

# FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

## Waikīkī Beach Improvement and Maintenance Program

*October 2024*



**Prepared for:**

Hawai‘i Department of Land and Natural Resources  
Office of Conservation and Coastal Lands  
1151 Punchbowl Street, Suite 131  
Honolulu, Hawai‘i 96813

**Partnered with:**

Waikīkī Beach Special Improvement District Association  
2250 Kalākaua Ave. Suite 315  
Honolulu, Hawai‘i 96815



**Prepared by:**

Sea Engineering, Inc.  
Makai Research Pier  
41-305 Kalaniana‘ole Hwy  
Waimānalo, Hawai‘i 96795

# **VOLUME III**

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## **Appendix I: Draft EIS Comments and Responses (Part 1)** **Waikīkī Beach Improvement and Maintenance Program**

Prepared By: Sea Engineering, Inc.

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# **APPENDIX I**

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## **Draft EIS Comments and Responses (Part 1)** **Waikīkī Beach Improvement and Maintenance Program**

Prepared By: Sea Engineering, Inc.

## Waikiki

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**From:** Sharon Venegas <sharon.venegas@hawaiiantel.net>  
**Sent:** Thursday, June 17, 2021 7:51 AM  
**To:** Waikiki  
**Subject:** Waikiki beach improvement

I support proposed Waikiki beach improvement!

Sent from my iPhone  
Sharon Venegas

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
RYAN K.P. KANAKA'OLE  
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DEAN D. UYENO  
ACTING DEPUTY DIRECTOR - WATER  
AQUATIC RESOURCES  
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CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Mar 18, 2024

Sharon Venegas  
[sharon.venegas@hawaiiantel.net](mailto:sharon.venegas@hawaiiantel.net)

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Sharon Venegas:

Thank you for your email dated June 17, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** garyk395@hawaiiantel.net  
**Sent:** Thursday, June 17, 2021 9:22 AM  
**To:** Waikiki  
**Subject:** Beach protection, restoration and preventive maintenance

Aloha,

The HSA article of 6-17-21 outlines some of the issues regarding the long-term health of one of our most important natural resources, Waikiki Beach. Its impact on our economy is beyond doubt, but how to maintain it apparently is not.

The proposal to add multiple T-groins, no matter how much the engineering studies may support it, is based on suppositions that bypass the obvious. The groins would permanently and significantly affect the currently unobstructed view from shore of the ocean, which is what locals and visitors alike enjoy, and no amount of technical terms would persuade me otherwise that the groins, by trapping areas of ocean between them, would create pools more likely to have stagnant waters and uncontrolled accumulation of sand in unanticipated ways, but which we would have to accept and live with because the cost of removing the groins would be unpalatable, even though it was palatable build them in the first place. This is not even to consider how the groins would become "attractive nuisances" where the young and knuckleheads would walk (and run) out on and jump from and so on, eventually resulting in a catastrophic death in which the state that built these groins would be held liable for.

My proposal is simple, and it also has a cost, but it is one that is based on common sense, using established technologies, and seeking a reasonable balance between the interests of us (people) and the natural environment. There is no going back to the Garden of Eden...by virtue of our existence and presence on this planet, we have already irreversibly and permanently changed it, but at least now we realize that and are learning how to mitigate our most deleterious effects. But make no mistake about it, we affect it and will continue to affect it, so there is no point in misleading ourselves that we can live without having some impact. Let us just be reasonable about how we balance that impact and our own interests, whether economic (Waikiki Beach as a tourist destination) or environmental / recreational / pleasure (all beaches as places we value and enjoy).

The State has previously had various beach replenishment contracts in Waikiki where sand was collected offshore and redistributed on the shore. These projects have been one-offs and have only occurred after concerns (alarms) were raised about the loss of beach width. These projects have had various degrees of success, but the continued use of these contracts seem to indicate that they provide an acceptable short-term solution.

The question is, why does this approach need to be looked at as a short-term solution? Why not instead recognize that this is a reasonable means to restore and maintain this most precious natural resource, and stop messing with man-made groins or breakwaters that intrude upon the natural landform?

This solution proposes that the State (with City financial support) should establish that the DLNR should make beach protection, restoration and preventive maintenance a part of its integral mission, and that the State should invest in either building the capacity in-house (offshore sand mining, pumps, pipes, land forming equipment, etc.) or have a permanent budget to contract this work on a continuing basis. While we are responsible to protect the environment and nature, neither should we exist as if we are unable to react to it when our own interests are affected.

All stakeholders interests would have to be weighed when this process becomes a part of the shared interest of beach protection, restoration and preventive maintenance, including the landowners (including hotels), as well as the surfing and fishing communities. If the sand replenishment efforts become more

routine and scheduled, there will likely be less impact on surf breaks and wave shapes, as well as fishing spots.

Over time, this process can and should be applied to other coastal areas. As an example, Windward Oahu (from Kaaawa to Hauula) has occasional but repeated instances in which high surf damages Kamehameha Highway. There is not much support for building higher breakwaters or walls that would obstruct the ocean view but restoring or widening beaches in these areas would provide a wider buffer between the waves and the roadway, while also providing more beach area for recreation.

We all treasure the `aina and endeavor to respect and protect it but need to be reasonable when weighing all the ways in which we do so.

Aloha,

Gary Kawakami

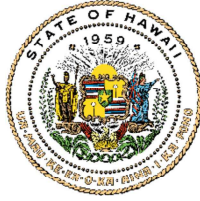
Kaneohe, Hawaii (and a small Waikiki property owner)

cell: (808) 284-0123



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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Gary Kawakami  
[garyk395@hawaiiantel.net](mailto:garyk395@hawaiiantel.net)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Gary Kawakami:

Thank you for your email dated June 17, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: The groins would permanently and significantly affect the currently unobstructed view from shore of the ocean.

Response: We acknowledge that the proposed groins will alter existing viewplanes toward and along the shoreline. However, we feel that the proposed actions will improve the overall aesthetics of the area. The shoreline in the Halekūlani beach sector, where T-head groins and beach fill are being proposed, has minimal dry beach area and is currently armored by seawalls that are in various states of disrepair. As a result, recreational opportunities and shoreline access are severely limited in this area. The only lateral shoreline access is along the narrow walkways on top of the seawalls, which are dangerous to traverse, particularly during high tide and high surf events, and are often closed to mitigate risks to public health and safety. The only perpendicular shoreline access in this area is a public beach right-of-way that is managed by the City and County of Honolulu. The beach right-of-way was recently damaged by wave-induced erosion and is currently closed to mitigate risks to public health and safety. The Halekūlani beach sector also bifurcates viewplanes between the east and west portions of Waikīkī Beach. The proposed action will increase dry beach area, which will improve lateral shoreline access. The proposed groins are also consistent with the existing aesthetics of the Halekūlani beach sector, which is currently bounded by groins at both the east end (Royal Hawaiian Groin) and west end (Fort DeRussy outfall/groin).

For information about potential impacts to viewplanes, please see the following section of the FPEIS:

- Section 9.3.1

Comment: The groins, by trapping areas of ocean between them, would create pools more likely to have stagnant waters and uncontrolled accumulation of sand in unanticipated ways.

Response: T-head groins are designed to decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand. The groin layout and head angles are oriented such that the gap openings are approximately parallel with the average prevailing wave crest. The groin heads are aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The gaps between the groin heads facilitate the free exchange of water between the groin cells and the open ocean. T-head groins help to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. There is no natural history of sand accretion or natural mechanism to facilitate sand accretion in the Halekūlani beach sector, as evidenced by the lack of sandy beaches in this area. Therefore, we do not anticipate any uncontrolled accumulation of sand.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

Comment: The groins would become “attractive nuisances” where the young and knuckleheads would walk (and run) out on and jump from and so on, eventually resulting in a catastrophic death in which the state that built these groins would be held liable for.

Response: Waikīkī is a predominantly engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. The proposed groins are similar in design to other existing groins in Waikīkī, such as the Royal Hawaiian Groin. While we cannot prevent individuals from traversing the proposed groins, we feel that adding new structures that are similar to structures that already exist in Waikīkī will not substantially increase any risks to public health and safety that may already exist in this area.

For information about potential impacts to public health and safety, please see the following section of the FPEIS:

- Section 9.8.3

Comment: The State has previously had various beach replenishment contracts in Waikiki where sand was collected offshore and redistributed on the shore. These projects have been one-offs and have only occurred after concerns (alarms) were raised about the loss of beach width. These projects have had various degrees of success, but the continued use of these contracts seem to indicate that they provide an acceptable short-term solution. The question is, why does this approach need to be looked at as a short-term solution? Why not instead recognize that this is a reasonable means to restore and maintain this most precious natural resource, and stop messing with man-made groins or breakwaters that intrude upon the natural landform?

Response: We agree that past beach restoration efforts, such as the Waikīkī Beach Maintenance I and II projects in 2012 and 2021, respectively, are a reasonable means to restore and maintain Royal Hawaiian Beach. However, due to the existing shoreline configuration and bathymetry in the Halekūlani beach sector, and projected erosion rates with rising sea levels, we anticipate that beach nourishment without stabilizing structures would not be effective in this area and the cumulative impacts and costs associated with periodic renourishment would not be sustainable. The proposed groins and beach fill will produce a stable beach, which will mitigate the need for periodic renourishment.

For information about alternatives to the proposed actions, please see the following section of the FPEIS:

- Section 3.5

Comment: This solution proposes that the State (with City financial support) should establish that the DLNR should make beach protection, restoration and preventive maintenance a part of its integral mission, and that the State should invest in either building the capacity in-house (offshore sand mining, pumps, pipes, land forming equipment, etc.) or have a permanent budget to contract this work on a continuing basis. While we are responsible to protect the environment and nature, neither should we exist as if we are unable to react to it when our own interests are affected.

Response: The DLNR is responsible for overseeing beaches and submerged lands to the seaward extent of the State's jurisdiction. Beach protection and restoration are essential components of our mission to protect and preserve lands within the Conservation District. The DLNR Office of Conservation and Coastal Lands manages a Beach Restoration Fund, which is composed of revenues from coastal land use applications, regulatory enforcement actions, and the State's Transient Accommodation Tax (TAT). In Waikīkī, we are fortunate to be able to engage in a joint-public private partnership with the Waikīkī Special Improvement District Association (WBSIDA), which was established by City ordinance in 2015. The WBSIDA established a Beach Special Improvement Tax that generates tax revenues from commercial property owners in Waikīkī. All tax revenues are dedicated to support beach preservation and restoration projects in Waikīkī. This tax structure will ensure that private funding is available to support future beach improvement and maintenance projects in Waikīkī. In addition to establishing a stable revenue stream to support future projects, we are constantly seeking to identify and evaluate potential alternatives for beach improvement. For example, if new dredging methods become available, or alternative sand sources are determined to be feasible, we may consider modifying some of the proposed actions in the future. We are also evaluating potential options to stockpile sand to support routine maintenance activities or emergency response in the event of a hurricane or tsunami.

For information about project funding, please see the following section of the FPEIS:

- Section 2.4

Comment: All stakeholders interests would have to be weighed when this process becomes a part of the shared interest of beach protection, restoration, and preventive maintenance, including the landowners (including hotels), as well as the surfing and fishing communities. If the sand replenishment efforts become more routine and scheduled, there will likely be less impact on surf breaks and wave shapes, as well as fishing spots.

Response: We agree that any beach improvement or maintenance actions must be designed to accommodate the broadest possible range of stakeholder interests in Waikīkī. We relied heavily on feedback and direction from the Waikīkī Beach Community Advisory Committee (WBCAC) to identify issues, needs, priorities, and design criteria for each beach sector. The WBCAC serves as a representative body to communicate the diversity of perspectives and priorities in the broader Waikīkī community, provide guidance and feedback for beach management and planning activities in Waikīkī, and ensure that future beach management projects address the issues and concerns of the Waikīkī community and local stakeholders. The WBCAC is composed of various stakeholders representing business (29%), government (29%), hotels and resorts (11%), nonprofit organizations (14%), and science and engineering (17%). WBCAC members were primarily selected based on their knowledge and understanding of the history, diversity, and broad range of stakeholder interests represented in Waikīkī. If you have specific suggestions or would like to nominate certain individuals to participate in the WBCAC, we suggest that you contact the Waikīkī Beach Special Improvement District Association, which oversees the committee and its membership.

For information about stakeholders and community engagement, please see the following section of the FPEIS:

- Section 19

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** John Shockley <shockleyjr@gmail.com>  
**Sent:** Thursday, June 17, 2021 1:04 PM  
**To:** Waikiki  
**Cc:** Rita Shockley; Audrey Malama Moana Lee; Doorae (Surfrider O'ahu) Shin; Stuart Coleman; Ronald (FOK) Iwami; Linda Wong; Alethea Rebman; Annie (KPPS) Moriyasu; Tommy (City Council) Waters  
**Subject:** LIVE NOTE: Public access to the tops of the Waikiki Beach sea-walls.

**Aloha!**

**Why is the public blockage on the sea-walls in front of the hotels not being addressed by the planners?**

**John & Rita Shockley.** [www.freeaccesscoalition.weebly.com](http://www.freeaccesscoalition.weebly.com)

## Waikiki

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**From:** John Shockley <shockleyjr@gmail.com>  
**Sent:** Thursday, July 22, 2021 5:12 AM  
**To:** Waikiki  
**Cc:** Rita Shockley; Brian Keaulana; Robert Bunky Bakutis; Jon (RHS) Hoag; Linda Legrande; Linda Wong; Tommy (City Council) Waters  
**Subject:** LIVE NOTE: Regarding the Waikiki T-groin beach enhancement plan.

**Aloha!**

**The editorial by Keone Downing in the Hon. Star-Advertiser, 7/22/2021, is an eye-opener and warning of the kind of damage the tourist hotels are doing to Waikiki Beach. The tax-payers are asked to fund projects that only benefit the tourist business, often at the expense of the local tax-payers themselves! This general plan to save sand in front of hotels has large implications for the environment including wild life, reef destruction, and surf patterns. The DLNR needs to heed environmental concerns that the artificial rock structures will damage the shoreline at the expense of short-term gains for the hotels.**

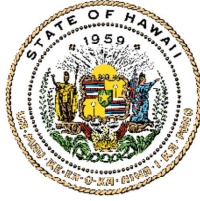
**We understand the power of money and the influence it has on government. There is a higher calling that government needs to consider before plowing ahead with projects like the T-groins. We hope you will act responsibly for all the people of Hawaii—not just the special Waikiki hotel interests.**

**Mahalo for your time and hopefully for your Kokua!**

**John & Rita Shockley. Coordinators: Free Access Coalition.**  
[www.freeaccesscoalition.weebly.com](http://www.freeaccesscoalition.weebly.com)

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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John and Rita Shockley  
[shockleyjr@gmail.com](mailto:shockleyjr@gmail.com)

Mar 18, 2024

**SUBJECT:** Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear John and Rita Shockley:

Thank you for your emails dated June 17, 2021, and July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your emails you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: Why is the public blockage on the sea-walls in front of the hotels not being addressed by the planners?

Response: The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The proposed action would provide a natural buffer between the ocean and the seawalls, which would improve lateral access along the shoreline.

Comment: The editorial by Keone Downing in the Hon. Star-Advertiser, 7/22/2021, is an eye-opener and warning of the kind of damage the tourist hotels are doing to Waikiki Beach. The tax-payers are asked to fund projects that only benefit the tourist business, often at the expense of the local tax-payers themselves!

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both

visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing



the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Section 2.4
- Section 16.3.1

Comment: This general plan to save sand in front of hotels has large implications for the environment including wild life, reef destruction, and surf patterns. The DLNR needs to heed environmental concerns that the artificial rock structures will damage the shoreline at the expense of short-term gains for the hotels. We understand the power of money and the influence it has on government. There is a higher calling that government needs to consider before plowing ahead with projects like the T-groins. We hope you will act responsibly for all the people of Hawaii—not just the special Waikiki hotel interests.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubble mound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10
- Section 8.11.1
- Section 8.12.1
- Section 10.2
- Appendix C

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was

used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Heidi Better <heidibetter@yahoo.com>  
**Sent:** Thursday, June 17, 2021 2:01 PM  
**To:** Waikiki  
**Subject:** Comment

Aloha

My opinion is to not do this project at all. So many promises always made by all developers. And it's always for tourist benefit. They swear it won't affect surf or sealife.

No improvements made for local

People. Like more bike paths in Waikiki. Close down lanes of kuhio or kalakaua for bikes and walking. FIX THE NATATORIUM and use it for something fun for the people here. I didn't miss the tourists and now that they're back I hate going to Waikiki. It's awful.

I totally object to making all these 5 groins. It's ugly and they too will crumble and be an eyesore and not maintained.

Why not work on making many outdoor umbrella shaded places to hang out and enjoy a meal or drinks? So many other things needed and not just for tourists.

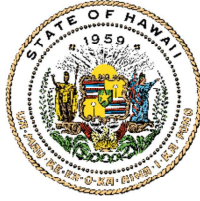
Totally object to this project entirely. Save the waves for the surfers. Stop saying it won't affect things. If that were true it would affect the beach sand either. You can't have it both ways.

Thanks for listening.

Aloha via iPhone :)

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Heidi Better  
[heidibetter@yahoo.com](mailto:heidibetter@yahoo.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Heidi Better:

Thank you for your email dated June 17, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

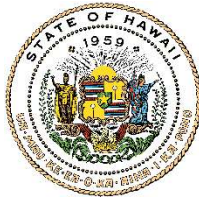
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Heidi Better  
[heidibetter@yahoo.com](mailto:heidibetter@yahoo.com)

Sep 26, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Ms. Better:

Thank you for your email dated June 17, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, which incorrectly stated that you support the proposed program.

The DLNR is pleased to provide this letter to notify you that we understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Susanne Lenz <lenzchicago@gmail.com>  
**Sent:** Sunday, June 20, 2021 7:43 AM  
**To:** Waikiki; Brandon Barbour  
**Subject:** A comment..and a question for the Waikiki Beach Improvement folks...

Hi..

1. In the Advertiser's photo the 'groins' are not as far as Ft DeRussy...wondering about that..seems to be just in front of the BIG hotels?

2. Is it possible to 'make' fake reefs..like sinking a ship to make a reef/s..I know that is done elsewhere to slow down the ocean's damage..and improve ocean life?

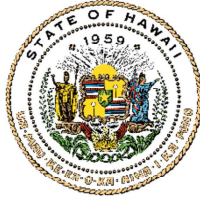
3. Would it be possible..or better to make more of a 'breakwater'...like at Magic Island beach..and at the end of Waikiki Beach...with holes for catamarans get thru for their 'tourist' rides?...or even make a pier somewhere for access to to the catamaran rides..like at Hilton HI Village?

**4. Just MANY UNITS..let's break this down into apartments/condos and hotel units/hotels by name  
Are paying into the TWO beach/street improvement projects. I know that we are paying into two. Funds: .one a clean up project..which does not seem to include street sweeping..and the beach improvement. I have wondered about this for a long time..I want to SEE a number of UNITS paying into this, please...We have a unit in the Ilikai..this is a building with 1000 units...times the amount included on our property tax bills.**

Jim and Susan Lenz  
1777 Ala Moana Blvd/Ilikai  
Honolulu 96815

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
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STATE PARKS

Susanne Lenz  
[lenzchicago@gmail.com](mailto:lenzchicago@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Susanne Lenz:

Thank you for your email dated June 20, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: In the Advertiser's photo the 'groins' are not as far as Ft DeRussy...wondering about that..seems to be just in front of the BIG hotels? Is it possible to 'make' fake reefs..like sinking a ship to make a reef/s. I know that is done elsewhere to slow down the ocean's damage and improve ocean life? Would it be possible..or better to make more of a 'breakwater'...like at Magic Island beach and at the end of Waikiki Beach...with holes for catamarans get thru for their 'tourist' rides?...or even make a pier somewhere for access to to the catamaran rides..like at Hilton HI Village?

Response: Waikīkī is a predominantly engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920, seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. The proposed beach stabilizing structures are consistent with the existing configuration of the Waikīkī shoreline and will not substantially alter the existing character of Waikīkī. Furthermore, we feel that the potential impacts of the proposed actions far outweigh the environmental, social, cultural, recreational, aesthetic, and economic impacts associated with beach loss in Waikīkī.

As part of the initial concept review and community engagement process, several alternatives were identified as being outside the realm of practicality and, therefore, were not developed and assessed as viable alternatives to achieve the objectives of the proposed program. These alternatives, though based on accepted engineering designs that have examples in Hawai'i or elsewhere, were identified during the early stages of



concept development as being unsuited to the current environment. Early concepts were evaluated based on shoreline dynamics, marine and coastal ecosystem characteristics, recreational and cultural uses, constructability, and Federal, State, and City and County of Honolulu regulatory requirements. The following alternatives were considered during the early conceptual planning phase:

#### Offshore Breakwaters

Offshore breakwaters are shore-parallel structures constructed for the purpose of protecting the shoreline in the lee of the structure from wave attack. Offshore breakwaters can transform the incident wave crest and reduce wave energy; however, they are best used as components of T-head groin systems to form stable beach cells. Offshore breakwaters do not provide shoreline stabilization as effectively as T-head groins. A single offshore breakwater is proposed for the Kuhio sector, where it would be in a gap between two L-head groins. This is a unique response to a condition where there is not enough room inshore for a single headland-bay beach cell. Breakwaters would impact viewplanes and cover benthic habitat. The primary disadvantage of offshore breakwaters in Waikīkī is that they would inevitably interfere with navigation and ocean recreation and could potentially alter or eliminate surfing sites, which have tremendous cultural and recreational value. The proposed segmented breakwater in the Kūhiō beach sector will replace the existing breakwater and would therefore not result in any impacts that have not already occurred due to the presence of the existing breakwater.

#### Submerged Breakwaters

Submerged breakwaters and artificial surf breaks can be designed to cause the waves to break and lose energy before reaching shore. These structures are low profile and below the water surface, so there is no visual impact. The structures, however, cannot adapt to changing wave conditions and may cause increased erosion if the waves shoal but do not break. To be effective, artificial reefs for shore protection have to cause wave breaking for a long distance toward shore and prevent the waves from reforming. For this to occur, a submerged breakwater or artificial reef would need to cover a significant amount of seafloor, thereby increasing its structural footprint. An added disadvantage of submerged breakwaters is that their effectiveness is highly dependent on water levels. Submerged breakwaters would need to be adapted periodically to account for rising sea levels. Similar to offshore breakwaters, submerged breakwaters would inevitably interfere with navigation and ocean recreation and could permanently alter or eliminate existing surfing sites, which have tremendous cultural and recreational value. As a result, submerged breakwaters are not considered a viable alternative for Waikīkī.

#### Living Shorelines

The term *living shoreline* refers to natural methods to combat erosion that typically involve planting of native vegetation. These solutions are best suited for low wave energy environments and are therefore not considered a suitable solution for Waikīkī. Furthermore, Waikīkī is a heavily used area and there is little to no existing vegetation makai (seaward) of the shoreline. Almost the entire length of the Waikiki shoreline is armored by seawalls, so any vegetation would need to be planted directly on the beaches, which are already narrow and subject to erosion and flooding. Promoting

vegetation growth makai (seaward) of the shoreline would reduce recreational dry beach area and inhibit lateral shoreline access, which is already limited in many areas of Waikīkī. The DLNR is the lead agency with authority for maintaining lateral public access along Hawaii's shorelines and within *beach transit corridors*. Beach transit corridors are defined as the areas extending seaward of the shoreline and these areas are considered public property (Chapters 205A and Chapter 115, Hawai'i Revised Statutes). Promoting vegetation growth over the dry beach area in Waikīkī would contradict the objectives of the program and existing State statutes.

### Sand Savers

Sand Savers (formerly referred to as Sand Grabbers) are shore-parallel structures that are intended to dissipate wave energy to facilitate sand accretion. Similar structures have been installed at Kualoa Beach Park and Kailua Beach Park; however, both installations proved to be ineffective and there is no indication that they would facilitate sand accretion in Waikīkī. Furthermore, these structures are typically installed lower on the beach profile where they are subject to wave action. Installation in Waikīkī would disrupt access to and along the shoreline and may result in risk to public health, safety, and welfare.

For additional information regarding potential alternatives to the proposed actions, please see the following section of the FPEIS:

- Section 3.5

Comment: Just MANY UNITS..let's break this down into apartments/condos and hotel units/hotels by name are paying into the TWO beach/street improvement projects. I know that we are paying into two. Funds: .one a clean up project..which does not seem to include street sweeping..and the beach improvement. I have wondered about this for a long time..I want to SEE a number of UNITS paying into this, please...We have a unit in the Ilikai..this is a building with 1000 units...times the amount included on our property tax bills.

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs

and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Sections 2.4 and 16.3.1

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Kau'i Baumhofer Merritt <kau.baumhofer@gmail.com>  
**Sent:** Monday, June 21, 2021 3:54 PM  
**To:** Waikiki  
**Subject:** 2021-06-08-OA-DEIS-Waikiki-Beach-Improvement-and-Maintenance-Program  
Commentary

Aloha,

I would like to submit commentary on the Waikiki Beach Improvement and Maintenance program EIS. Although I am an assistant professor of indigenous health sciences at the University of Hawai'i-West O'ahu I am submitting these comments purely from a personal standpoint as a Native Hawaiian and an expert in social epidemiology with a specialization in Native Hawaiian health and not in my professional capacity.

