UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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San Francisco, CA 94105-3901

March 21, 2022

Andréa M. Von Burg Hall
Naval Facilities Engineering Command, Pacific
258 Makalapa Dr., Suite 100
Pearl Harbor, Hawaii 96860-3134

Subject: Draft Environmental Impact Statement for the Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility Dry Dock and Waterfront Production Facility (EIS No. 20220011)

Dear Andréa M. Von Burg Hall:

The U.S. Environmental Protection Agency has reviewed the above-referenced document pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The Navy proposes to construct and operate a graving dry dock (Dry Dock 5) and waterfront production facility at Pearl Harbor Naval Shipyard to support maintenance of current and future classes of fast-attack submarines. The proposed action would replace existing Dry Dock 3 and include permanent ancillary facilities such as new power and utilities. Construction of the new dry dock would require dredging within the footprint of the Pearl Harbor Sediments Superfund Site which would undergo remediation dredging prior to project dredging. The project would install construction support facilities including multiple temporary piers at Waipio Peninsula and Pearl City Peninsula, which would involve extensive pile driving for pier installation, followed by removal of piers after dry dock construction, and reinstallation of the same piers to support Stage 2 construction of the waterfront production facility.

The EPA is serving as a cooperating agency for the project EIS and provided comments via cooperating agency meetings and review of multiple administrative drafts of the EIS. We very much appreciate the Navy's responsiveness to our comments, which resulted in substantial improvements to the impact assessment. Comments that were not addressed are repeated here. Our primary concerns include impacts to waters of the United States, marine biological resources, noise impacts to military families, and traffic. We will continue to work with the Navy in advance of the Final EIS.

Impacts to waters of the United States and marine biological resources in Pearl Harbor include the permanent loss of approximately 8 acres of marine waters; impacts to a large patch of finger coral and 0.6 acres of wetlands – both considered special aquatic sites under the Clean Water Act; and adverse effects to other marine life from an extended dredging period and other stressors. Impacts also include habitat loss for endangered sea turtles. We do not agree with the conclusion in the DEIS that impacts to marine biological resources would be negligible. Please see our attached detailed comments and suggestions for reassessing the significance of these impacts.

The EPA is working with the U.S. Army Corps of Engineers on issues related to the Clean Water Act Section 404 permit required for the project. We understand the urgency and strict time schedule to deliver the project and had hoped to assist the Navy in meeting this schedule through concurrent NEPA and 404 permit processes, which is possible if CWA Section 404 requirements are considered early and the EIS includes the information needed for the environmental review to support USACE permitting. While there have been substantial improvements in characterizing and disclosing impacts to waters of the U.S. in the DEIS, it still lacks information needed to address CWA 404 permit requirements thereby hindering the degree to which agencies can expedite the permit. Please see the attached detailed comments regarding our outstanding information needs. We appreciate the cooperation and professionalism of Navy staff and their consultants preparing the DEIS and are available to continue coordination. We also hope to engage with the Navy to ensure internal Navy processes better support NEPA/404 alignment for future projects.

We have concerns regarding significant noise impacts to military families, especially those residing approximately 300 feet away from the project at Hospital Point. These families would experience significant noise stress from pile driving for 10 hours/day, 6 days/week for 14 months of construction of the dry dock followed by 4 months of pile driving reinstallation and removal for construction of the waterfront production facility. Military housing on Pearl City Peninsula would experience significant pile driving noise for up to 4 months for each stage which could affect children's learning at two elementary schools. Repetitive impulse noise from pile driving is especially stressful and would impact military families already burdened by drinking water stressors. We strongly recommend the additional noise mitigation outlined in our detailed comments, including the use of acoustic barriers around pile leads.

We are also providing recommendations regarding traffic impacts, which may not fully reflect the additive effects from the large Aloha Stadium District project planned for construction nearby during the same timeframe as the proposed action. We recommend adaptively managing this impact, which has the potential to affect localized air quality from idling emissions that could disproportionately impact some low-income and minority areas.

The EPA appreciates the opportunity to serve as a cooperating agency on this EIS. We look forward to continuing our work with the Navy through the remainder of the NEPA process. Please continue to coordinate with Karen Vitulano, the lead reviewer for this project, at vitulano.karen@epa.gov. If you have any questions, please contact me at (415) 947-4167, or contact Karen Vitulano at 415-947-4178 or via email.

