excellent question. They have gone down in certain areas, stayed the same in others, and are kind of hovering in a little bit higher range in other areas, which is why we have to continue to sample the site. One comment here too though is that the remedial action construction was only implemented in 2019 and has not been fully completed to date. So from 2019 to today, and I presented on that in September, we have remediated a lot of these areas of Pearl Harbor. We still have some areas to go, and some of these remedial action objectives are not immediate. They're going to take 10, maybe 20 years. Southeast Loch, especially, our remedial action objective is a 20-year timeframe. We're not going to see this happen immediately. We'll have to be a little bit patient as we're able to remove contamination from the harbor and start to see those species recover.

C22: (CAPT White) When you post this slide deck, can you post the last one that addresses exactly that last question? So this gentleman can get a good look at that and see where those numbers went. Maybe that will help, I know it doesn't answer it exactly on your question, but can we post that last slide from the September slides please?

C23: (Ms. Markillie) Yes, sir.

Q4: (Mr. Higa) As far as the CSM, are you guys using state-of-the-art technology or are you relying on something that was done in the '70s and '80s? Have you guys ever heard of Genki Balls that were used to clean up the Ala Wai? Those are working very well. The Ala Wai was very polluted, and the Genki Balls helped out a lot, but when I look at what you guys are doing, I'm not sure if you're using technology that was done in the '60s or '70s. What is the basis? Are you modeling it after something done in the '70s, '80s, or is it state-of-the-art technology you guys are looking at? And I have personal experience, my neighbor still fishes in Pearl Harbor and the crab still tastes very good.

A4: (Ms. Tamashiro) When we do a remedial action, we always identify and evaluate how that remedy is working. Through several processes—one of them is our Five-Year Review process, another is our optimization review process—we evaluate how well our remedies are working out, and if they're not meeting our goals for reduction of contamination in sediments within a certain amount of time, then we have optimizations that are done to the remedies, which means that we look at other technologies. We have an entire department that takes a look at other technologies that are available. When Kim [Markillie] put together the remedial action construction remedies back in 2018 or prior to that, I'm not sure if Genki Balls were being used back then. I know they're more recent in cleaning up the Ala Wai. Those are definitely things that we would take a look at to see if there's any more contamination that needs to be addressed, and what are some newer ways that we could look at addressing.

C24: (Ms. Markillie) I just want to add to that, with Pearl Harbor specifically, we also did a treatability study and we evaluated different types of organic carbon methods of cleaning up sediment. It doesn't actually clean sediment, but it binds to the sediment and effectively reduces the bioavailability of contamination up to 97%. This is one of the methods we are implementing in the harbor.

Mr. Curtis asks if there were any online questions, and there were not.

Q5: (Mr. Huber) I just wanted to mention something very important. I got back from the mainland in Las Vegas for a couple days visiting a friend and watched a news article, I was shocked. It was about PFAS and the Las Vegas Water Authority—Ernie [Lau] might know about this. Back in 2022, they were funded by the United States Environmental Protection Agency (EPA) for $10 million to clean up an area in an old neighborhood called Hillcrest—120 homes with eight wells, one well which was contaminated. The other source was Lake Mead. They took care of that, and they had money leftover and they used it to do testing in a wash that went out to Lake Mead. They found that 48% of the wastewater that was treated going out to Lake Mead contained PFAS. I think we're working backwards

here. We're not looking at the underlying antecedents with our laws regarding wastewater in the state. They've changed them in real estate, and they continue to change them. I was in Maui working on the plumes and I talked to Panilla over there about getting bills up, but he dropped out. We got it up about converting cesspools to septic for 6 months after the sale, which is a blessing. Then that changed. The state is not looking at this. We need more cohesiveness between federal, state, city and county, and all the parts of city and county, as well as the Navy. The real underlying antecedent here is the benzene and all the other known PFAS, PFOS. But now they're saying look at M5 and all these other things they're finding in wastewater. Santa Clara Valley has the same thing going on.

Ms. Kawasaki stated that we need to continue with the presentation and will take questions at the end.