My primary concerns regarding the plans to improve and maintain Waikiki beach are:

- 1) protection of surf sites in Waikiki and,
- 2) deposition of sand on reefs, which could alter wave patterns, limu growth, and wildlife habitat.

Protection and preservation of our world-famous surfing sites at Waikiki should be our top priority. Surfing, specifically at Waikiki, is a significant part of our cultural heritage and is an important site for Native Hawaiians to engage in culturally-based physical activity. Personally, I spent my childhood in the 1980s and 1990s learning how to surf and identify limu from my aunt at Baby Canoes and the Halekulani Channel, paddling in the Waikiki outrigger canoe races in front of the Moana, and lounging on the sand near my best friend's family's beach stand on Queen's beach. My personal well-being as a Native Hawaiian woman has been significantly and positively impacted by my ability to participate in sports, learn about my cultural heritage from my family, and nurture my sense of spirituality through connection with the ocean at Waikiki.

Secondly, I am concerned about sand deposition and changes to the wildlife habitat in the off-shore reefs. Limu is an important part of a healthy Native Hawaiian diet and the turtles, fish, and sharks that inhabit Waikiki's off-shore waters are integral to the Native Hawaiian culture.

Ultimately, I would prefer the State of Hawai'i implement a managed retreat program to allow the Waikiki shoreline to evolve naturally as sea levels rise, but as stated in the EIS this is a long-term goal. Since I do not have marine engineering expertise I will refrain from offering suggestions on which engineering approach to take in this project and would like the focus of this submission to be on prioritization of protecting our surf sites and marine habitat for the benefit of Native Hawaiians and Hawai'i residents rather than prioritizing tourism.

Me ka ha'aha'a a me ka oi'a i'o - with humility and truth,  
Dr. Kau'i Merritt

--

N. Kau'i Baumhofer Merritt, ScD, MPH, MA  
Assistant Professor of Indigenous Health Sciences  
Division of Math, Natural, and Health Sciences

University of Hawaii West Oahu

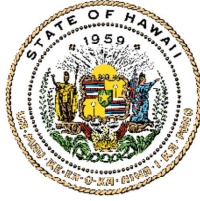
(808) 689-2385

[linkedin.com/in/kauibaumhofer/](https://www.linkedin.com/in/kauibaumhofer/)

(pronunciation: <https://nmdrp.me/kauimerritt>)

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
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STATE PARKS

N. Kau'i Baumhofer Merritt  
[kauibaumhofer@gmail.com](mailto:kauibaumhofer@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear N. Kau'i Baumhofer Merritt:

Thank you for your email dated June 21, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: Protection and preservation of our world-famous surfing sites at Waikiki should be our top priority. Surfing, specifically at Waikiki, is a significant part of our cultural heritage and is an important site for Native Hawaiians to engage in culturally-based physical activity. Personally, I spent my childhood in the 1980s and 1990s learning how to surf and identify limu from my aunt at Baby Canoes and the Halekūlani Channel, paddling in the Waikiki outrigger canoe races in front of the Moana, and lounging on the sand near my best friend's family's beach stand on Queen's beach. My personal well-being as a Native Hawaiian woman has been significantly and positively impacted by my ability to participate in sports, learn about my cultural heritage from my family, and nurture my sense of spirituality through connection with the ocean at Waikiki.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge

analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Comment: Secondly, I am concerned about sand deposition and changes to the wildlife habitat in the off-shore reefs. Limu is an important part of a healthy Native Hawaiian diet and the turtles, fish, and sharks that inhabit Waikiki's off-shore waters are integral to the Native Hawaiian culture.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section



8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

**Comment:** Ultimately, I would prefer the State of Hawai'i implement a managed retreat program to allow the Waikiki shoreline to evolve naturally as sea levels rise, but as stated in the EIS this is a long-term goal. Since I do not have marine engineering expertise I will refrain from offering suggestions on which engineering approach to take in this project and would like the focus of this submission to be on prioritization of protecting our surf sites and marine habitat for the benefit of Native Hawaiians and Hawai'i residents rather than prioritizing tourism.

**Response:** A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and

beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai'i from fulfilling its responsibility for overseeing beaches and submerged lands out to the seaward extent of the State's jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

Many beach management actions are considered mid-term solutions that are intended to manage and preserve coastal resources while other potential long-term solutions are investigated and implemented. While beach management strategies may not address the entire spectrum of issues and needs that are related to sea level rise adaptation, they provide a means to: manage and mitigate the impacts of erosion; protect, conserve, and enhance our beaches; maintain the economic viability of visitor destinations; and buy much-needed time to determine what managed retreat may consist of in Waikīkī and how it could potentially be accomplished. At a minimum, this will require collaboration with a much broader spectrum of public and private stakeholders and community members, as well as a level of capital investment that far exceeds that which is required to implement the proposed program.

Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, it is clear that sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area makai (seaward) of the *certified shoreline*, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222,

Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

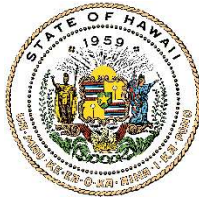
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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N. Kau'i Baumhofer Merritt  
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Sep 26, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Ms. Baumhofer Merritt:

Thank you for your email dated June 21, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024. The DLNR is pleased to provide the following additional responses to your comments.

Comment: Protection and preservation of our world-famous surfing sites at Waikiki should be our top priority. Surfing, specifically at Waikiki, is a significant part of our cultural heritage and is an important site for Native Hawaiians to engage in culturally-based physical activity. Personally, I spent my childhood in the 1980s and 1990s learning how to surf and identify limu from my aunt at Baby Canoes and the Halekulani Channel, paddling in the Waikiki outrigger canoe races in front of the Moana, and lounging on the sand near my best friend's family's beach stand on Queen's beach. My personal well-being as a Native Hawaiian woman has been significantly and positively impacted by my ability to participate in sports, learn about my cultural heritage from my family, and nurture my sense of spirituality through connection with the ocean at Waikiki.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekulani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekulani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge

analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

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Comment: Secondly, I am concerned about sand deposition and changes to the wildlife habitat in the off-shore reefs. Limu is an important part of a healthy Native Hawaiian diet and the turtles, fish, and sharks that inhabit Waikiki's off-shore waters are integral to the Native Hawaiian culture.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Many areas of Waikīkī were once known as good places to gather edible limu, but little if any edible limu remains in Waikīkī today. The recovered sand will be placed on the existing beaches and submerged areas that consist of relatively barren reef flats, where limu does not grow. Hence, no significant adverse effects on limu are anticipated.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat, including limu, and protected species. Ecological services of reef flat habitat, including limu, will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and

Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat and protected species (see Section 8.11.1 and Appendix C of the FPEIS). A detailed Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective cleaning protocols for equipment, materials, and personnel to minimize the risk of spreading invasive species. A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat and protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and

- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

Response: We acknowledge that sand recovery, transport, and placement operations have the potential to cause sedimentation and turbidity. The offshore sand sources proposed for use in Waikīkī contain less than 6% fines, which complies with the State of Hawai'i guidelines for beach nourishment projects. Appropriate methods for dewatering and removal of fines to minimize turbidity will be established during the final design and permitting process.

For information regarding sand characteristics and quality, please see the following sections of the FPEIS:

- Section 3.6
- Appendix B

Sea Engineering, Inc. conducted analytical modeling to evaluate the potential impacts of sedimentation on benthic habitat resulting from clamshell dredging for the *Ala Moana* and *Hilton* offshore sand deposits (see Figure 1 and Figure 2 later in this letter). The modeling results indicate that there would be no anticipated impacts to benthic habitat in the vicinity of the sand recovery areas.

For information about the modeling results and potential impacts to benthic habitat, please see the following sections of the FPEIS:

- Section 8.10.1
- Appendix C

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information regarding water quality and turbidity, please see the following section of the FPEIS:

Comment: Ultimately, I would prefer the State of Hawai'i implement a managed retreat program to allow the Waikiki shoreline to evolve naturally as sea levels rise, but as stated in the EIS this is a long-term goal. Since I do not have marine engineering expertise I will refrain from offering suggestions on which engineering approach to take in this project and would like the focus of this submission to be on prioritization of protecting our surf sites and marine habitat for the benefit of Native Hawaiians and Hawai'i residents rather than prioritizing tourism.

Response: A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai'i from fulfilling its responsibility for overseeing beaches and submerged lands out to the seaward extent of the State's jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

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Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, it is clear that sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area makai (seaward) of the *certified shoreline*, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Nick McGreivy <nickmcgreivy@gmail.com>  
**Sent:** Tuesday, June 22, 2021 9:06 AM  
**To:** Waikiki  
**Subject:** 2021 Waikiki Beach Improvement and Maintenance Program

Hi,

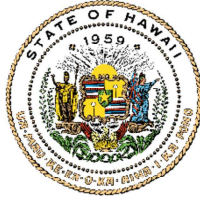
I'm hoping to submit written feedback on the Waikiki beach improvement and maintenance program. I am a resident of Waikiki, a daily surfer, and a frequent user of the beach.

I think [this](#) program would be great! This would significantly enhance the experience of both residents and tourists who come to waikiki, create more beach space for all of us, and improve that area of Waikiki. Great work!

Thanks,  
Nick

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Nick McGreivy  
[nickmcgreivy@gmail.com](mailto:nickmcgreivy@gmail.com)

Mar 18, 2024

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We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Robert Soberano <808got2golf@gmail.com>  
**Sent:** Tuesday, June 22, 2021 9:38 AM  
**To:** Waikiki  
**Subject:** Waikiki Beach Improvement Plan

I have not read the full document available at the Kapahulu library and online. I am basing my comments on the article that appeared in the Star-Advertiser, "Open for Review", June 17, 2021.

The article did not mention if there are any island nations that have a similar T-Groin configuration to help keep sand in place. Island nations would be a better comparison than continental beaches. Sand movement, tides and currents move differently.

We need to do something to keep the beaches and sand in Waikiki:

>>It's the engine that drives our tourism industry.

>>Waikiki generates millions of dollars in revenue and taxes for Hawaii.

>>If there's no beach in Waikiki, tourists will go somewhere else.

>>With global warming and sea levels rising, we need to save shorelines. Not just in Waikiki, but throughout Hawaii.

I have read the dissenting concerns:

>>Sand dredging and filling might affect the waves.

>>Generate reflecting waves that will travel seaward.

>>"the loss of Hawaiian sense of place and the feel of old Waikiki."

>>Possible disturbances of ancestral burials, fishing and limu gathering..

Not to sound dismissive of these concerns, but do these people have another idea to replace the millions of lost revenue if these T-Groins are not built and we lose Waikiki beach? Or the millions of dollars to repair Kalakaua Avenue or shoreline hotels with rising sea levels coming in the next 30 years? It's one thing to dissent, but if you don't have a counter plan, it comes across as whining and complaining.

Hawaii is terrible when it comes to planning ahead. The rail is a classic example. The fixed guideway system should have been built in the 1990's. It would have cost about 1.2 billion back then instead of the projected 12 billion now. Aloha Stadium is another example. Believing that rust will form a protective "patina" on the steel to prevent corrosion was just idiotic. Now there's no large capacity stadium for UH and high schools to play football games or to hold other events. We're making a similar mistake with the new stadium/business/residential area.

If these T-Groins are not built ASAP, Hawaii could be cutting its own throat. We can't afford to lose Waikiki beach. Or if we keep delaying it, it's going to cost more. We are not in "desperate times require desperate measures" mode. However, we need to use some FORESIGHT. We've seen what happens when we don't look 20, 30 or 40 years into the future.

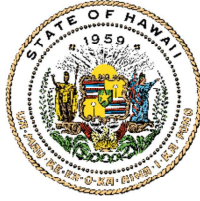
Sincerely,

Robert K Soberano  
Mo'ili'ili, Hawaii.

>>

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Robert Soberano  
[808got2golf@gmail.com](mailto:808got2golf@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Robert Soberano:

Thank you for your email dated June 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Jeff Merz <jeffmerz@rocketmail.com>  
**Sent:** Wednesday, June 23, 2021 11:16 AM  
**To:** Sam J. Lemmo; David Smith; Waikiki; Rick Egged; Robert Finley  
**Subject:** Waikiki NB comments on the draft PEIS - Waikiki Beach Improvement  
**Attachments:** Waikiki NB-Beach EIS.pdf

Waikiki Beach Improvement Team,

Enclosed please find the Waikiki Neighborhood Board comments on the draft PEIS. Our comments are limited as most Board concerns from pre-consultation have been adequately addressed in the current document.

As always, thank you for your public engagement during the EIS process and commitment to improving Waikiki Beach.

Jeff Merz Waikiki Neighborhood Board on behalf of:  
Board Chair Robert Finley.



**WAIKIKI NEIGHBORHOOD BOARD NO. 09**

c/o NEIGHBORHOOD COMMISSION OFFICE •  
TEL: (808) 768-3710 INTERNET: www1.honolulu.gov/nco

June 23, 2021

Department of Land and Natural Resources  
Office of Conservation and Coastal Lands  
Attn: Sam Lemmo  
1151 Punchbowl Street, Room 131  
Honolulu, HI 96813

Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

David A. Smith, PhD, PE  
Sea Engineering, Inc  
41-305 Kalaniana'ole Highway  
Waimanalo, HI 96795

**Re: Draft Programmatic Environmental Impact Statement - Waikiki Beach Improvement and Maintenance Program**

Mahalo for your letter dated June 4, 2021, in response to our comments submitted on the EISPN on January 22, 2021. As expressed through the years, the Waikiki Neighborhood Board appreciates the need for these types of improvement projects in our community and we support this proposed program and actions as mitigation measures outlined in the Draft EIS.

While our initial comments from the EISPN have been adequately addressed in this Draft Environmental Impact Statement, we have some additional comments to incorporate into the Final Programmatic EIS.

**Section 16.2.1**

Elaborate on the purpose and benefits of the programmatic approach to this EIS, the difference between a "program" and a "project" and whether additional follow-on environmental documents will need to be prepared under provisions of HRS 343 and HAR 11-200.1, for each project's implementation.

**Chapter 16**

This discussion of the compliance with plans and policies and specifically the recently approved Oahu Resilience Strategy in Section 16.3.3, is thorough and informative.

**General Comment**

As noted previously, the Neighborhood Board requests that the State, and specifically DLNR, coordinate with the U.S. Army Corps of Engineers for joint opportunities, coordinated scheduling of projects, and sharing of technical and fiscal resources to most efficiently implement shoreline projects in Waikiki.

Again, thank you for engaging with the Waikiki community on this important project and we look forward to approval of the Final EIS and implementation of the various projects described within.

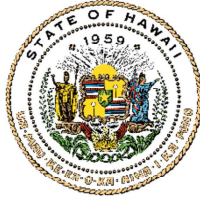
Sincerely,

  
Jeff Merz, AICP, LEED AP  
Waikiki Neighborhood Board  
Development Review



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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Jeff Merz  
[jeffmerz@rocketmail.com](mailto:jeffmerz@rocketmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Jeff Merz:

Thank you for your letter dated June 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: *Section 16.2.1:* Elaborate on the purpose and benefits of the programmatic approach to this EIS, the difference between a “program” and a “project” and whether additional follow-in environmental documents will need to be prepared under the provisions of HRS 343 and HAR 11-200.1, for each project’s implementation.

Response: Pursuant to Chapter 11-200.1-2, HAR the following definitions apply:

“*Project*” means a discrete, planned undertaking that is site and time specific, has a specific goal or purpose, and has potential impact to the environment.

“*Program*” means a series of one or more projects to be carried out concurrently or in phases within a general timeline, that may include multiple sites or geographic areas, and is undertaken for a broad goal and purpose. A program may include: a number of separate projects in a given geographic area which, if considered singly, may have minor impacts, but if considered together, may have significant impacts; separate projects having generic or common impacts; an entire plan having wide application or restricting the range of future alternative policies or actions, including new significant changes to existing land use plans, development plans, zoning regulations, or agency comprehensive resource management plans; implementation of multiple projects over a long time frame; or implementation of a single project over a large geographic area.

The Waikīkī Beach Improvement and Maintenance Program is considered a “*program*” because it consists of five (5) individual proposed actions (*projects*) in a given geographic area that are intended to be carried out in phases within a general timeline.



The precise timing for each phase of the Program has yet to be determined and will be largely dependent on the availability of funds to implement the individual projects.

The proposed beach maintenance actions are intended to be conducted on a periodic basis and may be adapted as sea levels continue to rise. The proposed beach improvement actions are designed to be implemented in phases, with the initial phase being designed for approximately 1.5 ft of sea level rise, thus in 25 to 30 years following construction it may be necessary to raise the project elevations. If then raised by several feet, the projects could be effective until about the year 2080, or 50-years post-construction. Sea level rise projections continue to evolve as new and improved sea level and climate change research becomes available. It is also important to recognize that global sea level rise will not stop within these timeframes but will very likely continue for centuries. As a result, there is uncertainty regarding precisely when and the degree to which the designs will need to be adapted. As sea levels continue to rise, additional beach improvement and maintenance actions may be required in the other beach sectors of Waikīkī.

Chapter 11-200.1, HAR does not specify an expiration date for environmental review documents. For the purposes of the proposed Program, we anticipate that it will take 10 years to allow the proposed actions to be implemented sequentially. However, we acknowledge that follow-on studies or additional environmental review may be required under certain circumstances. For example, if any of the proposed actions change substantively in size, scope, intensity, use, location, or timing, among other things, a Supplemental EIS may be required.

For information regarding anticipated project lifespans and project phasing, please see the following sections of the FPEIS:

- Section 3.3
- Section 3.4

Comment: The Neighborhood Board requests that the State, and specifically DLNR, coordinate with the U.S. Army Corps of Engineers for joint opportunities, coordinated scheduling of projects, and sharing of technical and fiscal resources to most efficiently implement shoreline projects in Waikīkī.

Response: The DLNR has engaged in discussions with the U.S. Army Corps of Engineers regarding potential cost sharing agreements to support beach restoration projects. We are currently working in collaboration to establish a streamlined permitting process for beach restoration projects as part of the State's Small Scale Beach Restoration (SSBR) Program. We are also actively engaged in discussions with the U.S. Army Corps of Engineers to request access across Federal lands at Fort DeRussy Park for equipment ingress/egress and laydown and staging areas. A formal pre-application consultation will be conducted with the U.S. Army Corps of Engineers during the final design and permitting process, at which time we will seek to leverage any additional resources that may be available to support the Program.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** gawznerx <gawznerx@aol.com>  
**Sent:** Monday, June 28, 2021 2:12 PM  
**To:** Waikiki  
**Subject:** Waikiki Beach improvement plan/ Seawall

As a resident and taxpayer living in 96815 I ask you to reject this plan in its entirety.

These sea walls will not directly benefit the residents of Waikiki or Oahu as it's so obvious it's there only to create a beach for just those hotels.

Do two wrongs make it right? Well that's the argument being placed claiming the Kuhio beach is engineered so it's ok to engineer more! This plan is being put forward literally months from a recurring sand replenishment program - and supporters think this is ok?


These walls will ruin a major portion of the world famous surf breaks not only with shifting sand but the backwash from structures placed even further out to sea than the existing walls. At least that backwash isn't redistributing sand throughout the reefs, sand that will have to be imported to begin with. Sand that doesn't belong there. Sand that will have to be replenished likely more than every 5 years just to be distributed in the reefs.

That sand will clearly negatively affect the ecosystem as well as the beauty those reefs provide now. Aesthetically those reefs color the water giving Waikiki its world class destination reputation. The sand will destroy that. Moreover the sand will permanently alter the sea life that thrives there now. For example, will that redistributed sand chase away the honu that pop up thrilling locals, visitors and children on a daily basis.

Waikiki needs to be happy with what it has now. No more engineering which will beget even more. Let's cap the man made to what was done in history and not create new problems. The impact is truly unknown as estimates are just educated guesses, or worse politically influenced findings - and I think waiting to see how the pudding comes out will be tragic on many levels. I understand tourism is key component of Waikiki's and Oahu's economic health. These 3 hotels built themselves where they are and to ruin an ecosystem just for them to have a beach for their customers is immoral and wrong. Please end this obviously self centered plan. And I'd advocate ending this plan even if these hotels committed to paying for the plan and the resultant upkeep and/or problem correcting costs forever. It's just plain wrong, made worse by funding with public money.

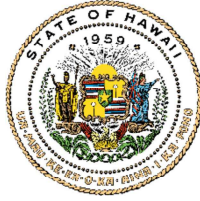
Respectfully,

Joseph Gawzner

Sent from my 

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
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Joseph Gawzner  
[gawznerx@aol.com](mailto:gawznerx@aol.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Joseph Gawzner:

Thank you for your email dated June 28, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: These sea walls will not directly benefit the residents of Waikiki or Oahu as it's so obvious it's there only to create a beach for just those hotels. Do two wrongs make it right? Well that's the argument being placed claiming the Kuhio beach is engineered so it's ok to engineer more! This plan is being put forward literally months from a recurring sand replenishment program - and supporters think this is ok? These walls will ruin a major portion of the world famous surf breaks not only with shifting sand but the backwash from structures placed even further out to sea than the existing walls. At least that backwash isn't redistributing sand throughout the reefs, sand that will have to imported to begin with. Sand that doesn't belong there.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Comment: Sand that will have to be replenished likely more than every 5 years just to be distributed in the reefs. That sand will clearly negatively affect the ecosystem as well as the beauty those reefs provide now. Aesthetically those reefs color the water giving Waikiki its world class destination reputation. The sand will destroy that. Moreover the sand will permanently alter the sea life that thrives there now. For example, will that redistributed sand chase away the honu that pop up thrilling locals, visitors and children on a daily basis.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section

8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Dee Gee <darrellbg808@gmail.com>  
**Sent:** Tuesday, June 29, 2021 5:35 AM  
**To:** Waikiki  
**Cc:** Joe Gawzner; Terry Jones; Will & Karen Allison; Mark Sollberger; vonarnswalddc; Dyanne Taylor; Jennifer Simonson; Lee's Rentals; dennis.varde@hpe.com; buzz lightyear  
**Subject:** Proposed Waikiki Beach Improvement (T Groins)

To the Department of Land and Natural Resources in partnership with the Waikiki Beach Special Improvement District Association,

This email to you is in opposition to your proposal to build three, 200-foot-long, T-head groins and a 3.8-acre beach out over the reef from the sea wall fronting the Halekulani Resort, and to add spurs to the Royal Hawaiian and Fort DeRussy groins on either side for the equivalent of five, T-head groins, intended to extend the life of the proposed new beaches by trapping and slowing the erosion of their sands.

As a frequent user of this valuable ocean resource your proposal will have dire consequences on the future of this area if you are allowed to proceed with your plans. I was one of the fortunate ones who was able to speak one on one with one of Hawaii's great waterman, George Downing and he opened my eyes to the negative effects this type of proposal will have on the future of this valuable ocean resource and it is our responsibility to insure that it is left untouched for our future generations our "Keiki O Ka Aina" so they will be able to enjoy this because of George Downing, Save our surf, the Friends of Kewalos, the Surfrider Foundation and countless others who hold this valuable resource as sacred.

Aloha,  
Bucky Goo



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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Bucky Goo  
[darrellbg808@gmail.com](mailto:darrellbg808@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Bucky Goo:

Thank you for your email dated June 29, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

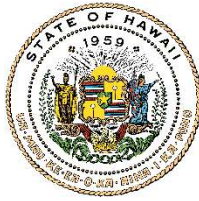
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I  
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DEAN D. UYENO  
ACTING DEPUTY DIRECTOR - WATER  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Sep 26, 2024

Bucky Goo  
[darrellbg808@gmail.com](mailto:darrellbg808@gmail.com)

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Mr. Goo:

Thank you for your email dated June 29, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, which incorrectly stated that you support the proposed program.

The DLNR is pleased to provide this letter to notify you that we understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Rob Robinson <rob@springboardhospitality.com>  
**Sent:** Wednesday, June 30, 2021 3:40 PM  
**To:** Waikiki  
**Subject:** Waikiki Beach Improvements- DEIS  
**Attachments:** Waikiki-Beach-improvements DEIS-Springboard Comment Letter.pdf

Aloha,

On behalf of Springboard Hospitality, please find the attached letter in support of the Waikiki Beach Improvement projects as outlined in the DEIS.

Regards,



**Rob Robinson**

Vice President

C 808.469.0524  
rob@springboardhospitality.com  
Los Angeles | Honolulu  
[www.springboardhospitality.com](http://www.springboardhospitality.com)  
[@springboardhospitality](https://www.instagram.com/springboardhospitality)

June 30, 2021

**TO:**

Sea Engineering Inc.  
Makai Research Pier  
41-305 Kalaniana'ole Hwy  
Waimanalo, HI 96795  
ATTN: Andy Bohlander  
waikiki@seaengineering.com

**FROM:**

Rob Robinson  
Vice President, Springboard Hospitality

**SUBJECT:** Draft Programmatic Environmental Impact Statement (DPEIS) for the Waikīkī Beach Improvement and Maintenance Project. Waikīkī Beach, Oahu

Springboard Hospitality is a locally owned and operated hotel management company that currently operates six hotels in Waikiki. Springboard Hospitality **strongly supports** the proposed beach improvement project by the Hawai'i Department of Land and Natural Resources (DLNR). The DLNR proposes beach improvement and maintenance projects in the Fort DeRussy, Halekulani, Royal Hawaiian, and Kūhiō Beach sectors of Waikīkī. These projects include the construction of new beach stabilization structures, and the recovery of offshore sand and its placement on the shoreline. The objectives of the proposed actions are to restore and improve Waikīkī's public beaches, increase beach stability through improvement and maintenance of shoreline structures, provide and improve safe access to and along the shoreline, and increase resilience to coastal hazards and sea level rise. The proposed actions are intended to maintain the economic, social, aesthetic, recreational, environmental, cultural, and historical qualities of Waikīkī.