Sincerely,

JEAN PRIJATEL

Digitally signed by JEAN PRIJATEL
Date: 2022.03.21 17:05:31 -07'00'

Jean Prijatel
Manager, Environmental Review Branch

Enclosures: EPA's Detailed Comments

cc: Susan Gayagas, U.S. Army Corps of Engineers
Gerry Davis, National Marine Fisheries Service
Darryl Lum, Hawaii Department of Health, Clean Water Branch
Chris Kinimaka, State of Hawaii, Public Works Division

Impacts to Water and Marine Biological Resources

The conclusion in the DEIS that impacts to marine waters (p. 3-132) and marine biological resources (p. 3-274) are negligible is not supported. The proposed action would eliminate 7.9 acres of marine habitat (waters of the U.S.) and impact a large contiguous patch of finger coral and small areas of wetlands – both considered special aquatic sites under the Clean Water Act. The DEIS also identifies several significant stressors to sea turtles and marine mammals including those from dredging, extensive noise from pile driving, entrainment/entrapment impacts, loss of sea turtle caves, exposure to night lighting, displacement of prey species, and exposure to chemical contaminants, waste, and pollutants (p. M-16). While the DEIS includes best management practices to reduce impacts, there is no mitigation plan or measures identified to support a reduction of impacts to negligible levels; the DEIS states only that consultation with the National Marine Fisheries Service is ongoing, the Navy will consider mitigation proposed during those consultations, and mitigation will be developed in coordination with the U.S. Army Corps of Engineers to comply with regulatory program permit requirements.

It is important that impact assessments discuss mitigation and its effectiveness. NEPA requires that an EIS discuss the extent to which adverse effects can be avoided,[1] and must include sufficient detail to ensure that environmental consequences have been fairly evaluated. An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective.[2] We recommend the Navy include this information in the FEIS for this project and consider opportunities to allow public review of mitigation before a final decision for the project is made. We also recommend the Navy include mitigation and its effectiveness at the draft EIS stage for future projects.

See comments below regarding the requirements under CWA Section 404 and suggestions to improve the impact assessment.

Impacts to Waters of the United States (CWA Section 404)

Combining NEPA and CWA 404 permitting is a streamlining measure intended to expedite permit timelines. Both processes require alternatives analyses making it important that the alternatives for both processes are aligned and the requirements of the CWA Section 404(b)(1) guidelines (Guidelines) are considered in that process since only the Least Environmentally Damaging Practicable Alternative (LEDPA) can be permitted.

The CWA Section 404 alternatives screening analysis in Appendix F still lacks detail needed to comply with the Guidelines. Section 1.3.1 indicates that Option 1 (Lengthen, Deepen, Widen, and Reconfigure Dry Dock 3) would not be in service by the mission need date of January 2028 and therefore was dismissed; however, there is no information regarding the estimated construction timeframe associated with Option 1 to demonstrate this. Additionally, the DEIS states that Option 1 is not expected to be able to be constructed without affecting schedule operations at Dry Dock 2, citing several challenges (e.g., uncertainties about DD3 and DD2 shared utilities, mechanical systems and infrastructure; logistical challenges related to space constraints, and critical facilities being available during DD3 construction). It is not clear whether these challenges are surmountable or if they will truly render the option not practicable as defined by CWA Section 404.

[1] 42 U.S.C. § 4332(C)(ii))
[2] South Fork v. U.S. Dept, 588 F.3d 718 (9th Cir. 2009)

While we appreciate the additions made to better characterize the impacts to waters of the U.S., particularly Table 3.6-7c, additional information regarding impact avoidance and minimization is needed. CWA Section 404 requires the permit applicant to explain how they planned their project in a manner that first avoided impacts to waters of the U.S., and then minimized impacts wherever possible. This explanation must be provided for all components of the project that impact waters of the U.S. After this process has occurred, the applicant must disclose all unavoidable impacts and present a comprehensive compensatory mitigation plan that compensates for these impacts.