Ms. Tamashiro stated that this is a very good segue into the next topic, which is the hydrogeology evaluation. Ms. Tamashiro noted that Mr. Curtis has asked if the Navy can do a holistic review of all wells to understand how water moves underground. The Navy does this by developing a CSM that includes elements such as the geology, hydrogeology, groundwater flow direction, how groundwater and surface water interact, potential migration pathways, source areas, known and suspected contaminants, affected environmental media, and presumed extent of contamination. Following EPA and DOH guidance, the Navy's investigations start at the source of the release and step outward from that source to determine where the extent of the contamination is. Wells are installed and sampled several times to ensure data is representative of what's in the aquifer, and the CSM is updated based on the data collected. Step-outs and additional sampling might not happen right away, but the CSM helps to identify and optimize where those additional step outs are needed. The CSM also identifies what missing data might help to identify things like preferential pathways. The Navy uses natural attenuation software, visualization software, and recovery and distribution models to predict the movement, recovery, and degradation of light non-aqueous phase liquid. Coupled with sampling, natural attenuation modelling can help predict how long a remedy might take in order to achieve cleanup goals. An example CSM is shown on Slide 18, which depicts a landfill and the potential migration pathways to a surface water body, as well as receptors.

Ms. Tamashiro reminded attendees that with respect to Mr. Huber's comment regarding wastewater, the ER Program looks at historical releases of substances. Household items that are used in everyday lives that may contain PFAS or substances that are pushed through septic systems as a result of human use that contain PFAS are not covered under the ER Program.

Q6: (Mr. Huber) Why is that? Federally, is it a law? Where does it stem from, why isn't it covered? Effluent coming from runoff could be one of the most hazardous things that we have going on.

A6: (Ms. Tamashiro) Wastewater is sampled and managed under our Environmental Compliance Program. It's a completely different program that monitors that type of system. It's not environmental restoration monitoring that oversees wastewater.

C25: (CAPT White) If we start interrupting the briefer until the end, we're going to set a precedent where we never move on. I appreciate if you have questions about that. Please finish the slide and then we'll come back to you so we can wrap the whole brief up.

Ms. Tamashiro resumed her presentation. Slide 19 depicts a figure of sites with known contamination marked with green circles around the Pearl Harbor area. The sites are not just sites on Navy property, and also include sites that belong to gas stations, industrial facilities, the airport, or businesses. Because there are many non-Navy sites, a regional evaluation would not give the Navy the information it needs in order to clean up a Navy site. A regional evaluation would not identify the source of contamination that is found, and regional models could miss plume behavior at individual sites. For this reason, the

ER Program only does models where it makes sense to use them, and for sites where light non-aqueous phase liquid is present or likely to migrate. Modeling is not typically used because if a plume is delineated, then it is not necessary to do modeling. Ms. Tamashiro provided a link for the ER Program Manual that goes through the entire cycle for how the program does investigations and cleanup, as well as links with more information regarding CSMs. Ms. Tamashiro also reminded attendees of the QR code and link on Slide 21 for the AR. AR files are available for the public to view documents related to sites at Navy and Marine Corps installations. Redactions in these documents are only made when needed to protect personally identifiable information or national security.

Q7: (Ms. Takemoto) Regarding Robert [Huber]'s question, I don't think a lot of people understand what the ER Program is. It's a separate program and it depends on the spills and when the contamination occurred. If it spills right now, it might not be under the ER Program. So it might be helpful to explain what the ER Program is and give people background. It's not everything where you have contamination. It's a specific designation and specific funding that comes out of the Department of Defense for these types of cleanup. That might help distinguish between wastewater treatment versus past spills.

C26: (Ms. Tamashiro) Thank you.

C27: (Mr. Curtis) You might consider joining the RAB so that you can ask questions right away.

C28: (Ms. Kawasaki) Thank you very much, and that can probably be addressed after our meeting, but ideally, we'd like to finish on time. Any more questions from the RAB? Any questions online? Any questions in the audience?

Q8: (Mr. Huber) I'm kind of unclear on somethings, I understand the spill-specific funding point. But if it's an ongoing PFAS where it's constantly being input, you're bringing in more PFAS and there's more spill, how do you remediate it when there's more spill if we can't get to the underlying cause or root, which they're saying 48% of wastewater has PFAS?

A8: (Mr. Hurff) The Navy complies with environmental laws and regulations. At this moment, wastewater is one of those areas for which there are not currently limits for PFAS. It is related to regulatory agencies and I do not wish to speak on regulatory agencies. They are obviously considering this because as you've noted, PFAS is found in a lot of different places. The more those sources are cut off, the less we'll see it in the environment. As those regulations just came out this past year and this has been an emerging contaminant since 2015, it took some time to get those environmental action levels determined. Looking at that next evolution for wastewater is certainly, I would presume, an area of interest for those regulatory agencies and, when they can, they will provide those regulations and requirements that the Department of the Navy will be compliant with as early as possible.