Over the past several years, and as recently as this year, Waikīkī has experienced record high tides (King Tides) that have exacerbated erosion and flooding. These events have highlighted the impacts of sea level rise on the beaches of Waikīkī. As sea levels continue to rise, beach loss will progressively degrade the recreational, social, cultural, environmental, aesthetic, and economic value of Waikīkī. The Royal Hawaiian groin was rebuilt in 2020, after nearly 50 years of no new beach stabilization projects in Waikīkī. We are now at a crossroads with a clear and increasingly urgent need to implement maintenance and improvements to the Waikīkī shoreline in order to preserve and protect this unique and highly prized natural resource.

We support comprehensive forward thinking improvement projects like those proposed and recognize its urgency. With the combination of beach erosion and King Tides, the backshore is

frequently flooded, particularly during high surf events, accelerating damage to backshore infrastructure. Without beach improvements and maintenance, sea level rise is likely to result in total beach loss in Waikīkī before the end of the century and result in an estimated economic loss of \$50 million to \$150 million per hectare<sup>1</sup>. The loss of Waikīkī Beach alone would result in an annual loss of \$2.223 billion in visitor expenditures<sup>1</sup>. Improvements and maintenance like those proposed in the DPEIS are necessary to restore and maintain the beaches of Waikīkī to continue to support Hawaii's tourism-based economy.

We offer the following summary of project-specific comments.

1. The proposed beach improvement projects in Waikīkī are essential for the future goal to maintain a viable beach in these areas. Several beachfront areas in Waikīkī are seeing the rapid deterioration of both public and private backshore infrastructure such as groins, seawalls and walkways. This highlights the need to make long-term investments into beach stabilizing structures throughout Waikīkī in addition to more immediate emergency repairs to damaged infrastructure.
2. Climate change impacts including sea-level rise projected by the state of Hawai'i Climate Change Commission indicate significant flooding, wave overtopping and beach erosion in Waikīkī for the coming decades and suggest stakeholders and communities plan for *at least* 3.2 feet of sea-level rise now. This project has a strong climate change adaption component that is consistent with the recommendations of the State Climate Commission.
3. Without a stabilizing and energy-buffering beach to protect public and private coastal infrastructure, we anticipate even larger and more expensive structural repair and improvement projects to be required soon to prevent the destruction of threatened coastal structures.

Thank you for the opportunity to provide comments on this project.

Rob Robinson  
Vice President  
Springboard Hospitality

---

<sup>1</sup> Tarui, N., Peng, M., Eversole, D. (2018). *Economic Impact Analysis of the Potential Erosion of Waikīkī Beach*. University of Hawai'i Sea Grant College Program. April 2018.

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Rob Robinson, Vice President  
[rob@springboardhospitality.com](mailto:rob@springboardhospitality.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Rob Robinson:

Thank you for your letter dated June 20, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11<sup>TH</sup> FLOOR  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8480 • Fax: (808) 768-4567  
Web site: [www.honolulu.gov](http://www.honolulu.gov)

RICK BLANGIARDI  
MAYOR



ALEX KOZLOV, P.E.  
DIRECTOR

HAKU MILLES, P.E.  
DEPUTY DIRECTOR

June 30, 2021

Sea Engineering, Inc.  
Makai Research Pier  
41-305 Kalaniana'ole Hwy  
Waimanalo, HI 96795

Attn: Andy Bohlander

Dear Mr. Bohlander:

Subject: HRS, Chapter 343 Draft Programmatic Environmental Impact  
Statement (DPEIS)  
Waikiki Beach Improvement and Maintenance Program  
Honolulu District, Island of Oahu  
Makai (seaward) of Tax Map Keys:  
(1) 2-6-001:002, 004, 003, 008, 012, 013, 015, 017, 018, 019; (1) 2-  
6-002:005, 006, 017, 026; (1) 2-6-004:005, 006, 007, 008, 009,  
010, 012, (1) 2-6-005:001, 006, (1) 2-6-008:029

Thank you for the opportunity to review and comment. Our Facilities Division  
has comments; please see the attached.

Should you have any further questions, please contact Clifford Lau, Facilities  
Division Chief at 768-8483.

Sincerely,

A handwritten signature in black ink, appearing to read "Alex Kozlov".

*For* Alex Kozlov, P.E.  
Director

Attachments

AK:krm (853765)

## 5. PROPOSED ACTION: HALEKŪLANI BEACH SECTOR

### 5.1 General Description

The Halekūlani beach sector spans approximately 1,450 ft of shoreline extending from the Fort DeRussy outfall/groin east to the Royal Hawaiian groin. Prominent features in this sector include the Castle Waikīkī Shore, Outrigger Reef Waikīkī Beach Resort, Halekūlani Hotel, and the Sheraton Waikiki Hotel. The Halekūlani Channel extends perpendicular from the shoreline fronting the Halekūlani Hotel. An overview map of the Halekūlani beach sector is shown in Figure 5-1.

#### *History*

Shoreline modifications in the Halekūlani beach sector occurred generally coincident with modifications in the Fort DeRussy beach sector. In the early 1900's, the Halekūlani Channel was dredged, the material was used as fill for Fort DeRussy, and a series of seawalls were constructed along the shoreline. The Royal Hawaiian groin was constructed in 1927 and, soon after, sand was pumped to the shoreline to construct a beach. Eight small groins were constructed between Fort DeRussy and the Royal Hawaiian groin to stabilize the sand. The history of coastal engineering in the Halekūlani beach sector is summarized in Figure 5-2. Historical photographs of the Halekūlani beach sector are shown in Figure 5-3. Aerial photographs comparing the shoreline conditions in the Halekūlani beach sector in 1949 and 2015 are shown in Figure 5-4.

#### *Existing Conditions*

The Halekūlani beach sector is an entirely engineered shoreline. The west end of the sector is bounded by the Fort DeRussy outfall/groin, which consists of a concrete box culvert and a rock rubblemound groin. A narrow beach extends approximately 375 ft east from the Fort DeRussy outfall/groin fronting the Castle Waikīkī Shore and Outrigger Reef Waikīkī Beach Resort. The beach terminates at the west end of a vertical seawall that spans approximately 335 ft of shoreline fronting the Halekūlani Hotel. A concrete sidewalk constructed on top of the seawall provides limited lateral access along the shoreline. The seawall varies in height between +5.2 to +5.6 ft MSL and is frequently overtopped by waves during high tides and high surf events.

Two small pocket beaches, backed by vertical seawalls, are located between the Halekūlani and Sheraton Waikiki hotels. This area is often referred to as "Gray's Beach" in reference to a boardinghouse called "Gray's by the Sea" that existed at this site in the early 1900s. The west pocket beach spans approximately 100 ft of shoreline. The beach has a crest elevation up to approximately +7.5 ft MSL and a crest width of about 5 to 10 ft. The beach crest is regularly overtopped by waves and is frequently flooded, particularly during high tide and high surf events. A relict concrete groin is located near the center of the pocket beaches and extends approximately 125 ft seaward of the shoreline. The groin is almost entirely submerged. Due to the lack of a walkway in this area, lateral shoreline access is discontinuous, and people must traverse the intertidal beach in this area.

The east pocket beach spans approximately 125 ft of shoreline. The beach has a beach crest elevation between +5.5 to +6.5 ft MSL. The crest width varies from 0 to 25 ft. The beach terminates at the west end of a vertical seawall that spans approximately 500 ft of shoreline

It should be noted that the severe erosion here has made the Beach ROW access 141 unsafe and forced DPR to barricade the area. Recent erosion in April 2021 has resulted in portions of concrete slab on grade, which had been undermined, to break and fall down creating hazardous conditions for the public trying to cross this area. The proposed project to restore and stabilize the beach in this area will fix the safety problem at this Beach ROW and allow the path to be opened.



- The project will specify use of the quietest locally available equipment, e.g. high insertion loss mufflers, fully enclosed engines, and rubber tired equipment when possible.
- The use of horns for signaling will be prohibited.
- Worker training on ways to minimize impact noise and banging will be required.
- A noise complaint hot line will be provided at the job site to allow for feedback from the hotel operators, which can be used to help develop modifications to construction operations whenever feasible.
- Construction operations will cease in the vicinity of scheduled performances, such as the nightly hula show at the west end of Kūhiō Beach.

## 9.8 Public Services

### 9.8.1 Solid Waste

The City and County of Honolulu, Department of Environmental Services manages Honolulu's municipal solid waste system, including the H-POWER resource recovery facility and one sanitary landfill. A private company operates a construction debris landfill in Nānākuli, and private companies are responsible for solid waste collection from virtually all of the island's commercial organization.

### 9.8.2 Water Supply

The Honolulu Board of Water Supply (BWS) is responsible for the management, control and operation of O'ahu's municipal water system that serves the entire Primary Urban Center Development Plan area. The BWS system is an integrated, island-wide system with interconnections between water sources and service areas. Water is exported from areas of available supply to areas of municipal demand. None of the BWS facilities are present seaward of the shoreline where the proposed beach improvement and maintenance actions will occur. Neither does it maintain nor operate any pipelines or other water supply facilities within the area that will be used by construction equipment.

### 9.8.3 Police, Fire and Emergency Medical Services

#### *Police Protection*

The Hawai'i Department of Land and Natural Resources Division of Conservation and Resources Enforcement (DLNR-DOCARE) is responsible for enforcement activities in areas controlled by the DLNR, which includes the area seaward of the certified shoreline where the proposed actions will take place. In addition, Honolulu Police Department officers patrol accessible areas of the beach on all-terrain vehicles. Presently, officers only patrol as far as the Royal Hawaiian due to the limited shoreline access. The proposed actions will improve lateral access and thus facilitate police patrolling along the beach. The nearest police station is located at the Waikīki Beach Center (Police Sub-Station) on Kalākaua Avenue adjacent to the Moana Surfrider Hotel. Police headquarters is located on Beretania Street near its intersection with Ward Avenue.

This should include discussions on the short term and long term impact on life guard services along this shoreline. The City currently maintains lifeguard stations which is being severely impacted by shoreline erosion. These facilities will be impacted during and after construction of these improvements. Changes to the beach and the new structures may impact the areas of coverage of the existing lifeguard stands.

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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ENGINEERING  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Alex Kozlov  
[ddc@honolulu.gov](mailto:ddc@honolulu.gov)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Alex Kozlov:

Thank you for your letter dated June 30, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: *Section 4.1. Proposed Action: Halekūlani Beach Sector:* It should be noted that severe erosion at the 'Ewa (west) end of the Halekūlani seawall has made beach right-of-way (ROW) access 141 unsafe and forced DPR to barricade the area. Recent erosion in April 2021 has resulted in portions of concrete slab on grade, which has been undermined, to break and fall down, creating a hazardous condition for the public trying to cross this area. The proposed project to restore and stabilize the beach in this area will fix the safety problem at the beach ROW and allow the path to be opened.

Response: Thank you for your comment. We are aware of the current conditions at beach right-of-way (ROW) access 141 and agree that the proposed action will help to improve shoreline access in this area and alleviate risks to public health, safety, and welfare. We will conduct a pre-application consultation meeting with the City and County of Honolulu, Department of Parks and Recreation to review the final plans.

Comment: *Section 9.8.3 Police, Fire and Emergency Services:* This should include discussions on the short-term and long-term impact on lifeguard services along this shoreline. The City currently maintains lifeguard stations which is being severely impacted by shoreline erosion. These facilities will be impacted during and after construction of these improvements. Changes to the beach and the new structures may impact the areas of coverage of the existing lifeguard stands.

Response: We appreciate your comments and concerns regarding potential impacts to ocean safety resources. We acknowledge that the proposed actions may temporarily impact ocean safety resources during construction and could potentially result in the

need for additional ocean safety resources. To our knowledge, there are no lifeguard towers in the Halekūlani and Fort DeRussy beach sectors. We would strongly support the City in expanding ocean safety services in this area. Based on published cost estimates in the EIS for the Waikīkī War Memorial Complex, we anticipate that this would cost around \$300,000 in salaries and equipment.

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

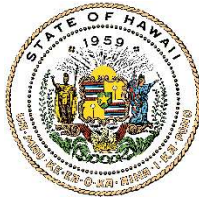
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Alex Kozlov, P.E., Director  
City and County of Honolulu  
Department of Design and Construction  
650 South King Street, 11<sup>th</sup> Floor  
Honolulu, HI 96813  
[ddc@honolulu.gov](mailto:ddc@honolulu.gov)  
808-768-8480

Sep 26, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Mr. Kozlov:

Thank you for your letter dated June 30, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024. The DLNR is pleased to provide the following additional responses to your comments.

Comment: *Section 4.1. Proposed Action: Halekūlani Beach Sector:* It should be noted that severe erosion at the 'Ewa (west) end of the Halekūlani seawall has made beach right-of-way (ROW) access 141 unsafe and forced DPR to barricade the area. Recent erosion in April 2021 has resulted in portions of concrete slab on grade, which has been undermined, to break and fall down, creating a hazardous condition for the public trying to cross this area. The proposed project to restore and stabilize the beach in this area will fix the safety problem at the beach ROW and allow the path to be opened.

Response: Thank you for your comment. We are aware of the current conditions at beach right-of-way (ROW) access 141 and agree that the proposed action will help to improve shoreline access in this area and alleviate risks to public health, safety, and welfare. We will conduct a pre-application consultation meeting with the City and County of Honolulu, Department of Parks and Recreation to review the final plans.

Comment: *Section 9.8.3 Police, Fire and Emergency Services:* This should include discussions on the short-term and long-term impact on lifeguard services along this shoreline. The City currently maintains lifeguard stations which is being severely impacted by shoreline erosion. These facilities will be impacted during and after construction of these improvements.

Changes to the beach and the new structures may impact the areas of coverage of the existing lifeguard stands.

Response: We appreciate your comments and concerns regarding potential impacts to ocean safety resources. The proposed actions are intended to increase recreational dry beach area and improve lateral shoreline access, and therefore may result in an increased number of beach users. There are many factors that determine the number of beach users present at a given time including but not limited to weather, ocean conditions, seasonal variability in visitor numbers, and scheduled events. Therefore, we are unable to predict how beach usage may change after project completion. If the number of beach users in Waikīkī were to increase, this could also result in an increased number of incidents that would require police, fire, and medical services, which may necessitate the need for additional ocean safety personnel and/or lifeguard towers.

Romine and Fletcher (2012) found that 70% of beaches in Hawai'i are undergoing chronic (long-term) erosion and over 10% (13 miles) of Hawaii's beaches have been completely lost to erosion over the past century. Based on historical and projected erosion rates, we anticipate that the beaches of Waikīkī will continue to erode and the narrower portions of the beaches (e.g., the east ends of the Fort DeRussy and Royal Hawaiian beach sectors) can be expected to be completely gone in 15 to 30 years, with total beach loss across the entire length of the Waikīkī shoreline occurring before the end of the century. We feel that the potential impacts associated with increased beach usage resulting from the proposed actions far outweigh the environmental, social, cultural, recreational, aesthetic, and economic impacts associated with beach loss in Waikīkī.

We acknowledge that the proposed actions may temporarily impact ocean safety resources during construction. Sand transportation and placement operations on the beach will require portions of the shoreline to be cordoned off to ensure public health and safety. Access across the cordoned off areas will be limited to specific crossing points with crossing guards. Prior to commencement of construction activities, the Honolulu Police Department, Honolulu Fire Department, Ocean Safety and Lifeguard Services Division, and Emergency Medical Services will be informed of the project construction schedule and apprised of the emergency vehicle access routes to be used during construction. The contractor will be required to provide ample clearance for emergency vehicles at all times. The proposed actions do not involve any activities that would permanently alter the need for, or ability to provide, ocean safety or emergency services.

Over the long-term, increasing dry beach area is expected to reduce the impacts of erosion on existing lifeguard towers in Waikīkī. To our knowledge, there are no lifeguard towers in the Halekūlani and Fort DeRussy beach sectors. We would strongly support the City in expanding ocean safety services in this area. Based on published cost estimates in the EIS for the Waikīkī War Memorial Complex, we anticipate that this would cost around \$300,000 in salaries and equipment.

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Karen St germaine <stgermainek@yahoo.com>  
**Sent:** Friday, July 9, 2021 12:19 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waik%4%Bk%4%B Beach Improvement and Maintenance Project

I live here in Waikiki and have for 63 years been a daily beach goer. I disagree with the building of extra groins in front of the hotels lining the beach. It would impact the livelihood of many long time family owned catamaran businesses that are a major attraction not to mention the adverse effect on natural feeding patterns of the many honu that I so love to snorkel with. It would be a very expensive undertaking with no proven results,as the replenishing of sand that has already washed away, only months after great expense was moved there. Please leave the beaches as they are .

Mahalo

Karen StGermaine

Waikiki

[Sent from Yahoo Mail on Android](#)

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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Karen St. Germaine  
[stgermainek@yahoo.com](mailto:stgermainek@yahoo.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Karen St. Germaine:

Thank you for your email dated July 9, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: I live here in Waikiki and have for 63 years been a daily beach goer. I disagree with the building of extra groins in front of the hotels lining the beach. It would impact the livelihood of many long time family owned catamaran businesses that are a major attraction not to mention the adverse effect on natural feeding patterns of the many honu that I so love to snorkel with. It would be a very expensive undertaking with no proven results, as the replenishing of sand that has already washed away, only months after great expense was moved there. Please leave the beaches as they are .

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al



(2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate

from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

Response: Commercial operations are an important aspect of the Waikīkī Beach experience. Commercial operations include ocean recreation equipment rentals, surfing and paddling lessons, chair and umbrella rentals, food and beverage concessions, and canoe and catamaran rides. The proposed actions could potentially impact these operations during construction. For previous projects, including Waikīkī Beach Maintenance I (2012), Kūhiō Sandbag Groin (2019), Royal Hawaiian Groin Replacement (2020) and Waikīkī Beach Maintenance II (2021), the State has worked collaboratively with the commercial operators and the City and County of Honolulu Department of Enterprise Services to mitigate disruptions to commercial activities. Examples include adjusting working hours, limiting the size of active work hours, establishing corridors for pedestrian access, and temporarily relocating concessions to other parts of the beach so they can continue to operate during construction. Any commercial operations that may be displaced during construction are expected to return

immediately following completion of the projects. Thus, no significant impacts to commercial operations are anticipated.

Concern has been expressed about the short- and long-term impacts that the proposed project in the Halekūlani beach sector may have on catamaran operations. The proposed action in the Halekūlani beach sector is not anticipated to have any negative impacts on catamaran operations. The minimum beach crest width at its narrowest point midway between the groins would be about 20 to 30 feet, and the beach slope would be 1V:8H (vertical to horizontal). Maintaining a stable beach with a gentler slope will provide additional space for the catamarans to tie up and safely load and offload guests. The Halekūlani Channel would remain unobstructed to allow for safe navigation. The groin stem length (distance seaward from the shoreline) would be up to about 200 ft and the gaps between the groin heads would be approximately 200 ft wide.

The catamarans are approximately 45 ft long and 25 ft wide, so the gaps between the groin heads should be sufficiently wide to provide safe ingress and egress for catamaran access to/from the shoreline. The new beach and groins would also eliminate the seasonal erosion that forces the catamarans to relocate their operations to the Fort DeRussy beach sector. Thus, no negative impacts to navigation or catamaran operations are anticipated.

For additional information regarding potential impacts to navigation and catamarans, please see the following section of the FPEIS:

- Section 9.4.6

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

# Waikiki

---

**From:** Audrey Kurihara <akurihara@CWLfirm.com>  
**Sent:** Thursday, July 15, 2021 12:10 PM  
**To:** Waikiki  
**Cc:** Cynthia A. Farias; gparsons3@yahoo.com  
**Subject:** Response to Draft EIS for Waikiki Beach  
**Attachments:** July 12, 2021 Letter from George Parsons regarding Draft EIS Waikiki.pdf

*This letter is submitted on behalf of King Parsons Enterprises, Ltd. in response to the Draft EIS for Waikiki Beach. Thank you for the opportunity to submit these comments.*

Thank you

**Audrey Kurihara**

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Tel: 808.744.7020  
Direct: 808.800.4188  
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July 12, 2021

Sea Engineering Inc.  
Makai Research Pier  
41-305 Kalaniana'ole Hwy  
Waimanalo, HI 96795  
ATTN: Andy Bohlander/David Smith  
waikiki@seaengineering.com

**SUBJECT:** Draft Programmatic Environmental Impact Statement (DPEIS) for the Waikīkī Beach Improvement and Maintenance Project. Waikīkī Beach, Oahu

King Parsons Enterprises Ltd. **strongly supports** the proposed beach improvement project by the Hawai'i Department of Land and Natural Resources (DLNR). The DLNR proposes beach improvement and maintenance projects in the Fort DeRussy, Halekulani, Royal Hawaiian, and Kūhiō Beach sectors of Waikīkī. These projects include the construction of new beach stabilization structures, and the recovery of offshore sand and its placement on the shoreline. The objectives of the proposed actions are to restore and improve Waikīkī's public beaches, increase beach stability through improvement and maintenance of shoreline structures, provide and improve safe access to and along the shoreline, and increase resilience to coastal hazards and sea level rise. The proposed actions are intended to maintain the economic, social, aesthetic, recreational, environmental, cultural, and historical qualities of Waikīkī.

Over the past several years, and as recently as this year, Waikīkī has experienced record high tides (King Tides) that have exacerbated erosion and flooding. These events have highlighted the impacts of sea level rise on the beaches of Waikīkī. As sea levels continue to rise, beach loss will progressively degrade the recreational, social, cultural, environmental, aesthetic, and economic value of Waikīkī. The Royal Hawaiian groin was rebuilt in 2020, after nearly 50 years of no new beach stabilization projects in Waikīkī. We are now at a crossroads with a clear and increasingly urgent need to implement maintenance and improvements to the Waikīkī shoreline in order to preserve and protect this unique and highly prized natural resource.

We support comprehensive forward thinking improvement projects like those proposed and recognize its urgency. With the combination of beach erosion and King Tides, the backshore is frequently flooded, particularly during high surf events, accelerating damage to backshore infrastructure. Without beach improvements and maintenance, sea level rise is likely to result in total beach loss in Waikīkī before the end of the century and result in an estimated economic loss of \$50 million to \$150 million per hectare<sup>1</sup>. The loss of Waikīkī Beach alone would result in an annual loss of \$2.223 billion in visitor expenditures<sup>1</sup>. Improvements and maintenance like those proposed in the DPEIS are necessary to restore and maintain the beaches of Waikīkī to continue to support Hawaii's tourism-based economy.

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<sup>1</sup> Tarui, N., Peng, M., Eversole, D. (2018). *Economic Impact Analysis of the Potential Erosion of Waikīkī Beach*. University of Hawai'i Sea Grant College Program. April 2018.

proposed in the DPEIS are necessary to restore and maintain the beaches of Waikīkī to continue to support Hawaii's tourism-based economy.

The proposed beach improvement projects in Waikīkī are essential for the future goal to maintain a viable beach in these areas. Several beachfront areas in Waikīkī are seeing the rapid deterioration of both public and private backshore infrastructure such as groins, seawalls and walkways. This highlights the need to make long-term investments into beach stabilizing structures throughout Waikīkī in addition to more immediate emergency repairs to damaged infrastructure.

Climate change impacts, including sea-level rise projected by the state of Hawai'i Climate Change Commission, indicate significant flooding, wave overtopping and beach erosion in Waikīkī for the coming decades and suggest stakeholders and communities plan for *at least* 3.2 feet of sea-level rise now. This project has a strong climate change adaption component that is consistent with the recommendations of the State Climate Commission.

Without a stabilizing and energy-buffering beach to protect public and private coastal infrastructure, we anticipate even larger and more expensive structural repair and improvement projects to be required soon to prevent the destruction of threatened coastal structures.

King Parsons Enterprises, Ltd. operates MAITA'I Catamaran which sails from Gray's Beach in the Halekulani Sector. With the above statements in mind, we offer the following project-specific comments and questions:

1. Sheraton walkway. The walkway fronting the Sheraton Waikiki Hotel has been closed for too long and presents an eyesore and hazard to locals and visitors alike. Will the project include repairs or removal of the walkway, or construction of another alternative for persons walking in front of the hotel?
2. Flooding. Currently, summer surf often rolls up Grays Beach and over the barrier in front of the Sheraton. Combined with the King Tides, this results in a river of sand and water flowing to Kalia Road. We hope the additional sand will prevent the surf and tides from reaching these areas.
3. Old groins. A number of guests and beachgoers have complained about old groins that have fallen over and created tripping hazards. The exposed cement structure which is in middle of Grays Beach is also a toe stubber. Will the additional sand which will be placed on Gray's Beach be sufficient to bury the structure at a safe depth so that surf and tides will not expose the structure?
4. Sand deposits on reef. The ocean immediately fronting the Sheraton and Halekulani hotels is very shallow in places. Is any danger that sand deposits would make it more difficult or dangerous to navigate the catamarans over the reef area.

Sea Engineering Inc.