> *Recommendation:* In the FEIS body or appendix, provide additional support regarding construction timeframes and practicability regarding Option 1 as stated above. Document how each project component has been planned to avoid and minimize impacts to waters of the U.S. This should include avoidance and minimization measures to the areal footprint and volume of in-water fill (rock revetment, the pier on Waipio Peninsula, DD5 footprint, etc.). Include how the Navy avoided and minimized impacts to corals (considered special aquatic sites under the Clean Water Act).
>
> We recommend a compensatory mitigation plan intended to offset environmental losses resulting from unavoidable impacts to waters of the U.S. be included in an appendix to the FEIS. Compensatory mitigation requirements are commensurate with the amount and type of impact and CWA Section 404 permit applicants are responsible for proposing appropriate compensatory mitigation for unavoidable impacts. Permanent as well as temporary impacts may require compensatory mitigation depending upon relative duration of impact and the associated loss of ecosystem function. Required mitigation plan components are outlined at 33 CFR 332.4(c) and must address objectives, site protection instrument, baseline information, work plan, maintenance plan, performance standards, monitoring requirements, financial assurances, site selection factors, credit determination, long-term management plan, and adaptive management plan.
>
> If the Navy plans to combine mitigation efforts for Endangered Species Act, Essential Fish Habitat, and CWA 404, then indicate this in the FEIS and outline a plan to comply with relevant regulations, the types of mitigation being proposed, and any challenges/constraints that are anticipated. It is likely that the Navy will need to put together a package of compensatory mitigation which includes significant efforts relative to multiple aquatic resource types across the Pearl Harbor watershed.

Impacts from Dredging – Modeling of Effects

The DEIS uses the "geographic extent of the dredge plume" as an impact indicator for marine biological resources (p. 3-255) and derived the predicted impacts from project dredging from a complex dredge plume model developed previously for dredging scenarios in Pearl Harbor. We appreciate the Navy's attempts to illustrate project impacts using this model; however, as we commented previously, the inputs into the model and the extrapolation of model results to effects on aquatic resources for this project are not sufficient to fully assess impacts to water quality and marine biological resources. Specifically:

- The model still uses rates of 10 hours/day of dredging, which does not align with the project's proposed 24-hour/day dredge cycle (p. 3-210, J-11). Although the DEIS mentions this discrepancy, the results of the model are not extrapolated to predict the concentration and extent of the plume based on the actual anticipated dredging cycle to evaluate potential impacts on sensitive resources. As noted in the DEIS, the dredge plume may affect fishes and protected species, marine vegetation, and corals. Modeling already introduces uncertainty, even with the

most realistic inputs; it's imperative to insert the most representative inputs into models, or at least to extrapolate the results as much as possible to project conditions.

- The DEIS states that the Navy requires the use of full-length silt curtains during dredging (p. 3-270), but Appendix J states silt curtains do not always extend all the way to the seafloor in instances where it is important to prevent disturbance of the seafloor by the curtain (p. J-8). It is unclear whether the release rates of 0.4% and 1%, used in the modeling in Appendix J, are applicable for silt curtains that do not reach the sea floor. To adequately assess impacts on nearby resources, it will be important to have a more accurate description of the release rates anticipated within specific areas of the project footprint.
- The dredge plume modeling only considers impacts from sedimentation; however, as mentioned in the EIS, "in-water work or ground disturbance in areas of known contamination … could impact existing hazardous materials in a manner that increases human or environmental exposure. For instance, disturbance of contaminated sediments through in-water work would cause contaminants to become re-suspended" (p. 3-20). The impact assessment associated with the plume should factor in the potential additive or synergistic effects of sedimentation and contaminant release to fully address potential impacts on aquatic resources. We note that soluble contaminants, particularly heavy metals, can flow through, around, or under silt curtains. Further, as noted in the DEIS, remediation dredging associated with the Pearl Harbor Sediments Site Reasonably Foreseeable Future Action (Table 3.2-4) is expected to occur within the project footprint prior to project dredging for Stage 1 (p. 3-16, 3-113). The DEIS acknowledges the beneficial effects of this remediation dredging to water quality overall (p. 3-21, 3-113), but does not consider the adverse cumulative effects from consecutive dredging projects and how the increased duration of dredging within the same location (i.e., dredging of CERCLA material for the Pearl Harbor Sediments Site followed by dredging for the proposed action) would add to the impacts to marine biological resources.
- The DEIS implies that some marine biological resources will experience only temporary impacts when it repeatedly states that adverse impacts from increased sedimentation would be "localized and short term and would return to existing conditions within approximately 1 day of the conclusion of activities" (p. 3-132, 3-263, 3-265, 3-268). It does not address whether sessile marine biological resources could survive persistent impacts 24 hours/day, 7 days/week, for 15 months.