VII. SCHEDULING OF NEXT RAB MEETING

CAPT White stated that because only a few minutes are left, the next RAB meeting needed to be scheduled. Mr. Curtis mentioned that the DOH and EPA are ex-officio to this crowd and requested that, at the next meeting, the DOH and EPA identify their member that is ex-officio. CAPT White proposed April 16, 2025, for the next RAB meeting to allow time to finalize the RAB charter. RAB members agreed to this and, therefore, the next RAB meeting was scheduled for April 16, 2025.

VIII. QUESTIONS AND ANSWERS

Q9: (Mr. Kajihiro) I was wondering if the Pu'uloa Firing Range, which is Marine Corps, would that fall under ours…and what would trigger possibly addressing that?

A9: (Mr. Hurff) The Pu‘uloa Range is an active range. It isn’t a cleanup site until that range were to actually close. If the range ever did close, yes, it would come to cleanup.

IX. CLOSING

Ms. Tamashiro stated that any comments, feedback, or suggestions could be written on index cards that are located at the sign-in table, and thanked attendees for coming. CAPT White gave closing remarks, thanked attendees for coming, and adjourned the meeting at 8:00 p.m.

For additional information, please contact:

Public Affairs Officer, Code 09PAO
Naval Facilities Engineering Systems Command, Hawaii (NAVFAC Hawaii)
400 Marshall Road
JBPHH, HI 96860-3139
(808) 471-7300
Email: NFHI_PAO_DL@us.navy.mil

Project reports discussing environmental investigation and restoration efforts that were discussed tonight can be obtained from the following Navy information repositories:

Naval Facilities Engineering Systems Command, Pacific *258 Makalapa Drive, Suite 100* *JBPHH HI 96860* *Tel. (808) 472-1428*	*University of Hawaii at Manoa Hamilton Library Hawaiian and Pacific Collection* *2550 McCarthy Mall* *Honolulu, HI 96822* *Tel. (808) 956-8264*	*Pearl City Public Library* *1138 Waimano Home Road* *Pearl City, HI 96782* *Tel. (808) 453-6566*

ATTACHMENT A

LIST OF ATTENDEES

PEARL HARBOR-HICKAM-KALAELOA RESTORATION ADVISORY BOARD (RAB) MEETING

OAHU VETERANS CENTER, HONOLULU, HAWAII

December 11, 2024

1. Adam Miyamoto
2. Alicia Hendrix
3. Allison Hutto
4. Anthony Archibegue
5. Andrew Haner
6. Belinda Turran
7. Bill Manley
8. Carrie Plath
9. Charlotte Rangel
10. Cowan Azuma
11. Cruz Vina Jr.
12. Danielle Espiritu
13. Diego Rivera
14. CDR Dunn
15. Eli Martin
16. Ernie Lau
17. Francie Whitfield
18. Guy Inouye
19. Healani Sonoda
20. Helene Takemoto
21. Henry Curtis
22. Ilima DeCosta
23. Jeff Johnson
24. Jeni Larson
25. Joanna Delfin
26. Jocelyn Tamashiro
27. Joyce Lin
28. Justin Ka‘ahanui
29. Kat Brady
30. Kyle Kajihiro
31. Laua Ebbert
32. Lawrence Higa
33. Lynn Brockway
34. Malia Zinn
35. Marie Johnston
36. Mark Mentikov
37. Marti Townsend
38. Maverick Carey
39. Melodie Aduja
40. Col. Monica Gramling
41. Mick Johnsen
42. Mike Dau
43. Mike Ewall
44. Natasha Griswold
45. Robert Huber
46. Rosalie Luo
47. Ross Prizzia
48. Sherry Pollack
49. Steve Hurff
50. Susan Gorman-Chang
51. Tara Sutton
52. Tonya Russi
53. Victor Flint
54. Watson Tanji
55. Wendell Wen
56. CAPT White