July 12, 2021

Page 3

In 1976, when I first started as a catamaran operator, there was a relatively narrow but very nice beach fronting the Sheraton walkway. Our vessel operated in front of the Edge Bar and Sheraton pool. Now, 45 years later there is no sand, a loss of 5 or 6 feet of vertical beach! We are hopeful this project will restore the beach fronting the Sheraton to be enjoyed by beachgoers, surfers, swimmers and, of course the catamarans of Waikiki.

Thank you for the opportunity to provide comments on this worthwhile project.

Sincerely,

*/s/ George Parsons*

George Parsons  
President, King Parsons Enterprises, Ltd.  
Maita'i Catamaran  
PO Box 8193  
Honolulu, Hawaii 96830  
gparsons3@yahoo.com

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
RYAN K.P. KANAKA'OLE  
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DEAN D. UYENO  
ACTING DEPUTY DIRECTOR - WATER  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

George Parsons  
[gparsons3@yahoo.com](mailto:gparsons3@yahoo.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear George Parsons:

Thank you for your letter dated July 12, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: The walkway fronting the Sheraton Waikiki Hotel has been closed for too long and presents an eyesore and hazard to locals and visitors alike. Will the project include repairs or removal of the walkway, or construction alternative for persons walking in front of the hotel?

Response: We agree that the current condition of the seawall and walkway is an ongoing issue that is concerning from both an aesthetic and public health and safety perspective. Generally, the DLNR does not regulate land uses mauka (landward) of the certified shoreline in Waikīkī. Responsibility for regulation and permitting typically rests with the City and County of Honolulu. The majority of the existing seawalls are privately-owned structures and are located outside of the Conservation District. As a result, the Program does not propose to repair, modify, replace, or remove any of the existing seawalls. The proposed action in the Halekūlani beach sector will increase dry beach width and improve lateral access and would not preclude private landowners from proceeding with any structural repairs that may be necessary now or in the future.

Comment: Currently, summer surf often rolls up Gray's Beach and over the barrier in front of the Sheraton. Combined with King Tides, this results in a river of sand and water flowing to Kalia Road. We hope the additional sand will prevent the surf and tides from reaching these areas.

Response: We agree with your concerns regarding the frequent flooding of Gray's Beach, an issue that is likely to become more frequent and severe as sea levels continue to rise. The proposed groins and beach fill will produce a stable beach and reduce the



loss of sand via cross-shore transport. The wider and higher elevation beach will also provide a natural buffer to accommodate flooding during high tide and high surf events.

Comment: A number of guests and beachgoers have complained about old groins that have fallen over and created tripping hazards. The exposed concrete structure which is in the middle of Gray's Beach is also a toe stubber. Will the additional sand which will be placed on Gray's Beach be sufficient to bury the structure at a safe depth so that surf and tides will not expose the structure?

Response: We are aware of the structure you reference and have occasionally observed it protruding from the beach face. At this time, we are not proposing to remove the structure. However, the proposed beach fill will be approximately 8 feet deep at this location, so the structure should not be exposed after construction is complete.

Comment: The ocean immediately fronting the Sheraton and Halekūlani hotels is very shallow in places. Is there any danger that sand deposits would make it more difficult to navigate the catamarans over the reef area.

Response: We acknowledge the importance of maintaining safe navigation for catamaran operations. The proposed action will involve placing sand along the existing shoreline and constructing T-head groins to stabilize the sand. Existing navigation routes for the *Maita'i* and the *Holokai* catamarans are shown in Figure 9-4 of the FPEIS. The proposed action will require catamaran operators to alter their current navigation routes to align with the Halekūlani Channel. This route would allow the catamarans to navigate safely between the groin heads and access the beach. The minimum beach width at its narrowest point midway between the groins will be about 20 to 30 ft, and the beach slope will be 1V:8H (vertical to horizontal). The additional dry beach area and gentle beach slope will provide a safe area for catamaran operators to load and offload passengers. The proposed action will not significantly alter offshore bathymetry, so no negative impacts to navigation are anticipated.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Andy Bohlander

---

**From:** Andy Bohlander <andybohlander@gmail.com>  
**Sent:** Friday, July 16, 2021 10:10 PM  
**To:** Andy Bohlander  
**Subject:** Fwd: Waikiki Beach Improvements DPEIS Comment Due July 23  
**Attachments:** Draft Programmatic EIS Statement Waikiki Beach Improvement 7-16-21.pdf

----- Forwarded message -----

From: **Titchen, John K** <[john.titchen@honolulu.gov](mailto:john.titchen@honolulu.gov)>  
Date: Fri, Jul 16, 2021 at 4:21 PM  
Subject: RE: Waikiki Beach Improvements DPEIS Comment Due July 23  
To: Andy Bohlander <[andybohlander@gmail.com](mailto:andybohlander@gmail.com)>  
Cc: Dolan Eversole <[eversole@hawaii.edu](mailto:eversole@hawaii.edu)>, Lemmo, Sam J <[sam.j.lemmo@hawaii.gov](mailto:sam.j.lemmo@hawaii.gov)>, [jclark@hawaii.rr.com](mailto:jclark@hawaii.rr.com) <[jclark@hawaii.rr.com](mailto:jclark@hawaii.rr.com)>

Andy,

Some comments from C&C of Honolulu Ocean Safety attached. I really hope you can add some text about the potential or possible need for more lifeguards in the project area. Otherwise, DPEIS looks great – I certainly understand the significance/necessity of this project with respect to tourism, I would just love to see more robust mention of the public safety aspects. Happy to discuss anytime; otherwise, hope this letter is sufficient. Mahalo, have a great weekend!

Aloha,

-John

John Kamalei Titchen, J.D.

Chief of Ocean Safety

City & County of Honolulu

808-723-7862

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**From:** Waikiki Beach Special Improvement District Association [mailto:[waikikibeachsida@gmail.com](mailto:waikikibeachsida@gmail.com)]

**Sent:** Tuesday, June 29, 2021 4:27 PM

**To:** Debi Bishop; Ted Bush; [dylan@tsrestaurants.com](mailto:dylan@tsrestaurants.com); Michael Czarcinski; [mark.demello@aqua-aston.com](mailto:mark.demello@aqua-aston.com); [rdiamond@astonwaikikibeach.com](mailto:rdiamond@astonwaikikibeach.com); Thomas Foti; Bob Hampton; Robert Martin; George Kam; Ulrich Krauer; [alikamau@hotmail.com](mailto:alikamau@hotmail.com); Irby Morvant; [bnakaoka@queens.org](mailto:bnakaoka@queens.org); Jennifer Nakayama; Michael Shaff; Sam Shenkus; Gonser, Matthew; Mike Takayama; Tommy Waters; [pam.yagi@hgv.com](mailto:pam.yagi@hgv.com); Mark Taylor; Valerie Haney; [manuel.valbuena@honolulu.gov](mailto:manuel.valbuena@honolulu.gov); Bob Finley; DPR Parks MS; Ross Sasamura; Jason Ito; Reid Hinaga; Mike Foley; Rus Murakami; John Clark; Keone Downing; Brian Benton; Tara Bendell; Patty Tam; Brett Greenberg; Mike Kelley; Meghan Statts; Soo/Richard Stover; Tammy Moniz; George Parsons; Didi Robello; Neal Sklodowski; Allen, Kevin; Connie Deguair; Kalani Kaanaana; Ikehara, Carolyn T; Titchen, John K; Lee Nakahara; Woll, Jason D; Lauren Blickley; Doorae Shin; John Savio; Ed Underwood; Ching, Christopher; Andrew Wycklendt; Rob Porro; Sharon Moriwaki; Charles Izumoto; Tyler Roukema; Joe Donahue; Bill Meheula; Jon Steiner

**Cc:** Rick Egged; Rob Robinson; JoAnn Morimoto; Sam Lemmo; Andy Bohlander; Dave Smith; Scott Sullivan; Shellie Habel; Jim Fulton

**Subject:** Waikiki Beach Improvements DPEIS Comment Due July 23

CAUTION: Email received from an EXTERNAL sender. Please confirm the content is safe prior to opening attachments or links.

Apologies for any duplicate notice but we want to ensure everyone is aware of the public comment period for the Draft Programmatic EIS for the Waikiki Beach Improvements.

Aloha, I am contacting you as a Waikiki stakeholder to inform you that the Department of Land and Natural Resources has published the [Draft Programmatic Environmental Impact Statement \(DPEIS\)](#) for the Waikiki Beach Improvement and Maintenance Project. It is important Waikiki stakeholders provide comments on this DEIS in order for the DLNR and project consultants to hear and incorporate feedback from the community.

Please consider providing comments on this document using your own letterhead and you may want to use the attached comment letter template as a guide.

**Comments for the DPEIS are due within 45 days of publication in the OEQC and need to be submitted to the DLNR/ Consultant by July 23, 2021.**

Please feel free to contact me if you have any questions or concerns, I have heard from a number of you regarding more immediate erosion control measures which we can further discuss but this DEIS is the best chance at lasting improvements that will help to stabilize these critically important beach areas.

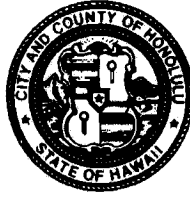
For more information on the project go to: <https://www.wbsida.org/waikiki-beach-improvements>

Aloha,  
Dolan Eversole  
Waikiki Beach Management Coordinator  
Waikiki Beach Special Improvement District Association

(808) 956-9780

HONOLULU EMERGENCY SERVICES DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**

3375 KOAPAKA STREET, SUITE H-450 • HONOLULU, HAWAII 96819-1814  
Phone: (808) 723-7800 • Fax: (808) 723-7836



RICK BLANGIARDI  
MAYOR

JAMES H.E. IRELAND, M.D.  
DIRECTOR

IAN T.T. SANTEE, M.P.A.  
DEPUTY DIRECTOR

July 16, 2021

Mr. Andy Bohlander  
Sea Engineering Inc.  
Makai Research Pier  
41-305 Kalanianaʻole Highway  
Waimanalo, Hawaii 96795

Dear Mr. Bohlander:

**SUBJECT:** Draft Programmatic Environmental Impact Statement (DPEIS) for  
the Waikīkī Beach Improvement and Maintenance Project.  
Waikīkī Beach, Oʻahu

The City & County of Honolulu, Ocean Safety and Lifeguard Services Division,  
offers the following comments for the DPEIS:

Consider adding "Ocean Safety" to the section on Public Services (Section 9.8.3,  
page 296). The subject line for Section 9.8.3 should read "Police, Fire, Emergency  
Medical Services, and Ocean Safety." While the city's Ocean Safety Division  
appreciates your finding that the "proposed actions are anticipated to have a *negligible*  
impact on public services," we respectfully disagree. We think this should be rephrased  
to say, "a moderate but acceptable impact on public services." We at Ocean Safety will  
be most affected by this project, which we agree is necessary given the justification  
provided by the DPEIS.

Section 9.8.3 should then say under a heading "Ocean Safety": The two city  
lifeguard towers nearest the project are on the sand nearest the Royal Hawaiian and  
Moana Surfrider Hotels. Mobile city Ocean Safety Division teams (using jet skis and  
trucks) are available to respond during daylight hours 7:00 a.m. to 7:00 p.m. The  
project *may* force beach users into other areas of Waikīkī, and *may* impact Ocean  
Safety services with respect to shoreline access, or delivery of patients to suitable  
landing areas for coordination with EMS or the Honolulu Fire Department.

Also, the DPEIS seems to miss mentioning the significant public safety impact of  
adding sand and repairing these groins with additions (the so called T walls, for  
instance). Adding manmade features to a dynamic shoreline environment, even one

Mr. Andy Bohlander  
July 16, 2021  
Page 2

long since adjusted by human inhabitancy (in particular, post 1890s), will naturally increase risk and will provide additional chances for beach goers and ocean users to get hurt. The men and women of the Ocean Safety Division's Waikīkī section ("District 1," headquartered at the War Memorial Natatorium) do an amazing job day in and day out in communicating hazards and risks to kama'āina and visitors alike. It is likely these hazards and risks will be significantly altered by the addition of sand and the addition and/or improvement of groins.

Furthermore, there is no mention of what will almost undoubtedly result in a requirement for an increased Ocean Safety presence for all of these improved areas. I respectfully recommend developing thoughts raised by the city's Ocean Safety Division (by myself and Assistant Chief Kevin Allen on behalf of the city, and other stake holders with significant beach boy, ocean rescue, or water patrol experience) in some of the preliminary meetings on this subject.

These thoughts include an improved Ocean Safety presence with the addition of lifeguard towers, appropriate signage, robust public communication on any potentially "new" hazards or risks, input from water men and water women with decades of response experience in the affected area, and important work with industry in the area to advise their customers of the shoreline changes.

Mahalo for the chance to comment on this DPEIS. Please contact me at (808) 723-7863 should you have any questions.

Sincerely,



John K. Titchen  
Chief of Ocean Safety

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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**RYAN K.P. KANAKA'OLE**  
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**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

John Kamalei Titchen, J.D., Chief of Ocean Safety  
City and County of Honolulu  
Ocean Safety and Lifeguard Services Division  
3375 Koapaka Street, Suite H-450  
Honolulu, HI 96819-1814

Mar 18, 2024

**SUBJECT:** Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear John Kamalei Titchen:

Thank you for your letter dated July 16, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

**Comment:** Consider adding "Ocean Safety" to the section on Public Services (Section 9.8.3, page 296). The subject line for Section 9.8.3 should read "Police, Fire, Emergency Medical Services, and Ocean Safety." Section 9.8.3 should then say under a heading "Ocean Safety": "The two city lifeguard towers nearest the project are on the sand nearest the Royal Hawaiian and Moana Surfrider Hotels. Mobile city Ocean Safety Division teams (using jet skis and trucks) are available to respond during daylight hours 7:00 a.m. to 7:00 p.m. The project may force beach users into other areas of Waikīkī and may impact Ocean Safety services with respect to shoreline access, or delivery of patients to suitable landing areas for coordination with EMS or the Honolulu Fire Department".

**Response:** Thank you for your comment. We agree that ocean safety should be specifically addressed in the section on Public Services. Section 9.8.3 of the FPEIS now reads "Police, Fire, Emergency Medical Services, and Ocean Safety" and the content you suggested has been added under the heading "Ocean Safety".

**Comment:** While the city's Ocean Safety Division appreciates your finding that the "proposed actions are anticipated to have a negligible impact on public services," we respectfully disagree. We think this should be rephrased to say, "a moderate but acceptable impact on public services."



Response: Thank you for your comment. We agree that our assessment of potential impacts erroneously excluded potential impacts to ocean safety services, and we apologize for the omission. We agree with the language that you suggested and have revised the FPEIS accordingly. A new section entitled “Ocean Safety” has been added as Section 9.8.3 of the FPEIS.

Comment: The DPEIS seems to miss mentioning the significant public safety impact of adding sand and repairing these groins with additions (the so-called T walls, for instance). Adding manmade features to a dynamic shoreline environment, even one long since adjusted by human inhabitation (in particular, post 1890s), will naturally increase risk and will provide additional chances for beach goers and ocean users to get hurt. The men and women of the Ocean Safety Division’s Waikīkī section (“District 1,” headquartered at the War Memorial Natatorium) do an amazing job day in and day out in communicating hazards and risks to kama‘āina and visitors alike. It is likely these hazards and risks will be significantly altered by the addition of sand and the addition and/or improvement of groins.

Response: Waikīkī is a predominantly engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. The proposed groins are similar in design to other existing groins in Waikīkī, such as the Royal Hawaiian Groin. While we cannot prevent individuals from traversing the proposed groins, we feel that the addition of new structures that are similar in form and function to structures that currently exist in Waikīkī will not substantially increase any risks to public health and safety that may already exist in this area. However, we acknowledge that the proposed actions may inadvertently trigger the need for increased ocean safety resources and would strongly support the City should it choose to expand ocean safety resources in Waikīkī.

Comment: There is no mention of what will almost undoubtedly result in a requirement for an increased Ocean Safety presence for all of these improved areas. I respectfully recommend developing thoughts raised by the city’s Ocean Safety Division (by myself and Assistant Chief Kevin Allen on behalf of the city, and other stake holders with significant beach boy, ocean rescue, or water patrol experience) in some of the preliminary meetings on this subject. These thoughts include an improved Ocean Safety presence with the addition of lifeguard towers, appropriate signage, robust public communication on any potentially “new” hazards or risks, input from water men and water women with decades of response experience in the affected area, and important work with industry in the area to advise their customers of the shoreline changes.

Response: Thank you for your comment. We acknowledge that the proposed actions may inadvertently trigger the need for increased ocean safety resources. We encourage the Ocean Safety Division to participate in the Waikīkī Beach Community Advisory Committee (WBCAC). We would also appreciate the opportunity to meet with you and your staff to discuss these issues in more detail and identify potential ways to minimize risks to public health, safety, and welfare, as well as reduce any additional fiscal burden to the City that may result from the proposed actions.

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Richard Hamasaki <rihamasa@gmail.com>  
**Sent:** Sunday, July 18, 2021 4:53 PM  
**To:** Waikiki  
**Cc:** repmatayoshi@capitol.hawaii.gov; senkeohokalole@capitol.hawaii.gov  
**Subject:** Waikīkī Beach Improvement and Maintenance Program (Comment)

To Whom It May Concern (cc to Representative Matayoshi & Senator Keohokalole):

I am responding to the following document: [http://oeqc2.doh.hawaii.gov/Doc\\_Library/2021-06-08-OA-DEIS-Waikiki-Beach-Improvement-and-Maintenance-Program.pdf](http://oeqc2.doh.hawaii.gov/Doc_Library/2021-06-08-OA-DEIS-Waikiki-Beach-Improvement-and-Maintenance-Program.pdf).

It's obvious that harvesting of sand offshore of Waikīkī and its placement on its beaches augment ocean silt which adversely impacts struggling reefs, advances the spread of non-Native limu, disturbs fish and marine habitats, and negatively affects the ocean's clarity. The construction of new groins, aka "beach stabilization structures," will perpetuate silt runoff and create poor ocean visibility — as we can see with the recent renovation of the groin fronting the Sheraton Hotel.

Any and all Waikīkī beach stabilization "improvements" must include the following before any new marine-related mitigation commences:

- 1) Implement thorough inspections of all hotels and businesses for damaged and/or leaking plumbing, poor drainage, or problems with sewage and/or grey water leakage. Without mitigation, these problems will continue to undermine water quality and the ocean clarity fronting Waikīkī. Hotels and nearby businesses must be responsible for addressing and completing these repairs, in perpetuity.
- 2) Acknowledge that repeated offshore dredging of sand fronting the hotels and its placement on the shoreline introduces more silt into the ocean which negatively impacts marine life, reef and corals along with the clarity of the ocean. Once acknowledged and documented, viable plans must be implemented that will prevent activities and any future construction projects that generate silt, runoff, and other polluting elements that negatively impact Waikīkī's waters.
- 3) Propose and insist that hotels and respective businesses hire community-approved ocean water quality inspectors to measure, document, and recommend effective methods of mitigating negative impacts of silt and runoff in Waikīkī waters from the shoreline to at least 200 yards or more offshore. Hotels and businesses must be required, by law, to protect ocean water quality and its clarity.
- 4) Document clearly and definitively that construction of any future groins will not negatively impact surfing and swimming areas, nor will these structures negatively affect Waikīkī's ocean clarity or further damage marine life.
- 5) Require that hotels take responsibility for the water quality and clarity fronting their hotels through educational activities for its guests and staff, require reef-friendly sunscreen, mitigate all polluting runoff, and repair all leaks and drainage systems as well as implement meaningful visitor and resident reef restoration projects that strive to eliminate pollution in every form, and to promote/maintain healthy marine life programs, activities, and objectives.

Ua mau ke ea o ka 'āina i ka pono!

Mahalo,

Richard Hamasaki  
45-417 Pailaka Place  
Kāne'ohe, HI 96744  
[rihamasa@gmail.com](mailto:rihamasa@gmail.com)

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Richard Hamasaki  
[rihamasa@gmail.com](mailto:rihamasa@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Richard Hamasaki:

Thank you for your email dated July 18, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: It's obvious that harvesting of sand offshore of Waikīkī and its placement on its beaches augment ocean silt which adversely impacts struggling reefs, advances the spread of non-Native limu, disturbs fish and marine habitats, and negatively affects the ocean's clarity. The construction of new groins, aka "beach stabilization structures," will perpetuate silt runoff and create poor ocean visibility — as we can see with the recent renovation of the groin fronting the Sheraton Hotel.

Any and all Waikīkī beach stabilization "improvements" must include the following before any new marine-related mitigation commences:

1) Implement thorough inspections of all hotels and businesses for damaged and/or leaking plumbing, poor drainage, or problems with sewage and/or grey water leakage. Without mitigation, these problems will continue to undermine water quality and the ocean clarity fronting Waikīkī. Hotels and nearby businesses must be responsible for addressing and completing these repairs, in perpetuity.

2) Acknowledge that repeated offshore dredging of sand fronting the hotels and its placement on the shoreline introduces more silt into the ocean which negatively impacts marine life, reef and corals along with the clarity of the ocean. Once acknowledged and documented, viable plans must be implemented that will prevent activities and any future construction projects that generate silt, runoff, and other polluting elements that negatively impact Waikīkī's waters.

3) Propose and insist that hotels and respective businesses hire community-approved ocean water quality inspectors to measure, document, and recommend effective methods of

mitigating negative impacts of silt and runoff in Waikīkī waters from the shoreline to at least 200 yards or more offshore. Hotels and businesses must be required, by law, to protect ocean water quality and its clarity.

4) Document clearly and definitively that construction of any future groins will not negatively impact surfing and swimming areas, nor will these structures negatively affect Waikīkī's ocean clarity or further damage marine life.

5) Require that hotels take responsibility for the water quality and clarity fronting their hotels through educational activities for its guests and staff, require reef-friendly sunscreen, mitigate all polluting runoff, and repair all leaks and drainage systems as well as implement meaningful visitor and resident reef restoration projects that strive to eliminate pollution in every form, and to promote/maintain healthy marine life programs, activities, and objectives.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021)

found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy.

As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

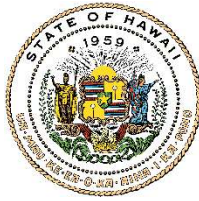
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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Sep 26, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Mr. Hamasaki:

Thank you for your email dated July 18, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024. The DLNR is pleased to provide the following additional responses to your comments.

Comment: It's obvious that harvesting of sand offshore of Waikīkī and its placement on its beaches augment ocean silt which adversely impacts struggling reefs, advances the spread of non-Native limu, disturbs fish and marine habitats, and negatively affects the ocean's clarity. The construction of new groins, aka "beach stabilization structures," will perpetuate silt runoff and create poor ocean visibility — as we can see with the recent renovation of the groin fronting the Sheraton Hotel. Any and all Waikīkī beach stabilization "improvements" must include the following before any new marine-related mitigation commences:

2) Acknowledge that repeated offshore dredging of sand fronting the hotels and its placement on the shoreline introduces more silt into the ocean which negatively impacts marine life, reef and corals along with the clarity of the ocean. Once acknowledged and documented, viable plans must be implemented that will prevent activities and any future construction projects that generate silt, runoff, and other polluting elements that negatively impact Waikīkī's waters.

4) Document clearly and definitively that construction of any future groins will not negatively impact surfing and swimming areas, nor will these structures negatively affect Waikīkī's ocean clarity or further damage marine life.

Response: We acknowledge your concerns regarding the potential for the proposed actions to increase the spread of invasive species. *A. erecta* was observed near the *Ala Moana* offshore sand deposit, but not near the *Hilton* offshore sand deposit. Areas where *A. erecta* were observed will be avoided during sand recovery operations. We



also note that two common algae species found in Waikīkī are non-native and invasive: *A. spicifera* and *G. salicornia*. These species are widespread off the shores of the Hawaiian Islands and *A. spicifera* is a food favored by green sea turtle. The proposed groin structures in the Halekūlani beach sector are not anticipated to affect species introductions to Hawai'i but may serve as habitat for existing introduced species. Future monitoring events will note any changes in the distribution of *A. spicifera* and other invasive species in Waikīkī.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat and protected species (see Section 8.11.1 and Appendix C of the FPEIS). A detailed Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective cleaning protocols for equipment, materials, and personnel to minimize the risk of spreading invasive species. A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

Response: We acknowledge your concerns regarding the potential for the proposed actions to impact marine habitat. The proposed action in the Halekūlani beach sector would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom,

silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani Beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

Response: We acknowledge your concerns regarding the potential for the proposed actions to impact water quality. We acknowledge that sand recovery, transport, and placement operations have the potential to cause sedimentation and turbidity. The offshore sand sources proposed for use in Waikīkī contain less than 6% fines, which complies with the State of Hawai'i guidelines for beach nourishment projects. Appropriate methods for dewatering and removal of fines to minimize turbidity will be established during the final design and permitting process.

Sea Engineering, Inc. conducted analytical modeling to evaluate the potential impacts of sedimentation on benthic habitat resulting from clamshell dredging for the *Ala Moana* and *Hilton* offshore sand deposits (see Figure 1 and Figure 2 later in this letter). The modeling results indicate that there would be no anticipated impacts to benthic habitat in the vicinity of the sand recovery areas.