Recommendations: To address the issues identified above, we recommend the FEIS:

- Discuss how the dredge plume maps would differ under the more intense dredging scenario proposed for the project.
- Clarify whether the release rates of 0.4% and 1% are applicable for silt curtains that do not reach the sea floor. Clarify where the Navy will use full-length silt curtains and where curtains that do not reach the floor will be used and revise the model and results accordingly. We note that when dredging contaminated sediment, anchoring silt curtains to existing structures, including any sheet piles placed for construction, has proven to be more effective than using silt curtains alone.[3]
- Include the resuspension of contaminants when discussing dredge plume modeling results in relation to marine biological resources and identify the limitation of silt curtains in containing soluble contaminants. Discuss how remediation dredging for the Pearl Harbor Sediments Site preceding project dredging will cumulatively add to impacts to marine

[3] Francingues, N. R., and Palermo, M. R. (2005). "Silt curtains as a dredging project management practice," DOER Technical Notes Collection (ERDC TN-DOER-E21). U.S. Army Engineer Research and Development Center, Vicksburg, MS. https://erdc-library.erdc.dren.mil/jspui/bitstream/11681/8750/1/TN-DOER-E21.pdf

biological resources. Quantify the increased dredging duration and indicate timeline proximity for the two actions, if known.
- Indicate the likelihood that marine biological resources, primarily sessile ones, could survive continuous dredging for 15 months.

Impacts to Corals

We appreciate that the DEIS states that "Considering the length/timeframe of the construction activities, effects from suspended sedimentation on corals could be substantial" (p. 3-268); however, the DEIS still concludes that adverse impacts to marine fauna, including corals, would be negligible and not result in a measurable change to this resource (p. 3-274). We note that the thresholds used to evaluate impacts to corals appear to be higher than those cited in recent literature, including the Tuttle & Donahue 2020 agency-sponsored study cited in the DEIS.[4] That study concluded:

- Corals experience both physiological and lethal responses to concentrations below 10 mg/cm2/d and 10 mg/L, levels previously identified as 'normal' on reefs, and relatively few studies examine coral response at these sediment levels.
- In response to deposited sediment, adverse effects occurred as low as 1 mg/cm2/d for larvae (limited settlement rates) and 4.9 mg/cm2/d for adults (tissue mortality).
- In response to suspended sediment, adverse effects occurred as low as 10 mg/L for juveniles (reduced growth rates) and 3.2 mg/L for adult corals (bleaching and tissue mortality).
- Corals take at least 10 times longer to experience tissue mortality from exposure to suspended sediment than to comparable concentrations of deposited sediment, though physiological changes manifest 10 times faster in response to suspended sediment.

Recommendations: In the FEIS:

- Ensure impacts from dredging on water quality and coral resources consider the thresholds from the studies summarized in Tuttle & Donahue 2020.
- Discuss how the Navy avoided and minimized impacts to corals, and how it will compensate for the loss of coral and other sessile marine species that would be harmed.
- Identify the loss of 7.9 acres of marine habitat in the marine biological resources section, as is disclosed for the Water Resources section, and in all summary tables.

<u>Noise Impacts</u>

We appreciate the Navy's responsiveness to our previous comments on noise impacts which resulted in a much-improved disclosure of construction-phase noise in the DEIS. Substantial noise impacts from pile driving will occur from project construction. We have remaining concerns regarding noise impacts to military families and children, the same population already bearing the burden of drinking water contamination. We urge the Navy to make additional efforts to reduce this added stressor. We have two recommendation areas.

Consecutive Project Phases

Pile driving is necessary for project construction, but many piles are for temporary construction support facilities that will be removed after Stage 1 (dry dock construction) and reinstalled and again removed for Stage 2 (waterfront production facility construction), including those for the offloading pier at Dry Dock 5 near Hospital Point housing, the material offloading pier and finger piers at Waipio Peninsula, and the L-shaped pier at Pearl City Peninsula near military housing located there.

[4] The Tuttle & Donahue 2020 study and results are also more recently available in a peer-reviewed journal article, see Tuttle, L.J., Donahue, M.J. Effects of sediment exposure on corals: a systematic review of experimental studies. Environ Evid 11, 4 (2022). Available: https://doi.org/10.1186/s13750-022-00256-0

We understand that the DEIS needed to assume this pile removal since Stage 2 is not yet funded and there would be no contractor present to maintain the facilities between the construction stages. However, should non-consecutive construction occur, additional and substantial noise impacts from this repeated pile driving would occur that could be avoided. Children comprise a large portion of residents in both Hospital Point Housing and Pearl City Housing and the elevated noise levels during construction could disproportionately impact children (p. 3-388). Consecutive construction would eliminate the need to reinstall and remove 1,243 piles (p. 3-257).[5] Each pile requires 1,800 strikes (Table K-12). Impulsive sounds such as pile driving are associated with higher levels of personal annoyance than tonal sounds and the DEIS states that impulsive sounds generally have a greater capacity to induce physical injury compared with sounds that lack these features (p. K-7). Planning efforts to achieve consecutive construction would benefit marine biological resources as well; the DEIS states that pile driving noise would create potentially injurious noise levels in the water column (p. 3-264) causing sound of sufficient intensity to cause potential injury to fishes, sea turtles, and marine mammals, depending on distance from the activity (p. M-18).