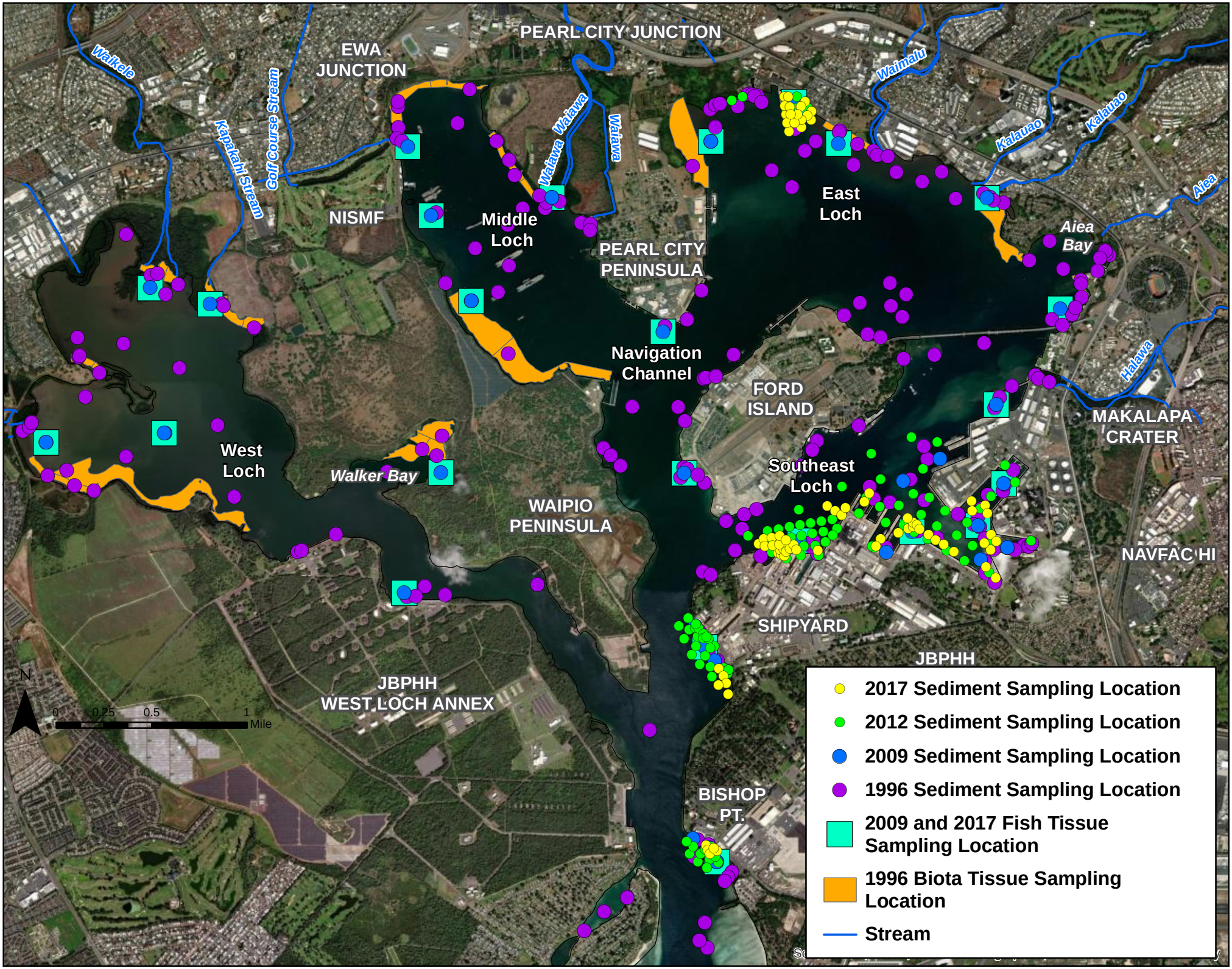
ATTACHMENT B

REVISED FIGURE

PEARL HARBOR-HICKAM-KALAELOA RESTORATION ADVISORY BOARD (RAB) MEETING

OAHU VETERANS CENTER, HONOLULU, HAWAII

December 11, 2024


PEARL CITY JUNCTION
EWA JUNCTION
Waikele
Kapakahi Stream
Golf Course Stream
Waiawa
Waiawa
Waiawa
Waimalu
Kalauao
Kalauao
Aiea
NISMF
Middle Loch
PEARL CITY PENINSULA
East Loch
Aiea Bay
Navigation Channel
FORD ISLAND
Halawa
MAKALAPA CRATER
West Loch
Walker Bay
WAIPIO PENINSULA
Southeast Loch
NAVFAC HI
SHIPYARD
JBPHH
JBPHH WEST LOCH ANNEX
BISHOP PT.
N
0
0.25
0.5
1
Mile
2017 Sediment Sampling Location
2012 Sediment Sampling Location
2009 Sediment Sampling Location
1996 Sediment Sampling Location
2009 and 2017 Fish Tissue Sampling Location
1996 Biota Tissue Sampling Location
Stream