For information regarding sand characteristics and quality, please see the following sections of the FPEIS:

- Section 3.6
- Appendix B

For information about the modeling results and potential impacts to benthic habitat, please see the following sections of the FPEIS:

- Section 8.10.1
- Appendix C

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat and protected species (see Section 8.11.1 and Appendix C of the FPEIS). A detailed Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective cleaning protocols for equipment, materials, and personnel to minimize the risk of spreading invasive species. A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information regarding water quality and turbidity, please see the following section of the FPEIS:

Response: We acknowledge your concerns regarding the potential for the proposed actions to impact swimming and surfing. Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed

structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Comment: Any and all Waikīkī beach stabilization "improvements" must include the following before any new marine-related mitigation commences:

1) Implement thorough inspections of all hotels and businesses for damaged and/or leaking plumbing, poor drainage, or problems with sewage and/or grey water leakage. Without mitigation, these problems will continue to undermine water quality and the ocean clarity fronting Waikīkī. Hotels and nearby businesses must be responsible for addressing and completing these repairs, in perpetuity.

3) Propose and insist that hotels and respective businesses hire community-approved ocean water quality inspectors to measure, document, and recommend effective methods of mitigating negative impacts of silt and runoff in Waikīkī waters from the shoreline to at least 200 yards or more offshore. Hotels and businesses must be required, by law, to protect ocean water quality and its clarity.

5) Require that hotels take responsibility for the water quality and clarity fronting their hotels through educational activities for its guests and staff, require reef-friendly sunscreen, mitigate all polluting runoff, and repair all leaks and drainage systems as well as implement meaningful visitor and resident reef restoration projects that strive to eliminate pollution in every form, and to promote/maintain healthy marine life programs, activities, and objectives.

Response: We acknowledge your concerns regarding potential impacts to water quality in Waikīkī. The primary responsibility for regulating water quality in Waikīkī rests with the State of Hawai'i Department of Health, Clean Water Branch. The DLNR does not have the jurisdiction or authority to regulate land-based sources of pollution that have the potential to impact water quality. Our jurisdiction and authority is generally limited to the area makai (seaward) of the certified shoreline, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules).

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Bianca Isaki <bianca@kahea.org>  
**Sent:** Monday, July 19, 2021 5:15 PM  
**To:** Waikiki; sam.j.lemmo@hawaii.gov  
**Subject:** Comment on Waikiki beach protection DEIS

To whom this may concern,

I'm submitting these comments on the DEIS linked here:

[http://oeqc2.doh.hawaii.gov/Doc\\_Library/2021-06-08-OA-DEIS-Waikiki-Beach-Improvement-and-Maintenance-Program.pdf](http://oeqc2.doh.hawaii.gov/Doc_Library/2021-06-08-OA-DEIS-Waikiki-Beach-Improvement-and-Maintenance-Program.pdf)

I am a frequent surfer in Waikiki. I also enjoy fishing and using sand turtles gathered in the nearshore area for bait. I would dive and pick limu in these areas, but more recently just watch the wildlife.

The purported “need” for the beach nourishment is to improve beach recreation, but none of the impacts of increased beach usage are reviewed or disclosed.

There is no requirement for an enforceable managed retreat plan. Giving shoreline commercial properties a longer lease is not in the public interest. Under the managed retreat alternative, the DEIS refers to larger planning processes for managed retreat. This assertion is not substantiated. Each hotel can plan to remove the structure and there is no reason that it cannot. These hotels have had a long tenure on these shorelines and should be required to plan for their own decommissioning. This happens with lots of other projects - why is this not a feasible mitigation for this one?

The extension of beach protection also generates its own positive feedback loop of maintained or increased investment in shoreline properties, and discourages the immediacy needed to pressure managed retreat planning and action. At a recent BLNR meeting, OCCL represented that it is not possible that new building could be occurring on Kaanapali shorelines where beach replenishment is being proposed. But that public testifier was correct that this permitting is occurring and is doubtless facilitated by the proposed beach protection actions. Without mitigation consisting in a dedicated planner or other knowledgeable professional who will watch all of the permitting and proposals from shoreline properties, it is likely that these properties will continue to enjoy investment at an existing or increased levels- premised on these beach protection actions.

The DEIS asserts that there will not be a significant impact on wave structure or waves. SEI did the modeling in other areas and made the same conclusion. But nearly every time there has been a beach replenishment or dredging, people have noted long and short term effects on wave quality and location - including in Waikiki. There have also been significant injuries due to these changes in ocean floor movements due to dredging. Rather than rely on the same models that apparently did not predict previous changes (which changes go unrecognized and unreviewed in the DEIS), a historical analysis should have been used. Everyone knows how much the breaks have changed over the years. The applicant should have the burden of establishing the patterns of beach protection, dredging, and the specific observed, empirical changes to the breaks - and then this information might show no significant impact. We don't know though because no one has done this analysis.

Bianca

--

Bianca Isaki, Ph.D., Esq.  
808.927.5606

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
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MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Bianca Isaki, Ph.D., Esq.  
[bianca@kahea.org](mailto:bianca@kahea.org)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Bianca Isaki:

Thank you for your email dated July 20, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: The purported “need” for the beach nourishment is to improve beach recreation, but none of the impacts of increased beach usage are reviewed or disclosed.

There is no requirement for an enforceable managed retreat plan. Giving shoreline commercial properties a longer lease is not in the public interest. Under the managed retreat alternative, the DEIS refers to larger planning processes for managed retreat. This assertion is not substantiated. Each hotel can plan to remove the structure and there is no reason that it cannot. These hotels have had a long tenure on these shorelines and should be required to plan for their own decommissioning. This happens with lots of other projects - why is this not a feasible mitigation for this one?

The extension of beach protection also generates its own positive feedback loop of maintained or increased investment in shoreline properties, and discourages the immediacy needed to pressure managed retreat planning and action. At a recent BLNR meeting, OCCL represented that it is not possible that new building could be occurring on Kaanapali shorelines where beach replenishment is being proposed. But that public testifier was correct that this permitting is occurring and is doubtless facilitated by the proposed beach protection actions. Without mitigation consisting in a dedicated planner or other knowledgeable professional who will watch all of the permitting and proposals from shoreline properties, it is likely that these properties will continue to enjoy investment at an existing or increased levels- premised on these beach protection actions.

Response: A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a



regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai'i from fulfilling its responsibility for overseeing beaches and submerged lands out to the seaward extent of the State's jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

Many beach management actions are considered mid-term solutions that are intended to manage and preserve coastal resources while other potential long-term solutions are investigated and implemented. While beach management strategies may not address the entire spectrum of issues and needs that are related to sea level rise adaptation, they provide a means to: manage and mitigate the impacts of erosion; protect, conserve, and enhance our beaches; maintain the economic viability of visitor destinations; and buy much-needed time to determine what managed retreat may consist of in Waikīkī and how it could potentially be accomplished. At a minimum, this will require collaboration with a much broader spectrum of public and private stakeholders and community members, as well as a level of capital investment that far exceeds that which is required to implement the proposed program.

Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, it is clear that sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area

makai (seaward) of the certified shoreline, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

Comment: The DEIS asserts that there will not be a significant impact on wave structure or waves. SEI did the modeling in other areas and made the same conclusion. But nearly every time there has been a beach replenishment or dredging, people have noted long and short term effects on wave quality and location - including in Waikiki. There have also been significant injuries due to these changes in ocean floor movements due to dredging. Rather than rely on the same models that apparently did not predict previous changes (which changes go unrecognized and unreviewed in the DEIS), a historical analysis should have been used. Everyone knows how much the breaks have changed over the years. The applicant should have the burden of establishing the patterns of beach protection, dredging, and the specific observed, empirical changes to the breaks - and then this information might show no significant impact. We don't know though because no one has done this analysis.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16%

of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Paul Sato <paulsato@hotmail.com>  
**Sent:** Tuesday, July 20, 2021 2:39 PM  
**To:** Waikiki  
**Subject:** Objection to Proposed Waikiki Beach Improvement Plan

I am writing to voice my strong objection and concern regarding the proposed construction of groins from the existing Fort DeRussy Outfall Groin to the Royal Hawaiian Groin as described in the proposed Waikiki Beach Improvement Plan.

This Plan proposes yet another attempt to over-engineer the already environmentally-taxed Waikiki shoreline. While the problem of sand erosion exists, the environmental impact of such a proposed plan needs additional consideration in regards to the manner in which it will:

- Negatively impact the natural reef and the habitat of endangered monk seals and green sea turtles, as well as fish and other marine wildlife.
- Cause currents and the unnatural shifting of sand that will artificially occur as result of the deflection and diversion of waves. This could ultimately be detrimental to the in-shore quality and clarity of the ocean.
- Affect the historic surfing breaks for which the area is legend, that go back to the time of Duke Kahanamoku and beyond.
- Further add to the blight of man-made structures that already disrupt the natural beauty of the Waikiki shoreline that attracts both visitor and local population alike.

I respectfully ask that you consider the above and the many other points of objection that I am sure that you have received in regards to requesting that this Proposed Waikiki Beach Improvement Plan does not move forward.

Thank you for your time and consideration.

Yours Truly,

Paul Sato  
Kailua, HI

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Paul Sato  
[paulsato@hotmail.com](mailto:paulsato@hotmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Paul Sato:

Thank you for your email dated July 20, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: I am writing to voice my strong objection and concern regarding the proposed construction of groins from the existing Fort DeRussy Outfall Groin to the Royal Hawaiian Groin as described in the proposed Waikiki Beach Improvement Plan. This Plan proposes yet another attempt to over-engineer the already environmentally-taxed Waikiki shoreline. While the problem of sand erosion exists, the environmental impact of such a proposed plan needs additional consideration in regards to the manner in which it will:

- Negatively impact the natural reef and the habitat of endangered monk seals and green sea turtles, as well as fish and other marine wildlife.
- Cause currents and the unnatural shifting of sand that will artificially occur as result of the deflection and diversion of waves. This could ultimately be detrimental to the in-shore quality and clarity of the ocean.
- Affect the historic surfing breaks for which the area is legend, that go back to the time of Duke Kahanamoku and beyond.
- Further add to the blight of man-made structures that already disrupt the natural beauty of the Waikiki shoreline that attracts both visitor and local population alike.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in

a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and

- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Response: Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline

in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

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**From:** Lee, Barbara J <barbara.j.lee@hawaii.gov>  
**Sent:** Tuesday, July 20, 2021 4:26 PM  
**To:** Waikiki  
**Subject:** Waikiki Beach Improvement and Maintenance Program, DPEIS  
**Attachments:** LD0619e\_WaikikiBchImprvmt&MaintenancePgm-DPEIS\_DLNRReplyLtr+Comments.pdf

Aloha,  
Attached please find responses to your request for comments from the Department of Land and Natural Resources.  
Thank you.  
Barbara

\*\*\*\*\*

Barbara J Lee  
Special Projects & Development Specialist  
Land Division  
Department of Land and Natural Resources  
PO Box 621  
Honolulu, HI 96809-0621

\*\*\*\*\*

DAVID Y. IGE  
GOVERNOR OF HAWAII



SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**LAND DIVISION**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

July 20, 2021

LD 0619e

Sea Engineering, Inc.  
Makai Research Pier  
41-305 Kalaniana'ole Hwy.  
Waimanalo, HI 96795

*Via email: waikiki@seaengineering.com*

Attn: Andy Bohlander

Dear Sirs:

**SUBJECT: Draft Programmatic Environmental Impact Statement**  
**Waikiki Beach Improvement and Maintenance Program**  
Honolulu District, Island of Oahu, Hawaii  
Makai (seaward) of various Tax Map Keys at Waikiki Beach

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to various DLNR divisions, as indicated on the attached, for their review and comment.

Attached are responses received from our (a) Engineering Division and (b) Division of Forestry and Wildlife, and (c) Land Division, Oahu District. Should you have any questions, please feel free to contact Barbara Lee via email at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

Sincerely,

*Russell Tsuji*

Russell Y. Tsuji  
Land Administrator

Attachments



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

June 17, 2021

LD 0619e

**MEMORANDUM**

FROM:

~~TO:~~

**DLNR Agencies:**

- Div. of Aquatic Resources (via email: [kendall.l.tucker@hawaii.gov](mailto:kendall.l.tucker@hawaii.gov))
- Div. of Boating & Ocean Recreation
- Engineering Division** (via email: [DLNR.Engr@hawaii.gov](mailto:DLNR.Engr@hawaii.gov))
- Div. of Forestry & Wildlife (via email: [Rubyrosa.T.Terrago@hawaii.gov](mailto:Rubyrosa.T.Terrago@hawaii.gov))
- Div. of State Parks
- Commission on Water Resource Management (via email: [DLNR.CWRM@hawaii.gov](mailto:DLNR.CWRM@hawaii.gov))
- Office of Conservation & Coastal Lands (via email: [sharleen.k.kuba@hawaii.gov](mailto:sharleen.k.kuba@hawaii.gov))
- Land Division – Oahu District (via email: [DLNR.Land@hawaii.gov](mailto:DLNR.Land@hawaii.gov))

TO:

~~FROM:~~

Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT:

**Draft Programmatic Environmental Impact Statement  
Waikiki Beach Improvement and Maintenance Program**

LOCATION:

Honolulu, Island of Oahu, Hawaii; Makai (seaward) of Tax Map Keys: (1) 2-6-001: 002, 004, 003, 008, 012, 013, 015, 017, 018, 019; (1) 2-6-002:005, 006, 017, 026; (1) 2-6-004:005, 006, 007, 008, 009, 010, 012, (1) 2-6-005:001, 006, (1n) 2-6-008:029

APPLICANT:

**Sea Engineering, Inc. on behalf of State of Hawaii Department of Land and Natural Resources, Office of Conservation and Coastal Lands**

Transmitted for your review and comment is information on the above-referenced subject. The DEA was published on June 08, 2021 in the Office of Environmental Quality Control's periodic bulletin, The Environmental Notice, available at the following link:

[http://oeqc2.doh.hawaii.gov/The\\_Environmental\\_Notice/2021-06-08-TEN.pdf](http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2021-06-08-TEN.pdf)

Please submit any comments by **July 20, 2021** to [DLNR.Land@hawaii.gov](mailto:DLNR.Land@hawaii.gov), and copied to [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly via email at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are attached.

Signed:

Print Name:

Carty S. Chang, Chief Engineer

Division:

Engineering Division

Date:

Jul 13, 2021

Attachments

Cc: Central Files



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

June 17, 2021

LD 0619e

**MEMORANDUM**

TO: **DLNR Agencies:**  
 Div. of Aquatic Resources (via email: kendall.l.tucker@hawaii.gov)  
 Div. of Boating & Ocean Recreation  
 Engineering Division (via email: DLNR.Engr@hawaii.gov)  
 Div. of Forestry & Wildlife (via email: Rubyrosa.T.Terrago@hawaii.gov)  
 Div. of State Parks  
 Commission on Water Resource Management (via email: DLNR.CWRM@hawaii.gov)  
 Office of Conservation & Coastal Lands (via email: sharleen.k.kuba@hawaii.gov)  
 Land Division – Oahu District (via email: DLNR.Land@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: **Draft Programmatic Environmental Impact Statement  
Waikiki Beach Improvement and Maintenance Program**

LOCATION: Honolulu, Island of Oahu, Hawaii; Makai (seaward) of Tax Map Keys: (1) 2-6-001: 002, 004, 003, 008, 012, 013, 015, 017, 018, 019; (1) 2-6-002:005, 006, 017, 026; (1) 2-6-004:005, 006, 007, 008, 009, 010, 012, (1) 2-6-005:001, 006, (1n) 2-6-008:029


APPLICANT: **Sea Engineering, Inc. on behalf of State of Hawaii Department of Land and Natural Resources, Office of Conservation and Coastal Lands**

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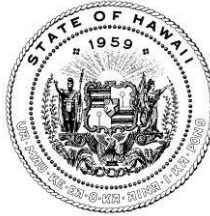
[http://oeqc2.doh.hawaii.gov/The\\_Environmental\\_Notice/2021-06-08-TEN.pdf](http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2021-06-08-TEN.pdf)

Please submit any comments by **July 20, 2021** to [DLNR.Land@hawaii.gov](mailto:DLNR.Land@hawaii.gov), and copied to [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly via email at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are attached.

Signed:   
 Print Name: DAVID G. SMITH, Administrator  
 Division: Division of Forestry and Wildlife  
 Date: Jul 7, 2021

Attachments  
Cc: Central Files



**STATE OF HAWAII**  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

July 6, 2021

**MEMORANDUM**

*Log no. 3202*

**TO:** RUSSEL Y. TSUJI, Administrator  
Land Division

**FROM:** DAVID G. SMITH, Administrator  
Division of Forestry and Wildlife

**SUBJECT: Division of Forestry and Wildlife Comments on the Draft Programmatic Environmental Impact Statement for the Waikiki Beach Improvement and Maintenance Program**

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received the notice for the Draft Programmatic Environmental Impact Statement pertaining to the proposed beach improvement and maintenance at the Fort DeRussy, Halekūlani, Royal Hawaiian, and Kūhiō beach sectors of Waikiki on O‘ahu, Hawai‘i. The proposed project consists of constructing new beach stabilization structures and the recovery of offshore sand and its placement on the shoreline.

The State endangered White Tern (*Gygis alba*) or Manu o Kū has been recorded nesting in and around the proposed project site. If tree trimming or removal is planned, DOFAW strongly recommends surveying for the presence of White Terns prior to any action that could disturb the trees. White Tern pairs lay their single egg in a branch fork with no nest. The eggs and chicks can be easily dislodged by construction equipment that nudges the trees. If a nest is discovered, DOFAW staff should be notified for assistance at (808) 587-0166.

The State listed Hawaiian Hoary Bat or ‘Ōpe‘ape‘a (*Lasiurus cinereus semotus*) has the potential to occur in the vicinity of the proposed project area and may roost in nearby trees. If any site clearing will be required this should be timed to avoid disturbance during the bat birthing and pup rearing season (June 1 through September 15). If this cannot be avoided, woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed prior to consulting DOFAW.

State listed waterbirds such as the Hawaiian Duck (*Anas wyvilliana*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), Hawaiian Coot (*Fulica alai*), and Hawaiian Common Gallinule (*Gallinula chloropus sandvicensis*) have the potential to occur in habitat adjacent to or in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any of these species are present during construction activities, then all activities within 100 feet (30 meters) should cease, and the bird should not be approached. Work may continue after the bird leaves the area of

its own accord. If a nest is discovered at any point, the O‘ahu DOFAW Office should be contacted at (808) 973-9778.

We would like to note that artificial lighting can adversely impact seabirds that may pass through the area at night by causing disorientation. This disorientation can result in collision with manmade structures or grounding of birds. For nighttime lighting that might be required by the proposed project, DOFAW recommends that all lights be fully shielded to minimize impacts. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open ocean. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawai‘i please visit:

<https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf>.

DOFAW recommends minimizing the movement of plant or soil material between worksites, such as in fill. Soil and plant material may contain invasive fungal pathogens, vertebrate and invertebrate pests (e.g. Little Fire Ants, Coconut Rhinoceros Beetles), or invasive plant parts that could harm our native species and ecosystems. We recommend consulting the O‘ahu Invasive Species Committee at (808) 266-7994 in planning, design, and construction of the project to learn of any high-risk invasive species in the area and ways to mitigate spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

We appreciate your efforts to work with our office for the conservation of our native species. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Paul Radley, Protected Species Habitat Conservation Planning Coordinator at (808) 587-0010 or [paul.m.radley@hawaii.gov](mailto:paul.m.radley@hawaii.gov).

Sincerely,



DAVID G. SMITH  
Administrator



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

June 17, 2021

LD 0619e

MEMORANDUM

FR TO:

**DLNR Agencies:**

- Div. of Aquatic Resources (via email: kendall.l.tucker@hawaii.gov)
- Div. of Boating & Ocean Recreation
- Engineering Division (via email: DLNR.Engr@hawaii.gov)
- Div. of Forestry & Wildlife (via email: Rubyrosa.T.Terrago@hawaii.gov)
- Div. of State Parks
- Commission on Water Resource Management (via email: DLNR.CWRM@hawaii.gov)
- Office of Conservation & Coastal Lands (via email: sharleen.k.kuba@hawaii.gov)
- Land Division – Oahu District (via email: DLNR.Land@hawaii.gov)

TO

FROM:  
SUBJECT:

Russell Y. Tsuji, Land Administrator *Russell Tsuji*  
**Draft Programmatic Environmental Impact Statement  
Waikiki Beach Improvement and Maintenance Program**

LOCATION:

Honolulu, Island of Oahu, Hawaii; Makai (seaward) of Tax Map Keys: (1) 2-6-001: 002, 004, 003, 008, 012, 013, 015, 017, 018, 019; (1) 2-6-002:005, 006, 017, 026; (1) 2-6-004:005, 006, 007, 008, 009, 010, 012, (1) 2-6-005:001, 006, (1n) 2-6-008:029

APPLICANT:

**Sea Engineering, Inc. on behalf of State of Hawaii Department of Land and Natural Resources, Office of Conservation and Coastal Lands**

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[http://oeqc2.doh.hawaii.gov/The\\_Environmental\\_Notice/2021-06-08-TEN.pdf](http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2021-06-08-TEN.pdf)

Please submit any comments by **July 20, 2021** to [DLNR.Land@hawaii.gov](mailto:DLNR.Land@hawaii.gov), and copied to [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly via email at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

- ( ) We have no objections.
- (✓) We have no comments.
- ( ) We have no additional comments.
- ( ) Comments are attached.

Signed:

Print Name:

Division:

Date:

*Carol Miyahara*  
\_\_\_\_\_  
Carol MIYAHARA  
\_\_\_\_\_  
LAND  
\_\_\_\_\_  
6/22/21  
\_\_\_\_\_

Attachments

Cc: Central Files

DAVID Y. IGE  
GOVERNOR OF  
HAWAII



LD 0619e  
RECEIVED  
LAND DIVISION

2021 JUN -7 PM 4:12

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
FIRST DEPUTY

M. KALEO MANUEL  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

June 07, 2021

Waikiki Beach DPEIS

SUBJECT: HRS, Chapter 343 Draft Programmatic Environmental Impact Statement (DPEIS)  
Waikiki Beach Improvement and Maintenance Program  
Honolulu District, Island of O'ahu  
Makai (seaward) of Tax Map Keys: (1) 2-6-001: 002, 004, 003, 008, 012, 013, 015, 017,  
018, 019; (1) 2-6-002:005, 006, 017, 026; (1) 2-6-004:005, 006, 007, 008, 009, 010, 012,  
(1) 2-6-005:001, 006, (1) 2-6-008:029

Dear Participant:

On behalf of the Department of Land and Natural Resources, the draft Programmatic Environmental Impact Statement for the Waikiki Beach Improvement and Maintenance Program located at Waikiki Beach, island of O'ahu, is available for review. This draft EIS was prepared pursuant to EIS law (HRS, Chapter 343 and HAR, 11-200.1) as the project involves use of land that lie in the Conservation District, and the utilization of State land and funds.

The 45-day comment period for the draft programmatic EIS will commence on the official notification date as published in *The Environmental Notice*, anticipated to be June 8, 2021. The draft EIS may be viewed at the Department of Health's Office of Environmental Quality Control's (OEQC) website:

[http://oeqc2.doh.hawaii.gov/Doc\\_Library/2021-06-08-OA-DEIS-Waikiki-Beach-Improvement-and-Maintenance-Program.pdf](http://oeqc2.doh.hawaii.gov/Doc_Library/2021-06-08-OA-DEIS-Waikiki-Beach-Improvement-and-Maintenance-Program.pdf)

Any written comments regarding the project must be postmarked by July 23, 2021 by either email or U.S. mail, and can be sent to:

Sea Engineering, Inc.  
Makai Research Pier  
41-305 Kalaniana'ole Hwy.  
Waimānalo, HI 96795  
ATTN: Andy Bohlander

OR

[waikiki@seaengineering.com](mailto:waikiki@seaengineering.com)

For more information regarding this project go to the Office of Conservation and Coastal Lands website at <https://dlnr.hawaii.gov/cccl/waikiki/>.

Sincerely,

*Sam Lemmo*

Sam Lemmo, Administrator  
Office of Conservation and Coastal Lands

Attachments: Project Area Map  
Publication Information



## AGENCY PUBLICATION FORM

Project Name:	Waikiki Beach Improvement and Maintenance Program
Project Short Name:	Waikiki Beach Improvement and Maintenance Program
HRS §343-5 Trigger(s):	Use of state lands - Section 343-5(a)(1) HRS Use of conservation district - Section 343-5(a)(2), HRS
Island(s):	O'ahu
Judicial District(s):	Honolulu
TMK(s):	Seaward of: (1) 2-6-001:003, (1) 2-6-004:007, (1) 2-6-005:001, (1) 2-6-008:029, (1) 2-6-002:026, (1) 2-6-001:019, (1) 2-6-004:012, (1) 2-6-002:017, (1) 2-6-001:013, (1) 2-6-001:012, (1) 2-6-001:002, (1) 2-6-001:015, (1) 2-6-001:008, (1) 2-6-004:006, (1) 2-6-004:005, (1) 2-6-001:017, (1) 2-6-004:008, (1) 2-6-004:009, (1) 2-6-004:010, (1) 2-6-001:018, (1) 2-6-005:006, (1) 2-6-001:004, (1) 2-6-002:006, (1) 2-6-002:005
Permit(s)/Approval(s):	Conservation District Use Permit Clear Water Act Section 401 Water Quality Certification Coastal Zone Management Act Consistency Determination Department of the Army Permit (Section 10 and Section 404) Special Management Area Permit
Proposing/Determining Agency:	Department of Land and Natural Resources
<i>Contact Name, Email, Telephone, Address</i>	Samuel Lemmo, Administrator sam.j.lemmo@hawaii.gov (808) 587-0377 1151 Punchbowl St., Room 131 Honolulu, HI 96813
Accepting Authority:	Governor, State of Hawaii
<i>Contact Name, Email, Telephone, Address</i>	The Honorable David Y. Ige, Governor (808) 586-0034 <a href="http://governor.hawaii.gov/contact-us/contact-the-governor/">http://governor.hawaii.gov/contact-us/contact-the-governor/</a> Executive Chambers State Capitol 415 South Beretania St. Honolulu, HI 96813
Consultant:	Sea Engineering, Inc.
<i>Contact Name, Email, Telephone, Address</i>	David Smith, PhD, PE waikiki@seaengineering.com (808) 259-7966 ext. 30 41-305 Kalaniana'ole Highway Waimānalo, HI 96795

**Status (select one)**

DEA-AFNSI

**Submittal Requirements**

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.