> *Recommendation:* We recommend the Navy commit to taking all necessary steps to achieve consecutive construction of Stages 1 and 2 to avoid the impacts from potentially unnecessary repeated pile driving noise that would harm military housing residents, especially at Hospital Point, and potentially injure fish, sea turtles, and marine mammals. Indicate in the FEIS that such administrative planning efforts would occur and ensure that process starts as soon as applicable. We also recommend discussing the possibility that the Navy could assume maintenance tasks for the temporary piers such that they would not need to be removed between construction stages. We recommend construction contracts indicate that the decision whether to remove the temporary construction facilities occur closer to the end of the 65-month construction period for Stage 1 so that this possibility can be assessed in light of funding scenarios at that time.

Additional Noise Mitigation

Despite significant noise impacts to sensitive residential receptors including disproportionate impacts to children (p. 3-389), there are few BMPs and mitigation measures for noise in the DEIS. We very much appreciate the Navy's addition to the noise analysis that identifies the existence of portable acoustic barriers that can be installed around pile leads that may provide a noticeable decrease in pile driving noise levels (p. 3-175). We strongly recommend these barriers be included in the project to reduce noise stressors from impulse noise to Hospital Point housing residents, which would occur for 10 hours/day, 6 days/week for 14 months, and for Pearl City housing which would also affect two elementary schools, at 10 hours/day, 6 days/week for 2-3 months (p. 2-37). We do appreciate that a mitigation measure states that the Navy would work proactively with affected schools to identify potential noise-reducing mitigation measures, but more specificity is needed.

There are several other mitigations that could be implemented for noise impacts. We repeat our previous suggestions below.

> *Recommendations*: We urge the Navy to utilize portable acoustic barriers around pile leads to reduce significant impacts to military families from pile driving. Provide additional information in the FEIS on how the Navy would work with schools to identify noise mitigation. We recommend written correspondence to school administrators in advance of construction.

[5] Construction support facilities would require installation and extraction and reinstallation of 308 piles at Pearl City Peninsula, 377 piles at Waipio Peninsula, and 558 at PHNSY & IMF (Table 3.11-9a).

Establish a more developed noise mitigation program for the project to include noise monitoring, a noise disturbance coordinator and complaint hotline, and education and outreach components:

- Consider noise monitoring: to obtain baseline levels; to determine if the maximum predicted levels for the 2 schools were accurate; and to capture multiple noise sources for sensitive receptors. Having actual noise monitoring results can help the Navy address complaints.
- Identify a noise disturbance coordinator who would promptly respond to noise complaints and monitor noise and construction activity so the Navy can be aware of the most disturbing activities and make any feasible adjustments as needed. Display notices with the noise disturbance coordinator's contact name and hotline for noise complaints in a conspicuous manner, such as on construction site fences. Use the noise complaint program to track complaints over the construction period.
- Provide regular outreach and education regarding project noise as a mitigation measure since, as noted in the DEIS, noise is less annoying if people are informed in advance. Because of the long construction period, we recommend regular project updates including the nature of the work occurring for each location during a specific time period; we recommend quarterly updates throughout the 65 month construction period for Stage 1, potentially through a project newsletter.[6] Such regular outreach and education would address some of the non-acoustic variables influencing noise annoyance that are identified in in the DEIS (p. K-15), including predictability of the noise, feeling about the necessity or preventability of the noise, and feeling of fear associated with the noise. We recommend written notice be provided in advance of construction.

Air Quality and Climate Change

Cumulative Impacts from Traffic

As the DEIS indicates, traffic congestion can result in higher exposures to idling vehicle emissions (p. 3-383) along with other public health and safety impacts (Table 3.15-5). The DEIS identifies the other reasonably foreseeable future actions that would occur in the region of influence during the same time frame as the proposed action and states that the analyses take these factors into account to determine the potential for additive effects (p. 3-1); however, the potential magnitude of cumulative traffic impacts from the large Aloha Stadium District Redevelopment project, expected to occur nearby during the same construction timeframe, may not have been fully considered, especially with regard to workforce Option 5. The lone BMP to implement traffic control plans and the mitigation measure to move construction start times earlier than peak traffic may be insufficient considering the cumulative traffic impacts from the Aloha Stadium District project. According to press reports, the public has already expressed concerns regarding traffic impacts for that project.[7] A more developed and integrated traffic control mitigation concept is needed to address cumulative impacts to air quality and public health and safety, which could include traffic impacts to emergency vehicles, which were not identified.

Recommendation: In the FEIS, discuss the magnitude of cumulative traffic impacts from the Stadium redevelopment project and how this would affect the predicted project traffic impacts, including those from workforce commuter Option 5. Identify potential traffic impacts to emergency vehicles under public health and safety. We continue to recommend the contractor coordinate traffic control plans with the stadium project managers. We recommend an adaptive management framework where traffic is monitored and responsive actions are identified. For

[6] The newsletter could reveal the importance of the work to the community and military mission since it is largely affecting on-base family housing; any monitoring results if data is collected; and the name of the noise disturbance coordinator and hotline.

[7] https://www.hawaiinewsnow.com/2021/11/22/plans-new-aloha-stadium-moves-forward-state-reaches-out-developers/

example, the contractor should plan to implement more than one commuter transportation option and/or other remedies should monitoring identify unacceptable traffic impacts, which would not only affect local residents but could slow the construction schedule.

Localized air impacts at Hospital Point

While the DEIS does not predict significant adverse impacts to regional air quality, localized air quality impacts to locations nearest construction activity would occur; the DEIS indicates that, for ground-level emissions, concern would be focused on receptors immediately adjacent to the emission sources (p. I-2). The closest residential area to construction activity is the Hospital Point housing area, located 250-300 feet from the Dry Dock 5 site, and downwind from all construction activity at Dry Dock 5, Waipio Peninsula, and from marine vessels in Pearl Harbor. Marine vessels include barge transits at Landing C and all vessels transporting materials at the new offloading dock adjacent to Landing C. Workforce commuter options 2, 4 and 5 could utilize Landing C for ferry transport of workers. The DEIS acknowledges that Hospital Point housing could be subjected to cumulative impacts from multiple activities, which may have the same effect as being subjected to continuous impacts from a single activity area (p. I-3). According to the DEIS, this housing area has a population of 46 (p. 3-174) and children comprise a large portion of these residents (p. 3-388). Because this location has the highest potential for cumulative air quality impacts, extra efforts are needed to reduce localized emissions here. The DEIS includes BMP AQ-4 that states that electric-powered equipment will be used if practical (p. 2-89), but it is not clear how this would be determined or implemented. The DEIS acknowledges that use of this equipment would be particularly beneficial given the proximity of the residential area (p. 3-89).

> *Recommendation:* Strengthen the air quality BMP AQ-4 to ensure it is prioritized for the air pollution sources affecting Hospital Point housing and identify the implementation mechanism in the FEIS. We recommend this be included in all construction contracts and a responsible party identified. Prior to construction, notify Hospital Point residents to expect poorer air quality especially during the first 2 years of construction. Consider providing recommendations for avoiding exposures, such as keeping windows closed, avoiding unnecessary outdoor exposures, etc.

Greenhouse Gases and Carbon

The DEIS calculates the total greenhouse gases that will be generated during the construction phase at 116,223 tons for Stage 1 and states that there would be fewer emissions under Stage 2 but does not quantify them. It further states that this increase over the 65-month Stage 1 construction period for Dry Dock 5 would not "alter Hawaii's goal of meeting and maintaining its GHG reduction goals" (p. 3-394). This conclusion is not explained in the DEIS.

The project would remove over 150 acres of Kiawe Forest/Shrubland on Waipio Peninsula for construction laydown and parking but does not consider the loss of carbon sequestration that this and other vegetation to be cleared provides. See also our comment under Terrestrial Biological Resources.

> *Recommendation:* In the FEIS, fully disclose expected greenhouse gas emissions for all project phases and explain how it was determined that the project's GHG emissions would not hinder achievement of Hawaii's GHG reduction goals. Estimate the loss of carbon sequestration from removing 158 acres of Kiawe Forest/Shrubland on Waipio and Pearl City Peninsula and the time needed for the disturbed area to revegetate to the degree that it would provide the same or similar level of carbon sequestration. See our recommendations under terrestrial biological resources.