FEA-FONSI

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.

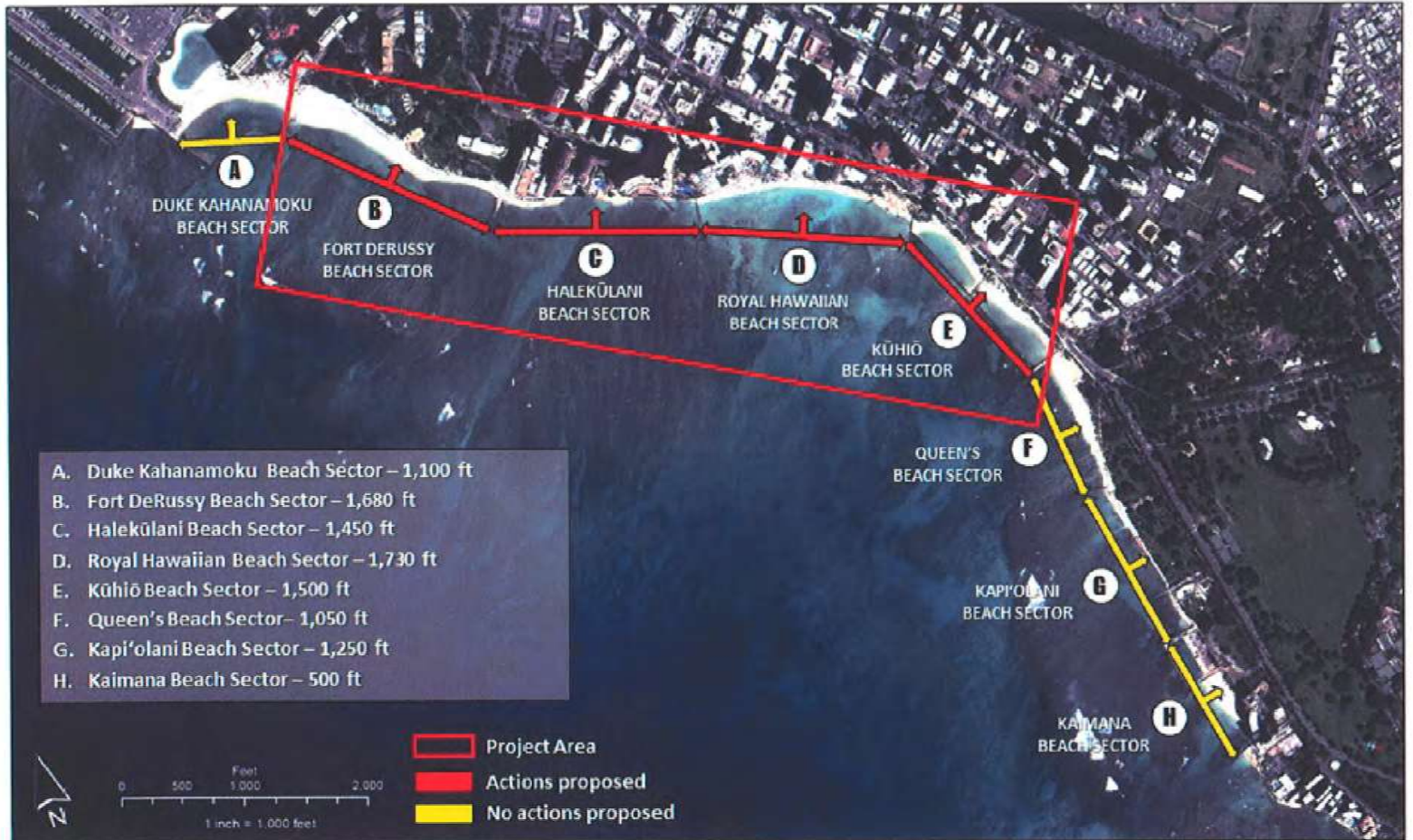
FEA-EISPN

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.

- Act 172-12 EISPN ("Direct to EIS") Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.
- DEIS Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.
- FEIS Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
- FEIS Acceptance Determination The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.
- FEIS Statutory Acceptance Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
- Supplemental EIS Determination The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
- Withdrawal Identify the specific document(s) to withdraw and explain in the project summary section.
- Other Contact the OEQC if your action is not one of the above items.

**Project Summary**

The Hawai'i Department of Land and Natural Resources proposes beach improvement and maintenance projects in the Fort DeRussy, Halekūlani, Royal Hawaiian, and Kūhiō beach sectors of Waikīkī. Projects would include the construction of new beach stabilization structures, and the recovery of offshore sand and its placement on the shoreline. The objectives of the proposed actions are to restore and improve Waikīkī's public beaches, increase beach stability through improvement and maintenance of shoreline structures, provide safe access to and along the shoreline, and increase resilience to coastal hazards and sea level rise.



**PROJECT AREA**

Waikiki Beach Improvement and Maintenance Program  
 Draft Programmatic Environmental Impact Statement  
 Honolulu, O'ahu, Hawai'i

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
OFFICE OF CONSERVATION AND COASTAL LANDS  
P.O. BOX 621  
HONOLULU, HAWAII 96809

DAWN N.S. CHANG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
RYAN K.P. KANAKA'OLE  
FIRST DEPUTY  
DEAN D. UYENO  
ACTING DEPUTY DIRECTOR - WATER  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Russell Y. Tsuji, Land Administrator  
Hawai'i Department of Land and Natural Resources  
Land Division  
Post Office Box 621  
Honolulu, HI 96809

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Russell Tsuji:

Thank you for your letter dated July 20, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions from the (a) Engineering Division and (b) Division of Forestry and Wildlife, and (c) Land Division, Oahu District. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comments: The State endangered White Tern (*Gygis alba*) has been recorded nesting in and around the proposed project site. If tree trimming or removal is planned, DOFAW strongly recommends surveying for the presence of White Terns prior to any action that could disturb the trees. White Tern pairs lay their single egg in a branch fork with no nest. The eggs and chicks can be easily dislodged by construction equipment that nudges the trees. If a nest is discovered, DOFAW staff should be notified for assistance at (808) 587-0166.

The State listed Hawaiian Hoary Bat or 'Ōpe'ape'a (*Lasiurus cinereus semotus*) has the potential to occur in the vicinity of the proposed project area and may roost in nearby trees. If any site clearing will be required, this should be timed to avoid disturbance during the bat birthing and pup rearing season (June 1 through September 15). If this cannot be avoided, woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed prior to consulting DOFAW.

State listed waterbirds such as the Hawaiian Duck (*Anas wyvilliana*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), Hawaiian Coot (*Fulica alai*), and Hawaiian Common Gallinule (*Gallinula chloropus sandvicensis*) have the potential to occur in habitat adjacent to or in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any of these species are present during construction activities, then all activities

within 100 feet (30 meters) should cease, and the bird should not be approached. Work may continue after the bird leaves the area of its own accord. If a nest is discovered at any point, the DOFAW Office should be contacted at (808) 973-9778.

Response: We acknowledge the potential for rare, endangered, or threatened species to be present in the vicinity of the project site. A detailed Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective environmental protection and avoidance measures during construction. The BMPP will also include instructions for the Contractor to immediately contact DOFAW in the event that any of the aforementioned species are encountered during construction.

Comment: We would like to note that artificial lighting can adversely impact seabirds that may pass through the area at night by causing disorientation. This disorientation can result in collision with manmade structures or grounding of birds. For nighttime lighting that might be required by the proposed project, DOFAW recommends that all lights be fully shielded to minimize impacts. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open ocean.

Response: We acknowledge the potential for artificial lighting to adversely impact seabirds. As with previous beach improvement projects in Waikīkī, all work will be limited to daylight hours (e.g., 7:30 a.m. to 4:30 p.m.), so no artificial lighting is proposed.

Comment: DOFAW recommends minimizing the movement of plant or soil material between worksites, such as in fill. Soil and plant material may contain invasive fungal pathogens, vertebrate and invertebrate pests (e.g. Little Fire Ants, Coconut Rhinoceros Beetles), or invasive plant parts that could harm our native species and ecosystems. We recommend consulting the Invasive Species Committee at (808) 266-7994 in planning, design, and construction of the project to learn of any high-risk invasive species in the area and ways to mitigate spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

Response: We acknowledge the potential impacts associated with the spreading of invasive species. A detailed Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective cleaning protocols for equipment, materials, and personnel to minimize the risk of spreading invasive species.

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** David Smith  
**Sent:** Tuesday, July 20, 2021 10:06 PM  
**To:** Waikiki  
**Subject:** FW: Comments to the DPEIS Waikiki Beach Improvement and Maintenance Program  
**Attachments:** Waikiki-beach-improvements DPEIS-KHR comment letter\_071921.pdf

---

**From:** Michael Takayama <mtakayama@kyo-yaco.com>  
**Sent:** Tuesday, July 20, 2021 7:53 AM  
**To:** David Smith <dsmith@seaengineering.com>; 'Lemmo, Sam J' <sam.j.lemmo@hawaii.gov>  
**Cc:** 'Cyrus Oda' <coda@kyo-yaco.com>; 'Nobutada Nagai' <nobunaga@kyo-yaco.com>; 'Kashiwa, Peter T.' <pkashiwa@goodsill.com>; 'Yasuhiko Ishikawa' <yishikaw@kyo-yaco.com>; 'Jason Ito' <jason.ito@kyo-yaco.com>; lee.nakahara@kyo-yaco.com; 'Julie Nakayama' <jnakayama@kyo-yaco.com>; 'Bail, Lisa A.' <lbail@goodsill.com>; 'Zane, Dale E.' <dzane@goodsill.com>  
**Subject:** Comments to the DPEIS Waikiki Beach Improvement and Maintenance Program

Aloha Mr. David Smith and Mr. Sam Lemmo

On behalf of Kyo-ya Hotels & Resorts, LP, please find our comments in response to the 6/8/21 publication of the DPEIS Waikiki Beach Improvement and Maintenance Program.  
A hard copy of the letter will be mailed out today as well.

Please feel free to contact me should you have any questions.

Mahalo

Mike Takayama

---

**Michael Takayama**  
Director of Real Estate  
Kyoya Management Company, Ltd.  
Sheraton Waikiki  
2255 Kalakaua Avenue, 2F  
Honolulu, HI 96815  
direct: 808.931.8621  
mobile: 808.271.0656  
fax: 808.931.8667

---

  
[www.collectionsofwaikiki.com](http://www.collectionsofwaikiki.com)



July 19, 2021

**TO:**

David A. Smith, PhD, PE  
[dsmith@seaengineering.com](mailto:dsmith@seaengineering.com)  
Sea Engineering, Inc.  
41-305 Kalanianaʻole Highway  
Waimanalo, HI 96795

**FROM:**

Cyrus I. Oda  
[coda@kyo-yaco.com](mailto:coda@kyo-yaco.com)  
Kyo-ya Hotels & Resorts, LP  
2255 Kalakaua Ave.  
Honolulu, HI 96815

**SUBJECT:** Draft Programmatic Environmental Impact Statement (“DPEIS”) for the Waikīkī Beach Improvement and Maintenance Program. Waikīkī Beach, Oahu

Kyo-ya Hotels & Resorts, LP **supports in concept** the beach improvement program proposed by the Hawai‘i Department of Land and Natural Resources (“**DLNR**”) and outlined in the DPEIS.

As a family-owned company, Kyo-ya Hotels & Resorts, LP has been doing business in Hawaii since 1961. We are the steward of five major hotel properties in Hawaii- **Sheraton Waikiki Hotel, The Royal Hawaiian Hotel, Moana Surfrider Hotel, Sheraton Princess Kaiulani Hotel, and Sheraton Maui Hotel.**

Over the past several years, and as recently as November of 2020, Waikīkī has experienced record high tides (“**King Tides**”) that have exacerbated erosion and flooding. These events have highlighted the impacts of sea level rise on the beaches of Waikīkī. As sea levels continue to rise, beach loss will progressively degrade the recreational, social, cultural, environmental, aesthetic, and economic value of Waikīkī. After nearly 50 years without new beach stabilization projects in Waikīkī, we are now at a crossroads with a clear and increasingly urgent need to implement maintenance and improvements to preserve and protect the shoreline.

We are encouraged by the DLNR’s desire to address chronic erosion, flooding, limited lateral shoreline access, and other public health and safety problems impacting Waikīkī Beach. The proposed long term and comprehensive solution aids the survival and resilience of Waikīkī Beach into the future. We are also encouraged by DLNR’s willingness to collaborate with the community stakeholders through the Waikiki Beach Special Improvement District Association (“**WBSIDA**”)



and Waikiki Beach Community Advisory Committee (“**WBCAC**”). Collaboration at this early stage in the planning process identifies and establishes the program’s priorities and objectives, and guides the development of the proposed beach improvement and maintenance actions.

We support this improvement program in concept and recognize its urgency. With the combination of beach erosion and King Tides, the backshore is frequently flooded, particularly during high surf events, accelerating damage to backshore infrastructure. Without beach improvements and maintenance, sea level rise is likely to result in total beach loss in Waikīkī before the end of the century and result in an estimated economic loss of \$50 million to \$150 million per hectare.<sup>1</sup> The loss of Waikīkī Beach alone would result in an annual loss of \$2.223 billion in visitor expenditures.<sup>1</sup> Improvements and maintenance proposed in the DPEIS is necessary to restore and maintain the beaches of Waikīkī to continue to support Hawaii’s economy.

We offer the following summary of project-specific comments in response to the published DPEIS for the Waikīkī Beach Improvement and Maintenance Program.

1. 1928 Waikīkī Beach Reclamation Agreement

In its discussion of the 1928 Waikīkī Beach Reclamation Agreement, Section 2.1 on pages 6-7 of the DPEIS states (and Section 9.1.3 on page 230 of the DPEIS is substantially the same),

*The agreement provided that the Territory of Hawai‘i would build a beach seaward from the **existing high water mark** and that title of the newly created beach would be vested by the abutting landowners. The Territory of Hawai‘i and private landowners further agreed that no new structures would be built on the beach in Waikīkī. The private landowners agreed to provide a 75-foot-wide public easement along the beach measured from the **new mean high water mark**. (Emphasis added.)*

To eliminate ambiguity, we request that references to the high water mark in connection with the 1928 Waikīkī Beach Reclamation Agreement be clarified. The reference to the “**existing high water mark**” should be changed to the “**then-existing mean high water mark**” and the reference to the “**new mean high water mark**” should be changed to the “**then-existing mean high water mark**” which is defined in metes and bounds in Exhibit A to the 1928 Waikīkī Beach Reclamation Agreement.

2. Access Path

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<sup>1</sup> Tarui, N., Peng, M., Eversole, D. (2018). *Economic Impact Analysis of the Potential Erosion of Waikīkī Beach*. University of Hawai‘i Sea Grant College Program. April 2018.

Section 9.4.3 on page 276 of the DPEIS states, “One respondent noted that pole fishermen after *ulua* come to the beach late in the afternoon to cast, when most sunbathers and swimmers have left. Pole and occasionally spear fishermen usually access the area from **the public right-of-way** to Gray’s Beach between the Sheraton Waikiki Hotel and the Halekūlani Hotel.” (Emphasis added.)

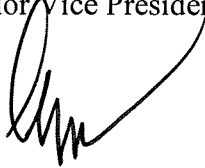
Please be advised that there is no easement for public access between the Halekulani Hotel and Sheraton Waikiki Hotel. To eliminate confusion, we request that future references to this pathway describe “a privately owned pathway where access by the public is presently allowed.”

3. Without a stabilizing and energy-buffering beach to protect public and private coastal infrastructure, we anticipate even larger and more expensive structural repair and improvement projects to be required soon to prevent the destruction of threatened coastal structures.

Thank you for the opportunity to provide comments on this important project. Again, Kyo-ya Hotels & Resorts, LP **supports in concept** the beach improvement program proposed by the DLNR and outlined in the DPEIS.

Sincerely

Cyrus I. Oda  
Senior Vice President and Treasurer

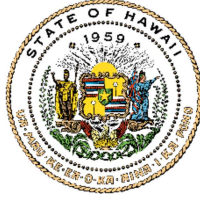


Copy via mail:

Sam Lemmo, Administrator  
[Sam.j.lemmo@hawaii.gov](mailto:Sam.j.lemmo@hawaii.gov)  
DLN- Office of Conservation and Coastal Lands  
Department of Land and Natural Resources, State of Hawaii  
1151 Punchbowl Street, Room 131  
Honolulu, Hawaii 96813

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
OFFICE OF CONSERVATION AND COASTAL LANDS  
P.O. BOX 621  
HONOLULU, HAWAII 96809

DAWN N.S. CHANG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
RYAN K.P. KANAKA'OLE  
FIRST DEPUTY  
DEAN D. UYENO  
ACTING DEPUTY DIRECTOR - WATER  
AQUATIC RESOURCES  
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FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Chris I. Oda, Senior Vice President and Treasurer  
Kyo-ya Hotels & Resorts, LP  
2255 Kalākaua Ave.  
Honolulu, HI 96815

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Chris Oda:

Thank you for your letter dated July 19, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: “1928 Waikīkī Beach Reclamation Agreement: In its discussion of the 1928 Waikīkī Beach Reclamation Agreement, Section 1.1 on page 11 of the EISPN states (and Section 7.1 on page 102 of the EISPN is substantially the same),

*The agreement provided by the Territory of Hawai'i would build a beach seaward from the **existing high water mark** and that title of the newly created beach would be vested by the abutting landowners. The Territory of Hawai'i and private landowners further agreed that no new structures would be built on the beach in Waikiki. The private landowners agreed to provide a 75-foot-wide public easement along the beach measured from the **new mean high water mark**. (Emphasis added.)*

To eliminate ambiguity, we request that references to the high water mark in connection with the 1928 Waikīkī Beach Reclamation Agreement be clarified. The reference to the “**existing high water mark**” should be changed to the “**then-existing high water mark**” and reference to the “**new mean high water mark**” should be changed to “**then-existing mean high water mark**” which is defined in metes and bounds in Exhibit A to the 1928 Waikīkī Beach Reclamation Agreement.”

Response: With beach restoration, the high-water mark will move makai to a new mean high water mark. The 1928 Waikīkī Beach Reclamation Agreement conveying (vesting ownership) in beach areas to abutting private properties down to the **Mean High Water Mark**, reserving a 75 foot wide public easement from the **Mean High Water Mark** inland

for the public. Act 273 (1928) states “Whereby the general public shall be assured of the right to use such portion of any beach built as lies within seventy-five (75) feet shoreward of the mean high-water mark.” The project it not expected to create a beach that will exceed 75-feet.

Comment: Section 9.4.3 on page 276 of the DPEIS states , “One respondent noted that pole fishermen after ulua come to the beach late in the afternoon to cast, when most sunbathers and swimmers have left. Pole and occasionally spear fishermen usually access the area from the public right-of-way to Gray’s Beach between the Sheraton Waikiki Hotel and the Halekūlani Hotel.” (emphasis added.) Please be advised that there is no easement for public access between the Halekūlani Hotel and Sheraton Waikiki Hotel. To eliminate confusion, we request that future references to this pathway describe “a privately-owned pathway where access by the public is presently allowed.”

Response: We appreciate clarification of the ownership status of the existing walkway. Per your request, all references to the subject walkway have been corrected accordingly and are now referred to as “a privately owned pathway where access by the public is presently allowed.”

Comment: Without a stabilizing and energy-buffering beach to protect public and private coastal infrastructure, we anticipate even larger and more expensive structural repair and improvement projects to be required soon to prevent the destruction of threatened coastal structures.

Response: We understand your concerns regarding potential impacts to public and private coastal infrastructure. While protection of infrastructure is not a primary objective of the Program, we anticipate that the proposed action will produce a wider and more stable beach that will provide a natural buffer to decrease exposure to coastal hazards.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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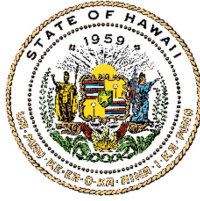
**From:** kawelamorgan <kawelamorgan@gmail.com>  
**Sent:** Thursday, July 22, 2021 6:26 AM  
**To:** Waikiki  
**Subject:** Shoreline plan

Three new 200 foot long T head groins and converting others is a terrible choice for this time and place. Hardening coastlines in time of climate change is not a sensible solution. The office of conservation and costal lands has wrongly changed their mind. The DLNR is opposed to this and so are many ocean going residents. Stop this project!!  
Morgan Dorr

Sent from my Verizon, Samsung Galaxy smartphone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

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BOATING AND OCEAN RECREATION  
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ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Morgan Dorr  
[kawelamorgan@gmail.com](mailto:kawelamorgan@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Morgan Dorr:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

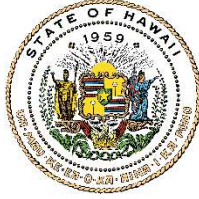
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
Office of Conservation and Coastal Lands  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Morgan Dorr  
[kawelamorgan@gmail.com](mailto:kawelamorgan@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Morgan Dorr:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: Three new 200 foot long T head groins and converting others is a terrible choice for this time and place. Hardening coastlines in time of climate change is not a sensible solution. The office of conservation and costal lands has wrongly changed their mind. The DLNR is opposed to this and so are many ocean going residents.

Response: There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to

maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai'i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are "squeezed" between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as "flanking erosion," is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as "downdrift erosion," can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete "sectors" that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.



Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

**From:** [akr9](#)  
**To:** [Waikiki; "alethea@mitsuyamaandrebman.com"](mailto:alethea@mitsuyamaandrebman.com)  
**Subject:** Draft EIS comment - opposition to Waikiki Program  
**Date:** Thursday, July 22, 2021 6:57:40 AM

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To Whom It May Concern:

I write in opposition to the Waikiki Beach Improvement and Maintenance Program proposal.

Although I have many thoughts on this, today's Op-Ed by Keone Downing said everything much better than I could.

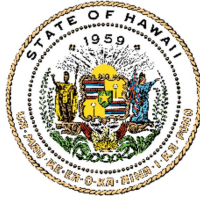
<https://www.staradvertiser.com/2021/07/22/editorial/island-voices/column-hawaiis-ocean-users-must-beware-waikiki-shoreline-plan/>

Please register my opposition to this plan.

Regards,  
Alethea Rebman

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
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**DAWN N.S. CHANG**  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Alethea Rebman  
[akr9@hawaii.rr.com](mailto:akr9@hawaii.rr.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Alethea Rebman:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** bsdcnnew@aol.com  
**Sent:** Thursday, July 22, 2021 10:34 AM  
**To:** Waikiki  
**Cc:** shockleyjr@gmail.com; eartoeargrin@gmail.com  
**Subject:** Fwd: LIVE NOTE: For those who don't subscribe to the Hon. Star-Advertiser, an important op/ed by water-man and activist, Keone Downing

|  
To the DNLR:

I totally agree with Keone Downing and John and Rita Shockley. See below.

Use that money to ensure that all citizens of Oahu benefit from improvements to the beaches. And not all be used for the Waikiki beaches and big-monied resorts which are unaffordable to the average citizens of Oahu.

We have visited Hawaii several times and want to see those remote (and free) beaches protected.

Protection from rising sea levels should include ALL beaches, not just the tourist beaches and the resorts which average Hawaiians cannot afford. I saw nothing saying that the new 3.8 acre beach extension will be available to all Hawaiians!

Please protect the people of Hawaii, not just tourist hotels and huge resorts.