Renewable Energy and Heat Impacts

We appreciate that the DEIS includes a statement in the BMPs that, where feasible, the Navy will support and/or implement the use of clean renewable energy resources to meet additional power requirements such as installing photovoltaics on new buildings and existing facilities (p. 2-89). Such project features are important and should be identified in the project description for Phase 2. Achieving the Nation's greenhouse gas reduction goals depends on leveraging all such opportunities. Including renewable energy in the project design would also help the State's goal under the Hawaii Clean Energy Initiative of achieving 100 percent renewable energy power generation for Hawaii by 2045 (p. 3-102).

As we previously commented, installing photovoltaics on carports over parking lots are especially advantageous since they also reduce evaporative emissions from internal-combustion vehicles and minimize heat impacts to drivers.[8] Heat is a serious issue that could impact the military workforce going forward. It is important to consider methods to reduce this health impact during the design phase of the project, including the benefit that the covered dry dock alternatives would provide. Since 1950, temperatures across the Hawaiian Islands have risen by about 2°F, with a sharp increase in warming over the last decade. The number of hot days increased dramatically during the 2015–2020 period, with a multiyear average more than double the long-term average.[9]

> *Recommendation:* Indicate the likelihood that photovoltaics would be installed on new buildings and existing facilities as identified in the BMPs.[10] If likely, add these renewable energy components to the project description in Chapter 2. We recommend photovoltaics on carports over parking lots to address heat impacts and to reduce greenhouse gas and pollutant emissions. Consider the benefit of a covered dry dock alternative to reduce impacts to worker health.

Climate Change Adaptation and Resilience

We appreciate that the Navy is designing the dry dock to achieve a coping elevation for resilience to sea level rise;[11] however, the project designs may not fully consider other climate change effects, specifically increases in stormwater from extreme precipitation events. Future precipitation is variable and difficult to predict for Hawaii; according to the National Oceanic and Atmospheric Administration, annual rainfall has decreased throughout the island chain, particularly during recent years in the wet season, and regionally, extreme precipitation events have become less frequent for O'ahu.[12] However, the State of Hawaii notes that the number of floods per year has increased sharply since the 1960s and is expected to keep rising, and more El Niño (ENSO) years caused by warming seas will bring more intense periods of drought and heavy tropical storms.[13]

A 2019 Government Accountability Office report indicated that Pearl Harbor Naval Shipyard did not consider extreme weather from climate change in its most recent master plan, including improvements to stormwater drainage after intense flash flooding.[14] The Dry Dock project offers an opportunity to address this deficiency. The DEIS states that "the interaction of potential project related impacts from increased stormwater and potential climate-change related trends would be managed to the extent

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[8] https://www.epa.gov/sites/default/files/2014-06/documents/activitiescompendium.pdf
[9] https://statesummaries.ncics.org/chapter/hi/
[10] The Council on Environmental Quality has advised that the probability of the mitigation measures being implemented must be discussed in an EIS to ensure that environmental effects of a proposed action are fairly assessed (CEQ's 40 Most Asked Questions #19b)
[11] The DEIS states that the coping elevation for Dry Dock 5 is higher than the first two design flood elevations (DFE) calculated, which is more protective than the minimum Unified Facilities Criteria (p. 2-13).
[12] https://statesummaries.ncics.org/chapter/hi/
[13] https://climate.hawaii.gov/hi-facts/rain/
[14] https://www.gao.gov/assets/710/700037.pdf

possible through project-related design to accommodate a 100-year, 24-hour storm event" (p. 3-131). Designing infrastructure to the 100-year storm may not be sufficiently protective to address climate change effects since designs are generally based on historic precipitation data that does not reflect the precipitation events predicted in a changing climate. It is also not clear from the DEIS whether project designs comport with the Federal Flood Risk Management Standard.[15] We also note that FEMA flood hazard maps do not always reflect the best available climate science or include information on current flood hazards (e.g., heavy rainfall that overwhelms existing storm drainage systems).[16]

> *Recommendation:* Indicate in the FEIS whether the stormwater planning infrastructure comports with the Federal Flood Risk Management Standard identified in EO 13690. Identify whether the planning criteria utilizing the 100-yr storm has been updated to address increased stormwater drainage. We recommend upsizing all stormwater drainage structures to anticipate future precipitation extremes and to avoid untreated stormwater overflows.

Terrestrial Biological Resources

As stated above, the DEIS indicates that the over 158 acres of temporary disturbance to vegetation on Waipio Peninsula and Pearl City Peninsula would be "restored by passive restoration, meaning areas would be restored through natural succession after the construction period ceased" (p. 2-24, 2-66). The EPA commented previously that the use of the term "restoration" may be misleading to readers since the Navy plans to leave disturbed sites to vegetate on their own, and the DEIS downplays the impact since the plant species removed are nonnative. We agree that native species are more valuable as habitat; however, less than half of the landscape on the Hawaiian Islands is dominated by native plants.[17] The primary trees in the Kaiwe Forest were introduced to Hawaii in the early 1800's and while nonnative, the Kiawe Forest/Shrubland that the Navy would eliminate has habitat value. The DEIS acknowledges that shorelines and mangrove thickets provide habitat for common shorebird and waterbird species such as sandpipers, plovers, yellowlegs, godwits, ducks and black-crowned night heron (p. 3-205), and that the Hawaiian hoary bat uses both native and non-native habitats and has been observed foraging within many landscapes and is assumed present (p. 3-207). The DEIS states that construction activity could cause long-term impacts to the species that forage, nest, or fly over the area, including State of Hawaii–listed species, Migratory Bird Treaty Act-protected species, and Endangered Species Act-listed species such as Hawaiian waterbirds and seabirds (p. 3-216). In addition, Kiawe forest offers forage for pollinators. These ecosystem services will not be replaced in any reasonable timeframe by leaving graveled parking lots and laydown areas to regrow on their own, bearing on the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity (40 CFR 1502.16(a)(3)). We noted the loss of carbon sequestration from clearing the Kaiwe forest in our Greenhouse Gases and Carbon comment.

> *Recommendations*: Remove or qualify references in the FEIS that refer to leaving denuded areas to regrow on their own as "restorations." Recognize the value of the existing non-native forest for species and pollinators and for sequestering carbon. Explore methods of revegetating with native species to enhance long-term productivity of the lands the Navy is impacting for project construction. There may be volunteer groups or groups of servicemen and women who would

[15] On May 20, 2021, President Biden issued Executive Order (EO) 14030, Climate-Related Financial Risk, reinstating EO 13690, Establishing a Federal Flood Risk Management Standard

[16] A recent GAO Report stated that FEMA's flood risk products do not reflect hazards such as heavy rainfall and the best available climate science – See https://www.gao.gov/products/gao-22-104079

[17]City and County of Honolulu - Climate Change Commission https://static1.squarespace.com/static/5e3885654a153a6ef84e6c9c/t/5ef1277ad4a0d82c8ed6afa5/1592862588461/Climate+Change+Brief.pdf

participate in a restoration project on Waipio and/or Pearl City Peninsula. Identify revegetation as potential mitigation in the FEIS, consistent with 40 CFR 1502.16 (a)(9) and 1505.2(a)(3).

Additional comments

- The project would disturb landside areas contaminated by subsurface fuel plumes and other pollutants during site preparation for new utility interconnects (p. 3-24). The BMPs for this work would reinfiltrate contaminated water and redeposit contaminated soil, albeit with a clean cap (p. 2-86). We recommend revisiting whether this is a "best practice" and promote removal of sources of contamination in advance of full cleanups which may take many years. Please work with Chris Lichens (lichens.christopher@epa.gov) of our Superfund staff regarding the BMPs listed for polychlorinated biphenyl (PCB) contaminated sites referenced in Table 3.2-6.
- The DEIS indicates that the Navy would discharge approximately 500,000 gallons of groundwater per day directly to Pearl Harbor from dewatering the dry dock excavation area, which could contain pollutants, primarily sediment (p. 3-126, 3-134). In addition to sediment, we note that the dewatering water is likely to contain nutrient concentrations above water quality standards and may contain high pH or other contaminants from construction activities. We recommend the FEIS note the potential for discharging contaminated dewatering water from the dry dock excavation area, describe the National Pollutant Discharge Elimination System permit that would be obtained for the daily discharges, and describe the potential treatment that would likely be employed.
- The DEIS states that basin water that accumulates inside of Dry Dock 5 would be collected and directed to a Basin Water Treatment System (BWTS) for treatment and disposal via either the sanitary sewer or to an existing outfall in Pearl Harbor (Table 2.3-10; Figure 3.6-4). The EPA notes that Dry Dock 5 basin water may contain pollutants such as copper, zinc, oils, paint particles, sediment or other contaminants from industrial activities. We recommend the FEIS describe the type of wastewater treatment being considered for the BWTS to demonstrate its effectiveness to remove the pollutants identified.