Art Silver  
Newport News, VA

-----Original Message-----

From: John Shockley <shockleyjr@gmail.com>

Sent: Thu, Jul 22, 2021 3:46 pm

Subject: LIVE NOTE: For those who don't subscribe to the Hon. Star-Advertiser, an important op/ed by water-man and activist, Keone Downing

**From wherever you are, you can e-mail the DLNR(Dept. of Land & Natural Resources) and the Waikiki project people(listed at the bottom of the editorial) with your opinion. We all pay taxes for the good of all of us—not just special interests who have money and influence with government.**

j&r

**Hawaii's Ocean Users Must Beware Waikiki Shoreline Plan**  
ISLAND VOICES  
By Keone Downing

The public has until Friday to comment on a draft environmental impact statement for a \$12 million Waikiki Beach Improvement and Maintenance Program for the shoreline from the Kapahulu Groin to Fort DeRussy Beach. Proposed by the state Department of Land and Natural Resources (DLNR) in partnership with the Waikiki Beach Special Improvement District Association (WBSIDA), it seeks to build three, 200-foot-long, T-head groins and a 3.8-acre beach extending out from the sea wall at the Halekulani Resort, and to convert the Royal Hawaiian and Fort DeRussy groins into T-heads. The state claims five T-head groins are needed to extend the life of the proposed new beach by trapping and slowing the erosion of its sands. Yet its plan contradicts what DLNR and Sam Lemmo, administrator of its Office of Conservation and Coastal Lands (OCCL), have been saying for years. They have been against the armoring of our shorelines and have stopped many private home owners from doing so, because they say it increases erosion of Hawaii's beaches and the islands' vulnerability to sea level rise due to climate change. Now Mr. Lemmo talks about how these Waikiki projects will protect against sand erosion and sea level rise. The fact is, sand erosion will always happen as nature reclaims its shoreline, and sea level rise will happen inland under the grounds of Waikiki as the water table rises, which will be more devastating than water coming from seaward. But DLNR, OCCL and WBSIDA don't talk about that. They say Waikiki is manmade so it's OK to do these projects. If man created this, then maybe now man should step aside and rethink the mess they have made and not keep making the same mistakes. They also try to scare us by saying if all the sand is lost in Waikiki we would lose \$2.23 billion in revenue. But thanks to natural sand migration patterns, Waikiki has never lost all its sand. While using taxpayer money, this plan does not even include nourishing Duke Kahanamoku Beach or the Diamond Head side of Kapahulu groin, two spots heavily used by locals due to accessibility to parking and restrooms. The state also plans T-head groins and sand-filling for Maui. Neither of these projects will stop sand erosion or sea level rise.

In fact, DLNR's latest project, a bigger Royal Hawaiian Groin, completed in August, made the new wall so big it stopped the lateral flow of sand, causing the beach at the Outrigger Reef Hotel beach to not regain its seasonal fill of sand. By changing water flow patterns, currents and sand movement, these groins will rob sand at the ends of the first and last groins. These are seawalls with gaps in them, and will stick out 180 feet into the surf, covering our reefs with sand and endangering our honu habitat in front of the Sheraton Hotel. These groins will create temporary beaches for hotel guests and beach services, all at taxpayers' expense. These beaches will not be community friendly, having no nearby public parking or restrooms, yet the public will bear the financial burden. OCCL has been pushing this concept for more than 10 years. It has filled Waikiki's beaches with so much sand that as nature reclaims the shoreline, the sands fill our reefs, changing the way our waves break, and not for the good. This plan's only objective is taking care of tourism and adding value to the hotels these areas front. We, the ocean users, must now be heard before more rocks are thrown into our beloved shorelines. We must help each other by speaking out, even if it is not in our area, because it could be in your area before you know it.

Read the report: The draft environmental impact statement is online at [808ne.ws/3hSQjmf](http://808ne.ws/3hSQjmf) and at the Waikiki-Kapahulu library; comments can be emailed to [waikiki@seaengineering.com](mailto:waikiki@seaengineering.com) through Friday.

### **This is what we wrote to the project developers:**

**Aloha!**

**The editorial by Keone Downing in the Hon. Star-Advertiser, 7/22/2021, is an eye-opener and warning of the kind of damage the tourist hotels are doing to Waikiki Beach. The tax-payers are asked to fund projects that only benefit the tourist business, often at the expense of the local tax-payers themselves! This general plan to save sand in front of hotels has large implications for the environment including wild life, reef destruction, and surf patterns. The DLNR needs to heed environmental concerns that the artificial rock structures will damage the shoreline at the expense of short-term gains for the hotels.**

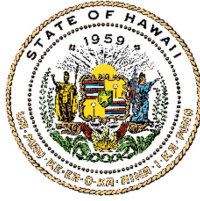
**We understand the power of money and the influence it has on government. There is a higher calling that government needs to consider before plowing ahead with projects like the T-groins. We hope you will act responsibly for all the people of Hawaii—not just the special Waikiki hotel interests.**

**Mahalo for your time and hopefully for your Kokua!**

**John & Rita Shockley. Coordinators: Free Access Coalition. [www.freeaccesscoalition.weebly.com](http://www.freeaccesscoalition.weebly.com)**

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
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AQUATIC RESOURCES  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Art Silver  
[bsdcnnew@aol.com](mailto:bsdcnnew@aol.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Art Silver:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: Use that money to ensure that all citizens of Oahu benefit from improvements to the beaches. And not all be used for the Waikiki beaches and big-monied resorts which are unaffordable to the average citizens of Oahu. We have visited Hawaii several times and want to see those remote (and free) beaches protected. Protection from rising sea levels should include ALL beaches, not just the tourist beaches and the resorts which average Hawaiians cannot afford. I saw nothing saying that the new 3.8 acre beach extension will be available to all Hawaiians! Please protect the people of Hawaii, not just tourist hotels and huge resorts.

Response: The DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Waikīkī is a critical component of Hawaii's tourism-based economy. The Waikīkī economy generates jobs and tax revenue that benefit everyone in the State of Hawai'i. The beach and its culture are major amenities that help maintain O'ahu and Waikīkī as an attractive destination to both visitors and residents. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on all citizens of the State of Hawai'i.

Selection of the proposed beach improvement and maintenance actions was a primarily stakeholder-driven process. The design process relied heavily on feedback and

direction from the Waikīkī Beach Community Advisory Committee (WBCAC) to identify issues, needs, priorities, and design criteria for each beach sector. The sectors that were selected for beach improvement and maintenance actions were identified as the highest priorities by the WBCAC. While the other beach sectors were not identified as high priorities by the WBCAC, these areas of Waikīkī are clearly important and we recognize that, as sea levels continue to rise, beach improvements and/or maintenance may be required in these beach sectors in the future.

For additional information about the program scope and rationale, please see the following section of the FPEIS:

- Section 2

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikiki Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikiki stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikiki, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Section 2.4
- Section 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.



Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Spencer Reemelin <reemelin@hawaii.edu>  
**Sent:** Thursday, July 22, 2021 11:26 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Aloha,

I am against altering the coastline with pumping more sand and building groins along Waikiki. I understand that we do not not want to lose future tourist dollars; however, the ocean will win, and this is a fork in road moment to embrace new forms of tourism, i.e. ecotourism. Imagine having fewer but quality tourists who want to get involved with the environment and the local culture. The first step is to begin retreating from the Waikiki coastline area. If we put up these groins and pump sand we will be gifting this lovely nightmare to the next generation. With this ridiculous plan the tourists' idea of Hawaii will be a farce and short lived. All the while locals will pay for it and lose sand at their nearby beaches. The overarching hubris of these shortsighted plans highlights the greed and stupidity of our sleeping and sold out leadership.

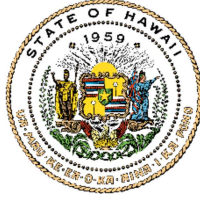
Please wake up! Please do the right thing!

Mahalo,

Espe

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
OFFICE OF CONSERVATION AND COASTAL LANDS  
P.O. BOX 621  
HONOLULU, HAWAII 96809**

**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
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**RYAN K.P. KANAKA'OLE**  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Spencer Reemelin  
[reemelin@hawaii.edu](mailto:reemelin@hawaii.edu)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Spencer Reemelin:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
Office of Conservation and Coastal Lands  
P.O. BOX 621  
HONOLULU, HAWAII 96809

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FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Spencer Reemelin  
[reemelin@hawaii.edu](mailto:reemelin@hawaii.edu)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Spencer Reemelin:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I am against altering the coastline with pumping more sand and building groins along Waikiki. The first step is to begin retreating from the Waikiki coastline area.

Response: A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai'i from fulfilling its responsibility for overseeing beaches and submerged lands out to the seaward extent of the State's jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as

managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

Many beach management actions are considered mid-term solutions that are intended to manage and preserve coastal resources while other potential long-term solutions are investigated and implemented. While beach management strategies may not address the entire spectrum of issues and needs that are related to sea level rise adaptation, they provide a means to: manage and mitigate the impacts of erosion; protect, conserve, and enhance our beaches; maintain the economic viability of visitor destinations; and buy much-needed time to determine what managed retreat may consist of in Waikīkī and how it could potentially be accomplished. At a minimum, this will require collaboration with a much broader spectrum of public and private stakeholders and community members, as well as a level of capital investment that far exceeds that which is required to implement the proposed program.

Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, it is clear that sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area makai (seaward) of the certified shoreline, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Chantal Lactaoen <clactaoen@starnlaw.com>  
**Sent:** Thursday, July 22, 2021 11:27 AM  
**To:** Waikiki  
**Cc:** senmoriwaki@capitol.hawaii.gov; tommy.waters@honolulu.gov; Duane Fisher; Elaine Meguro  
**Subject:** HRS, Chapter 343 Draft Programmatic Environmental Impact Statement  
**Attachments:** 07.22.21 Letter to Sea Engineering, Inc. re HRS, Chapter 343 (DPEIS).PDF

Aloha Mr. Bohlander~

Duane Fisher asked that I forward the attached letter to you.....original will be mailed today.

If you have any questions, please call Duane.

*Mahalo,  
Chantal Lactaoen  
Billing Coordinator*

Starn O'Toole Marcus & Fisher  
A Law Corporation  
Pacific Guardian Center, Makai Tower  
733 Bishop Street, Suite 1900  
Honolulu, HI 96813  
Email: [CLactaoen@starnlaw.com](mailto:CLactaoen@starnlaw.com)  
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Facsimile: (808) 537-5434  
Website: [www.starnlaw.com](http://www.starnlaw.com)

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# STARN • O'TOOLE • MARCUS & FISHER

A LAW CORPORATION

July 22, 2021

**VIA USPS AND EMAIL: (waikiki@seaengineering.com)**

Sea Engineering, Inc.  
Makai Research Pier  
41-305 Kalaniana'ole Highway  
Waimanalo, Hawaii 96795  
ATTN: Andy Bohlander

Re: HRS, Chapter 343 Draft Programmatic Environmental Impact Statement (DPEIS)  
Waikiki Beach Improvement and Maintenance Program  
Honolulu District, Island of O'ahu  
Makai (seaward) of Tax Map Keys: (1) 2-6-001: 002, 004, 003, 008, 012, 013,  
015, 017, 018, 019; (1) 2-6-002:005, 006, 017, 026; (1) 2-6-004:005, 006, 007,  
008, 009, 010, 012; (1) 2-6-005:001, 006; (1) 2-6-008:029

Dear Mr. Bohlander:

We represent Park Hotels & Resorts (“**Park**”), the owner (through its subsidiary, Hilton Hawaiian Village LLC) of the Hilton Hawaiian Village in Waikiki (“**HHV**”). We write to provide our comments to the Draft Programmatic Environmental Impact Statement for the Waikiki Beach Improvement and Maintenance Program (the “**Program**”) published in *The Environmental Notice* on June 8, 2021 (the “**DPEIS**”).

## INTRODUCTION

As an initial matter, we commend the Department of Land and Natural Resources, Office of Coastal and Conservation Lands and the Waikiki Beach Special Improvement District Association for their work in seeking to preserve and protect Waikiki Beach from the effects of coastal erosion and sea level rise. As the DPEIS recognizes, Waikiki Beach is an extremely important public resource that is vital to the recreational, social, cultural, environmental, aesthetic and economic well-being of Oahu, and the State of Hawaii as a whole.

Park strongly agrees that the Program is an essential undertaking. However, Park is troubled and surprised that Duke Kahanamoku Beach, which fronts HHV, was not included within the scope of the Program. Duke Kahanamoku Beach is experiencing severe erosion, and is already extremely vulnerable to King Tide events. The omission of Duke Kahanamoku Beach from the Program is especially troubling in light of the State's existing obligation to “permanently maintain” Duke Kahanamoku Beach. In addition, the Program's proposed “sand backpassing” at the Fort DeRussy Beach Sector (which is immediately adjacent on the east side of the Duke Kahanamoku Beach Sector), raises a number of questions and issues that are not adequately addressed by the DPEIS. This letter describes Park's concerns in more detail below.

Pacific Guardian Center, Makai Tower • 733 Bishop Street, Suite 1900 • Honolulu, Hawaii 96813

Telephone: (808) 537-6100 • Fax: (808) 537-5434 • Web: [www.starnlaw.com](http://www.starnlaw.com)



## SPECIFIC CONCERNS WITH THE DPEIS AND PROGRAM

1. The Duke Kahanamoku Beach Sector is Omitted from the Program but should be Included. The Program proposes beach improvement and maintenance work on four beach sectors: Fort DeRussy Beach Sector, Halekulani Beach Sector, Royal Hawaiian Beach Sector and Kuhio Beach Sector. See Figure 1 below. These four beach sectors (i.e., Sectors B, C, D and E) all front hotels and other development on Waikiki Beach. Strikingly, Duke Kahanamoku Beach Sector (sector A in Figure 1) is the *only* beach sector fronting a Waikiki hotel that was omitted from the Program. The reasons for selecting only four beach sectors for inclusion in the Program are not explained. Nor is it explained why the Program omits only Duke Kahanamoku Beach from the beach sectors fronting significant development that were selected for remediation.

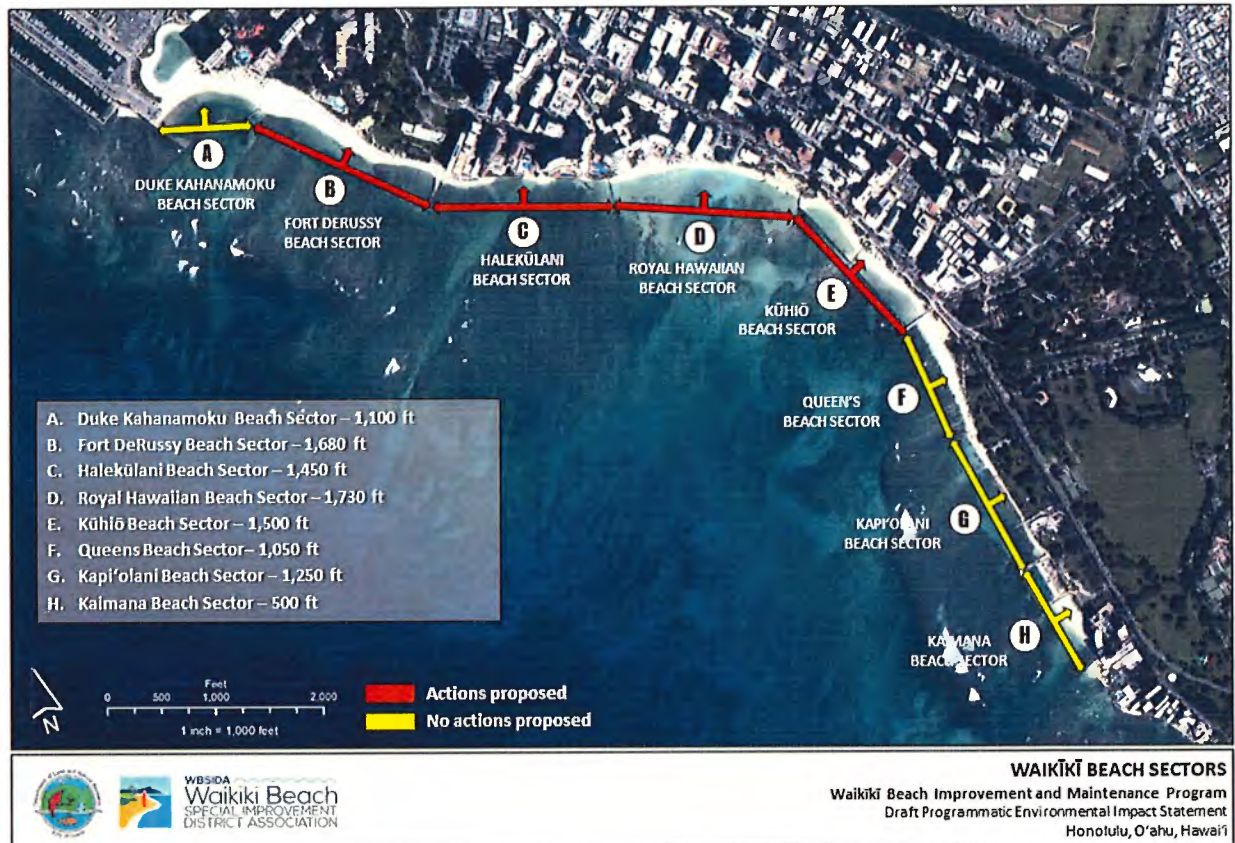


Figure 1 – Waikiki Beach Sectors – Image from DPEIS

The omission of Duke Kahanamoku Beach is especially problematic because the beach is already experiencing significant erosion and depletion of sand, and the existing sand is quite hard

and compacted. To illustrate, approximately five years ago, USA Volleyball wanted to have a professional beach volleyball event at Duke Kahanamoku Beach (with consequent economic benefits to Waikiki and the State). After inspecting the beach, however, USA Volleyball indicated that the sand was too compacted for play to occur. Together, USA Volleyball and Waikiki Beach Activities (HHV's managing agent for HHV's activities on the beach), brought approximately 20 tons of sand from the North Shore of Oahu and spread it on the beach in order to deepen and soften the sand to allow the volleyball tournament to take place. The tournament was held and was quite successful. Now, however, some five years later, the additional sand that was added to the beach for the volleyball event is largely gone, having been blown by wind into the ocean, or swept from the beach during King Tide events.

Indeed, King Tide events, which are occurring more frequently, are of particular concern in the Duke Kahanamoku Beach Sector. During especially high King Tides, the sea water sometimes encroaches so far onto the beach that the water actually breaches the sand berm and runs into the Duke Kahanamoku Lagoon. The images in *Figure 2*, *Figure 3* and *Figure 4* below show the ocean water encroaching onto Duke Kahanamoku Beach and into the Duke Kahanamoku Lagoon at a King Tide event on August 6, 2018.



*Figure 2 – King Tide at Duke Kahanamoku Beach August 6, 2018*



*Figure 3 – King Tide encroaching into Duke Kahanamoku Lagoon – August 6, 2018*



*Figure 4 – King Tide at Duke Kahanamoku Beach – August 6, 2018*

As sea levels continue to rise, and King Tide events occur more and more frequently, it is fair to anticipate that these already serious problems will only worsen.

The omission of Duke Kahanamoku Beach Sector is particularly disturbing because the State is obligated to maintain the beach. In Section 2.1 of the DPEIS, reference is made to various historical agreements by which the Territory of Hawaii developed portions of Waikiki beach, agreed to replenish the beach, and made other commitments concerning the maintenance of the beach. The DPEIS fails to mention a 1955 Deed between HHV's predecessor in interest and the Territory of Hawaii that was the basis for the creation of Duke Kahanamoku Beach and the Duke Kahanamoku Lagoon. That deed contains the following covenant by the Grantor (the State):

The Grantor *shall permanently maintain said beach* after its construction in the general location and configuration shown on Registered Map No. 4070, to the extent that it is able to control the action of natural forces thereupon, and the adjacent swimming area abutting its seaward (southerly) side, which swimming area is shown on Registered Map No. 4070

crosshatched in green, as a public beach and swimming area so long as and to the extent that appropriations are and may from time to time be available therefor.”

(Deed Paragraph B.1, page 6) (Emphasis added).

Despite the State’s commitment to permanently maintain Duke Kahanamoku beach, we are unaware of any steps the State has taken to fulfill that commitment. As described above, HHV and other groups have expended substantial sums to restore the beach that the State agreed to maintain. This is unfair and inconsistent with the commitment made in the 1955 deed. The State agreed to maintain Duke Kahanamoku Beach “to the extent that it is able to control the action of natural forces thereupon” and “to the extent that appropriations are and may from time to time be available therefor.” The Program described in the DPEIS demonstrates both that the State has confirmed that it is able to take action to control the action of natural forces on the beaches of Waikiki and that appropriations are available to do so. Thus, the conditions to the State’s obligation to maintain Duke Kahanamoku Beach are satisfied, and it is apparent to even the casual observer that the beach is far from its original as-built condition and configuration. It is unfair to single out Duke Kahanamoku Beach as the *only* beach fronting significant development in Waikiki that is omitted from the Program.<sup>1</sup>

The DPEIS states that the selection methodology by which the beach sectors were chosen for inclusion in the Program “was a primarily stakeholder-driven process” and that the Waikiki Beach Community Advisory Committee (“WBCAC”) was largely responsible for determining which beach sectors were selected. *See, e.g.*, DPEIS Section 2.6 and Appendix A. Although an HHV representative served on the WBCAC, we understand that the sectors selected for inclusion in the Program were ranked by the members of the WBCAC based on perceived need of the committee members. This non-scientific selection process does not seem particularly appropriate given the very high stakes involved. The process seems to have assumed as a “given” that only 4 beach sectors would be addressed, but no explanation is given for that decision. Compared to the extensive actions proposed in beach sectors C, D and E (including the construction of expensive groins and other structures), the addition of Duke Kahanamoku Beach (maintenance of which would likely mirror the relatively modest treatment proposed for Fort DeRussy Beach) would presumably have added very little to the overall cost of the Program. Further, omitting Duke Kahanamoku Beach from the Program, and removing sand from Fort DeRussy Beach that could be used to restore the already deteriorated Duke Kahanamoku Beach, seems likely to increase the cost, perhaps substantially, of restoring Duke Kahanamoku Beach when, inevitably, conditions on the beach deteriorate further.

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<sup>1</sup> The unfairness of omitting Duke Kahanamoku Beach is especially painful to HHV because HHV pays the State more than \$55,000 per month for the right to operate a beach concession from Duke Kahanamoku Beach. The sand is so compacted and hard that it is difficult for HHV to fully enjoy its rights under its Beach Concession Agreement with the State, as even setting up umbrellas can be quite difficult to do in the densely compacted sand. This may result in lost revenue to HHV, and lost G.E. Tax revenue to the State. If the State fails to improve Duke Kahanamoku Beach, it may be more difficult to find another concessionaire when HHV’s Beach Concession Agreement expires in 2027.

The DPEIS emphasizes multiple times that the beach sectors that were not selected for the Program are “clearly important and, as sea levels continue to rise, additional actions may be necessary in these beach sectors in the future.” *See, e.g.*, Section 2.6 and Section 15 of DPEIS. Respectfully, Park believes the time for “action” at Duke Kahanamoku Beach is now. (See *Figures 2, 3 and 4* above). The problems at Duke Kahanamoku Beach are no less serious than the problems at Fort DeRussy Beach, and are arguably more significant, given that King Tide events more severely impact Duke Kahanamoku Beach and the Lagoon, than they do the west end of DeRussy Beach. Prudence and cost-efficiency would clearly seem to call for Duke Kahanamoku Beach to be included in the Program now. As the last and only remaining stretch of beach between the developed sectors of Waikiki selected for the Program and the natural break-point presented by the inlet to the Ala Wai Marina, it seems odd indeed for Duke Kahanamoku Beach to have been excluded.

2. The DPEIS Fails to Consider How the Proposed “Sand Backpassing” at Fort DeRussy Beach Could Impact the Hilton Pier or Duke Kahanamoku Beach.

The Fort DeRussy Beach Sector (see area “B” on *Figure 1* above) begins on the east side of the Hilton Pier. The DPEIS describes the proposed action for the Fort DeRussy Beach Sector as follows:

The proposed action for the Fort DeRussy beach sector is beach maintenance consisting of sand backpassing with no improvements or modifications to existing structures. Sand will be transported from the accreted area at the west end of the beach [sector] to the eroding area at the east end of the beach [sector] to increase dry beach width and mitigate wave overtopping. Sand will be obtained from the beach face on the east side of the Hilton pier/groin, where sand has accreted over the years. Sand will be excavated from the beach face extending inshore only as far as necessary to obtain the required volume of sand.

DPEIS Section 4.3, page 59.

The DPEIS goes on to say that “the volume of sand required . . . will depend on conditions at the borrow site and placement site at the time of construction.” *Id.* The proposed sand backpassing will include relocating approximately 1,500 cubic yards of sand. The DPEIS states that a reduction in beach width of 7.5 feet over a 700 foot length will produce the 1,500 cubic yards of sand needed. “The sand will be manually transported from the borrow site to the placement site, where it will be placed along the shoreline to produce a beach with a 15 to 20 foot wide crest.” *Id.* The sand backpassing is intended to be implemented as an ongoing maintenance program, to include 17 individual sand backpassing events over a 50 year period (once every three years). *Id at page 60.*

The DPEIS does not discuss whether or how the removal of 1,500 cubic yards of sand from the beach immediately adjacent to the Hilton Pier might affect the Hilton Pier.<sup>2</sup> The Hilton Pier is

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<sup>2</sup> The pier separating Duke Kahanamoku Beach Sector from the Fort DeRussy Beach Sector is commonly known as the “Hilton Pier.” It was built by Hilton and is now owned by HHV.

located on submerged land owned by the State. HHV pays the State very substantial monthly rent (in excess of \$35,000 per month) for the Hilton Pier. Park is concerned that the removal of so much sand adjacent to the Hilton Pier could negatively impact the footings and or structural integrity of the Hilton Pier. Park believes such an analysis should be undertaken prior to the proposed transport of sand to ensure that the Pier is not negatively impacted.

Moreover, the DPEIS does not include any analysis regarding how the sand backpassing at Fort DeRussy Beach Sector would or could impact the beach in the adjacent Duke Kahanamoku Beach Sector. As indicated above, Duke Kahanamoku Beach continues to experience significant erosion and compacting, and King Tide events can already overwhelm the beach. It is not clear whether the proposed actions will exacerbate the problems with erosion and sand compacting that Duke Kahanamoku Beach is already experiencing, or whether Duke Kahanamoku Beach could be more vulnerable to sea level rise and King Tide events as a result of these actions. Park believes that it is critically important that the State analyze how the sand backpassing at DeRussy Beach could impact Duke Kahanamoku Beach, *before* the proposed actions are undertaken.

Finally, it would seem more sensible to implement the beach improvement measures at Fort DeRussy Beach and Duke Kahanamoku Beach together, at the same time, rather than implementing a plan for 50 years of ongoing maintenance work at Fort DeRussy Beach and entirely omitting Duke Kahanamoku Beach from any of the current improvement and maintenance work.

3. The DPEIS Improperly Proposes Driving Heavy Equipment across Duke Kahanamoku Beach in Order to Access the Fort DeRussy Beach Project Site.

In Section 4.3.3, the DPEIS states that “heavy equipment such as excavators, front end loaders, and dump trucks will access the [DeRussy project] site either through the parking lot makai (seaward) of the Duke Kahanamoku Lagoon or through Paoa Lane (sic)<sup>3</sup> between Hilton Hawaiian Village and the Hale Koa Hotel.” By necessity, the heavy equipment would need to drive across Duke Kahanamoku Beach in order to get from the parking lot makai of the Lagoon to Fort DeRussy Beach. Park objects to any proposal to drive such heavy equipment across Duke Kahanamoku Beach. Doing so will certainly compact the beach further, cause substantial disruption to users of Duke Kahanamoku Beach, and introduce the risk of oil, gas or other chemical spills on the beach, none of which are considered in the DPEIS. The alternative of accessing the project site via Paoa Place may be workable, but also has the potential to seriously disrupt activity at HHV and therefore should be planned and coordinated so as to minimize such disruptions.

The final EIS should identify and evaluate the Program’s potential negative impacts to Duke Kahanamoku Beach and HHV operations, and recommend steps to be implemented to mitigate any such negative impacts as much as possible.

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<sup>3</sup> There is no “Paoa Lane.” The reference should be to “Paoa Place.”

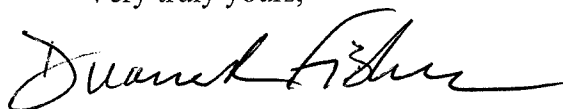
4. The Offshore “Hilton Sand Deposit” Should be Also Used to Replenish Sand at Duke Kahanamoku Beach.

The Program contemplates taking sand from the so-called “Hilton Deposit” just offshore from Duke Kahanamoku Beach to replenish the other beach sectors. *See* DPEIS Section 3.5.3. Park is concerned that using the Hilton Deposit for this purpose would make it more difficult to and substantially more expensive to obtain sand needed to replenish Duke Kahanamoku Beach, which Park believes already needs immediate attention.

**CONCLUSION**

We appreciate the opportunity to provide these comments to the DPEIS. We applaud the State’s attention to the impact of coastal erosion and sea level rise on the beaches in Waikiki. However, we believe the omission of Duke Kahanamoku Beach is a serious flaw in the scope of the Program, and respectfully request that the Program be expanded to include Duke Kahanamoku Beach, the only stretch of Waikiki Beach fronting significant development to have been omitted from the Program. Thank you for considering our request and comments.

Very truly yours,



Duane R. Fisher

c: Hawaii Attorney General Clare E. Connors  
State Senator Sharon Y. Moriwaki (*via email: senmoriwaki@capitol.hawaii.gov*)  
Honolulu City Council Chair Thomas Waters (*via email: tommy.waters@honolulu.gov*)  
Thomas Morey (*via email: tmorey@pkhotelsandresorts.com*)  
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HISTORIC PRESERVATION  
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Mar 18, 2024

**SUBJECT:** Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Duane Fisher:

Thank you for your letter dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions on behalf of your client, Park Hotels & Resorts ("Park"), the owner (through its subsidiary, Hilton Hawaiian Village LLC) of the Hilton Hawaiian Village in Waikīkī ("HtIV"). As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: We believe the omission of Duke Kahanamoku Beach is a serious flaw in the scope of the Program. The reasons for selecting only four beach sectors for inclusion in the Program are not explained. Nor is it explained why the Program omits only Duke Kahanamoku Beach from the beach sectors fronting significant development that selected for remediation. We respectfully request that the Program be expanded to include Duke Kahanamoku Beach, the only stretch of Waikīkī Beach fronting significant development to have been omitted from the Program. It would seem more sensible to implement the beach improvement measures at Fort DeRussy Beach and Duke Kahanamoku Beach together, at the same time, rather than implementing a plan for 50 years of ongoing maintenance work at Fort DeRussy Beach and entirely omitting Duke Kahanamoku Beach from any of the current improvement and maintenance work.

Response: Selection of the proposed beach improvement and maintenance actions was a primarily stakeholder-driven process. We relied heavily on feedback and direction from the Waikīkī Beach Community Advisory Committee (WBCAC) to identify issues, needs, priorities, and design criteria for each beach sector. The WBCAC is composed of various stakeholders representing business (29%), government (29%), hotels and resorts (11%), nonprofit organizations (14%), and science and engineering (17%). The WBCAC serves as a representative body to communicate the diversity of perspectives

and priorities in the broader Waikīkī community, provide guidance and feedback for beach management and planning activities in Waikīkī, and ensure that future beach management projects address the issues and concerns of the Waikīkī community and local stakeholders. The sectors that were selected for beach improvement and maintenance actions were identified as the highest priorities by the WBCAC. Regarding your comment that Duke Kahanamoku Beach is “the only stretch of Waikīkī Beach fronting significant development to have been omitted from the Program”, please note that protection of existing development is not a primary objective of the Program, and the presence of existing development and/or resort infrastructure was not a criterion for project selection.

While the Duke Kahanamoku beach sector was not identified as a high priority by the WBCAC, this area of Waikīkī is clearly important and we recognize that, as sea levels continue to rise, beach improvements and/or maintenance may be required in the Duke Kahanamoku beach sector in the future. The studies that informed the analysis of potential impacts in the FPEIS were limited to the beach sectors in which actions are being proposed. As a result, the Duke Kahanamoku beach sector was not included in these studies. Modifying the scope of the Program to include additional proposed actions at this time would require additional time and costs to expand the geographic scope of those studies, which would further delay the environmental review process. We acknowledge your concerns and would appreciate the opportunity to engage in discussions regarding the potential for a future project in the Duke Kahanamoku beach sector. If such a project were to be proposed, we would need to submit a Supplemental EIS to include the project in the Program.

For more information about the WBCAC and the project selection process, please see the following sections of the FPEIS:

- Section 2.4
- Section 19
- Appendix A

Comment: The omission of Duke Kahanamoku Beach Sector is particularly disturbing because the State is obligated to maintain the beach. In Section 2.1 of the DPEIS, reference is made to various historical agreements by which the Territory of Hawai‘i developed portions of Waikīkī Beach, agreed to replenish the beach, and made other commitments concerning the maintenance of the beach. The DPEIS fails to mention the 1955 Deed between HHV’s predecessor in interest and the Territory of Hawai‘i that was the basis for the creation of Duke Kahanamoku Beach and Duke Kahanamoku Lagoon.

Response: As no actions are proposed at the Duke Kahanamoku Beach section for this project at this time, it is not necessary to include the 1955 agreement regarding the littoral rights exchange between the former abutting property owners and the Territory of Hawai‘i.

Comment: The DPEIS fails to consider how the proposed “sand backpassing” at Fort DeRussy beach could impact the Hilton Pier or Duke Kahanamoku Beach. The DPEIS does not discuss whether or how the removal of 1,500 cubic yards of sand from the beach immediately adjacent

to the Hilton Pier might affect the Hilton Pier. The Hilton Pier is located on submerged land owned by the State. HHV pays the State very substantial monthly rent (in excess of \$35,000 per month) for the Hilton Pier. Park is concerned that the removal of so much sand adjacent to the Hilton Pier could negatively impact the footings and or structural integrity of the Hilton Pier. Park believes such analysis should be undertaken prior to the proposed transport of sand to ensure that the Pier is not negatively impacted.

Response: We acknowledge your concerns regarding the potential for sand backpassing to impact the Hilton Pier and groin. The proposed action for the Fort DeRussy beach sector has been modified and no longer involves the removal of sand from the beach adjacent to the Hilton Pier and groin. The proposed action would utilize sand from the *Hilton* offshore sand deposit. The sand would be pumped to shore and dewatered at the west end of Fort DeRussy beach, east of the Hilton groin, so there are no anticipated impacts to the Hilton pier or Duke Kahanamoku Beach.

Comment: The DPEIS does not include any analysis regarding how the sand backpassing at Fort DeRussy Beach Sector would or could impact the beach in the adjacent Duke Kahanamoku Beach Sector. Duke Kahanamoku Beach continues to experience significant erosion and compacting, and King Tide events can already overwhelm the beach. It is not clear whether the proposed actions will exacerbate the problems with erosion and sand compacting that Duke Kahanamoku Beach is already experiencing, or whether Duke Kahanamoku Beach could be more vulnerable to sea level rise and King Tide events as a result of these actions. Park believes that it is critically important that the State analyze how the sand backpassing at Fort DeRussy Beach could impact Duke Kahanamoku Beach, before the proposed actions are undertaken.

Response: We acknowledge your concerns regarding the potential for the proposed action to negatively impact Duke Kahanamoku beach. The proposed action in the Fort DeRussy beach sector focuses on the erosion hot spot at the east end of Fort DeRussy beach, adjacent to the Fort DeRussy outfall groin. The sand placement area is located approximately 1,000 feet east of Duke Kahanamoku Beach. While the dewatering basin, equipment access, and laydown/staging areas will likely be located closer to Duke Kahanamoku Beach, these project elements are temporary and will only be actively used during construction. The proposed action would involve placement of 1,500 cubic yards of offshore sand along the east end of Fort DeRussy Beach. The predominant direction of sediment transport in the Fort DeRussy beach sector is from east to west. Therefore, we anticipate that any sand that is transported from the placement area by natural processes would either accrete adjacent to the Hilton groin or be transported around the Hilton groin into the Duke Kahanamoku beach sector. Therefore, the proposed action is not anticipated to have any negative impacts to Duke Kahanamoku beach.

Comment: The DPEIS states that “heavy equipment such as excavators, front end loaders, and dump trucks will access the [DeRussy project] site either through the parking lot makai (seaward) of the Duke Kahanamoku Lagoon or through Paoa Lane between Hilton Hawaiian Village and the Hale Koa Hotel.” By necessity, the heavy equipment would need to drive across Duke Kahanamoku Beach in order to get from the parking lot makai of the Lagoon to Fort

DeRussy Beach. Park objects to any propose to drive such heavy equipment across Duke Kahanamoku Beach. Doing so will certainly compact the beach further, cause substantial disruption to users of Duke Kahanamoku Beach, and introduce the risk of oil, gas or other chemical spills on the beach, none of which are considered in the DPEIS. The alternative of accessing the project site via Paoa Place may be workable, but also has the potential to seriously disrupt activity at HHV and therefore should be planned and coordinated so as to minimize such disruptions.

Response: We acknowledge your concerns regarding the use of heavy equipment on Duke Kahanamoku Beach. Please note that Duke Kahanamoku Beach is owned by the State of Hawai'i and we reserve the right to operate equipment on the beach, if necessary, to achieve the proposed action. The DPEIS discussed in Section 4.3.3 options for equipment to access the shoreline in the Fort DeRussy beach sector. At this time, the State does not intend to use the parking lot fronting Duke Kahanamoku Lagoon to access the project site in the Fort DeRussy Beach Sector, and access via Paoa Place may not be feasible due to the limited access to the shoreline. The preferred approach would be to access the shoreline through the middle of Fort DeRussy Park (see Figure 4-14). We are consulting with the U.S. Army Corps of Engineers to confirm the viability of this option. Equipment ingress/egress routes and laydown/staging areas will be confirmed during the final design and permitting phase. The contractor will be required to prepare and submit a BMP Plan for approval prior to initiating construction. Section 14.3 of the FPEIS lists the components of the BMP Plan.

Comment: The offshore "Hilton Sand Deposit" should be also used to replenish sand at Duke Kahanamoku Beach.

Response: The *Hilton* offshore sand deposit covers approximately 11 acres and contains an estimated 45,000 cy of sand that varies in thickness from 4 to 8 ft. The median grain size ( $D_{50}$ ) is 0.6 mm, which is relatively coarse in comparison to the existing beach sand in Waikīkī. The sand at the *Hilton* deposit complies with State of Hawai'i requirements and could potentially support beach nourishment in the Fort DeRussy, Halekūlani, and Kūhiō beach sectors. The offshore sand deposits that will be used to support the proposed beach improvement actions in the Halekūlani beach sector and Kūhiō beach sector 'Ewa (west) basin have yet to be confirmed. The dredging methods to recover the offshore sand and transport it to the shoreline for placement have also not been confirmed.

For information regarding the Hilton offshore sand deposit, please see the following sections of the FPEIS:

- Section 3.6
- Appendix B

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

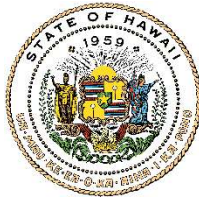
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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Sep 26, 2024

**SUBJECT:** Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Mr. Fisher:

Thank you for your letter dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions on behalf of your client, Park Hotels & Resorts ("Park"), the owner (through its subsidiary, Hilton Hawaiian Village LLC) of the Hilton Hawaiian Village in Waikīkī ("HtlV"). As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024. The DLNR is pleased to provide the following additional responses to your comments.

**Comment:** We believe the omission of Duke Kahanamoku Beach is a serious flaw in the scope of the Program. The reasons for selecting only four beach sectors for inclusion in the Program are not explained. Nor is it explained why the Program omits only Duke Kahanamoku Beach from the beach sectors fronting significant development that selected for remediation. We respectfully request that the Program be expanded to include Duke Kahanamoku Beach, the only stretch of Waikīkī Beach fronting significant development to have been omitted from the Program. It would seem more sensible to implement the beach improvement measures at Fort DeRussy Beach and Duke Kahanamoku Beach together, at the same time, rather than implementing a plan for 50 years of ongoing maintenance work at Fort DeRussy Beach and entirely omitting Duke Kahanamoku Beach from any of the current improvement and maintenance work.

**Response:** Selection of the proposed beach improvement and maintenance actions was a primarily stakeholder-driven process. We relied heavily on feedback and direction from the Waikīkī Beach Community Advisory Committee (WBCAC) to identify issues, needs, priorities, and design criteria for each beach sector. The WBCAC is composed of various stakeholders representing business (29%), government (29%), hotels and resorts (11%), nonprofit organizations (14%), and science and engineering (17%). The

WBCAC serves as a representative body to communicate the diversity of perspectives and priorities in the broader Waikīkī community, provide guidance and feedback for beach management and planning activities in Waikīkī, and ensure that future beach management projects address the issues and concerns of the Waikīkī community and local stakeholders. The sectors that were selected for beach improvement and maintenance actions were identified as the highest priorities by the WBCAC. Regarding your comment that Duke Kahanamoku Beach is “the only stretch of Waikīkī Beach fronting significant development to have been omitted from the Program”, please note that protection of existing development is not a primary objective of the Program, and the presence of existing development and/or resort infrastructure was not a criterion for project selection.

While the Duke Kahanamoku beach sector was not identified as a high priority by the WBCAC, this area of Waikīkī is clearly important and we recognize that, as sea levels continue to rise, beach improvements and/or maintenance may be required in the Duke Kahanamoku beach sector in the future. The studies that informed the analysis of potential impacts in the FPEIS were limited to the beach sectors in which actions are being proposed. As a result, the Duke Kahanamoku beach sector was not included in these studies. Modifying the scope of the Program to include additional proposed actions at this time would require additional time and costs to expand the geographic scope of those studies, which would further delay the environmental review process. We acknowledge your concerns and would appreciate the opportunity to engage in discussions regarding the potential for a future project in the Duke Kahanamoku beach sector. If such a project were to be proposed, we would need to submit a Supplemental EIS to include the project in the Program.

For more information about the WBCAC and the project selection process, please see the following sections of the FPEIS:

- Section 2.4
- Section 19
- Appendix A

Comment: The omission of Duke Kahanamoku Beach Sector is particularly disturbing because the State is obligated to maintain the beach. In Section 2.1 of the DPEIS, reference is made to various historical agreements by which the Territory of Hawai‘i developed portions of Waikīkī Beach, agreed to replenish the beach, and made other commitments concerning the maintenance of the beach. The DPEIS fails to mention the 1955 Deed between HHV’s predecessor in interest and the Territory of Hawai‘i that was the basis for the creation of Duke Kahanamoku Beach and Duke Kahanamoku Lagoon.

Response: As no actions are proposed at the Duke Kahanamoku Beach section for this project at this time, it is not necessary to include the 1955 agreement regarding the littoral rights exchange between the former abutting property owners and the Territory of Hawai‘i.

Comment: The DPEIS fails to consider how the proposed “sand backpassing” at Fort DeRussy beach could impact the Hilton Pier or Duke Kahanamoku Beach. The DPEIS does not discuss

whether or how the removal of 1,500 cubic yards of sand from the beach immediately adjacent to the Hilton Pier might affect the Hilton Pier. The Hilton Pier is located on submerged land owned by the State. HHV pays the State very substantial monthly rent (in excess of \$35,000 per month) for the Hilton Pier. Park is concerned that the removal of so much sand adjacent to the Hilton Pier could negatively impact the footings and or structural integrity of the Hilton Pier. Park believes such analysis should be undertaken prior to the proposed transport of sand to ensure that the Pier is not negatively impacted.

Response: We acknowledge your concerns regarding the potential for sand backpassing to impact the Hilton Pier and groin. The proposed action for the Fort DeRussy beach sector has been modified and no longer involves the removal of sand from the beach adjacent to the Hilton Pier and groin. We proposed action would utilize sand from the *Hilton* offshore sand deposit. The sand would be pumped to shore and dewatered at the west end of Fort DeRussy beach, east of the Hilton groin, so there are no anticipated impacts to the Hilton pier or Duke Kahanamoku Beach.

Comment: The DPEIS does not include any analysis regarding how the sand backpassing at Fort DeRussy Beach Sector would or could impact the beach in the adjacent Duke Kahanamoku Beach Sector. Duke Kahanamoku Beach continues to experience significant erosion and compacting, and King Tide events can already overwhelm the beach. It is not clear whether the proposed actions will exacerbate the problems with erosion and sand compacting that Duke Kahanamoku Beach is already experiencing, or whether Duke Kahanamoku Beach could be more vulnerable to sea level rise and King Tide events as a result of these actions. Park believes that it is critically important that the State analyze how the sand backpassing at Fort DeRussy Beach could impact Duke Kahanamoku Beach, before the proposed actions are undertaken.

Response: We acknowledge your concerns regarding the potential for the proposed action to negatively impact Duke Kahanamoku beach. The proposed action in the Fort DeRussy beach sector focuses on the erosion hot spot at the east end of Fort DeRussy beach, adjacent to the Fort DeRussy outfall groin. The sand placement area is located approximately 1,000 feet east of Duke Kahanamoku Beach. While the dewatering basin, equipment access, and laydown/staging areas will likely be located closer to Duke Kahanamoku Beach, these project elements are temporary and will only be actively used during construction. The proposed action would involve placement of 1,500 cubic yards of offshore sand along the east end of Fort DeRussy Beach. The predominant direction of sediment transport in the Fort DeRussy beach sector is from east to west. Therefore, we anticipate that any sand that is transported from the placement area by natural processes would either accrete adjacent to the Hilton groin or be transported around the Hilton groin into the Duke Kahanamoku beach sector. Therefore, the proposed action is not anticipated to have any negative impacts to Duke Kahanamoku beach.

Comment: The DPEIS states that “heavy equipment such as excavators, front end loaders, and dump trucks will access the [DeRussy project] site either through the parking lot makai (seaward) of the Duke Kahanamoku Lagoon or through Paoa Lane between Hilton Hawaiian Village and the Hale Koa Hotel.” By necessity, the heavy equipment would need to drive across



Duke Kahanamoku Beach in order to get from the parking lot makai of the Lagoon to Fort DeRussy Beach. Park objects to any propose to drive such heavy equipment across Duke Kahanamoku Beach. Doing so will certainly compact the beach further, cause substantial disruption to users of Duke Kahanamoku Beach, and introduce the risk of oil, gas or other chemical spills on the beach, none of which are considered in the DPEIS. The alternative of accessing the project site via Paoa Place may be workable, but also has the potential to seriously disrupt activity at HHV and therefore should be planned and coordinated so as to minimize such disruptions.

Response: We acknowledge your concerns regarding the use of heavy equipment on Duke Kahanamoku Beach. Please note that Duke Kahanamoku Beach is owned by the State of Hawai'i and we reserve the right to operate equipment on the beach, if necessary, to achieve the proposed action. The DPEIS discussed in Section 4.3.3 options for equipment to access the shoreline in the Fort DeRussy beach sector. At this time, the State does not intend to use the parking lot fronting Duke Kahanamoku Lagoon to access the project site in the Fort DeRussy Beach Sector, and access via Paoa Place may not be feasible due to the limited access to the shoreline. The preferred approach would be to access the shoreline through the middle of Fort DeRussy Park (see Figure 4-14). We are consulting with the U.S. Army Corps of Engineers to confirm the viability of this option. Equipment ingress/egress routes and laydown/staging areas will be confirmed during the final design and permitting phase. The contractor will be required to prepare and submit a BMP Plan for approval prior to initiating construction. Section 14.3 of the FPEIS lists the components of the BMP Plan.

Comment: The offshore "Hilton Sand Deposit" should be also used to replenish sand at Duke Kahanamoku Beach.

Response: The *Hilton* offshore sand deposit covers approximately 11 acres and contains an estimated 45,000 cy of sand that varies in thickness from 4 to 8 ft. The median grain size ( $D_{50}$ ) is 0.6 mm, which is relatively coarse in comparison to the existing beach sand in Waikīkī. The sand at the *Hilton* deposit complies with State of Hawai'i requirements and could potentially support beach nourishment in the Fort DeRussy, Halekūlani, and Kūhiō beach sectors. The offshore sand deposits that will be used to support the proposed beach improvement actions in the Halekūlani beach sector and Kūhiō beach sector 'Ewa (west) basin have yet to be confirmed. The dredging methods to recover the offshore sand and transport it to the shoreline for placement have also not been confirmed.

For information regarding the Hilton offshore sand deposit, please see the following sections of the FPEIS:

- Section 3.6
- Appendix B

Comment: In Section 4.3.3, the DPEIS states that "heavy equipment such as excavators, front end loaders, and dump trucks will access the [DeRussy project] site either through the parking lot makai (seaward) of the Duke Kahanamoku Lagoon or through Paoa Lane (sic)<sup>3</sup> between

Hilton Hawaiian Village and the Hale Koa Hotel." There is no "Paoa Lane." The reference should be to "Paoa Place."

Response: The reference to "Paoa Lane" has been corrected to "Paoa Place" (see Page 77 of the FPEIS).

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

# Waikiki

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**From:** Anne Chung - NOAA Federal <anne.chung@noaa.gov>  
**Sent:** Thursday, July 22, 2021 11:34 AM  
**To:** Waikiki; Gerry Davis - NOAA Federal; Malia Chow - NOAA Federal  
**Subject:** NMFS EFH comments for Waikiki Beach Improvement and Maintenance Program DEIS  
**Attachments:** Waikiki DEIS NMFS EFH comments\_7.22.21.pdf

Aloha,

Please see attached for the NMFS comments on the Waikiki Beach Improvement and Maintenance Program as they relate to Essential Fish Habitat (EFH). Thank you for the opportunity.

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**Anne Chung, Ph.D.**

*Marine Resource Specialist, Pacific Islands Regional Office*

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**National Oceanic and Atmospheric Administration**  
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July 21, 2021

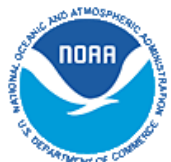
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Aloha,

The National Marine Fisheries Service, Pacific Islands Regional Office (PIRO) received a request from the Department of Land and Natural Resources, Division of Conservation and Coastal Lands (DLNR OCCL) for comments on the Draft Environmental Impact Statement (DEIS) for the Waikīkī Beach Improvement and Maintenance Program. Our response provided below is intended to help you comply with the essential fish habitat (EFH) provision of the Magnuson-Stevens Fishery Conservation and Management Act (MSA; Section 305(b)(2) as described by 50 CFR 600.920), which will be required as part of the U.S. Army Corps of Engineers, Honolulu District, Regulatory Branch's (hereafter, USACE; CC'd here) permitting process. This technical assistance does not fulfill any federal responsibilities and does not constitute an EFH consultation. In addition to being the federal regulatory agency responsible for implementing the MSA, PIRO oversees consultations for compliance with the Endangered Species Act (ESA) and other statutory mandates. Compliance with the EFH provisions of the MSA can also be achieved through pursuance to the Fish and Wildlife Coordination Act (FWCA, 16 U.S.C. 661-666c). For all questions related to consultations with us in the future, please contact us through the email address [EFHESAconsult@noaa.gov](mailto:EFHESAconsult@noaa.gov).

### **Project Description**

The DLNR OCCL proposes multiple beach nourishment and coastal improvement construction projects on Waikīkī Beach, O'ahu, Hawai'i at the Fort DeRussy, Halekulani, Royal Hawaiian, and Kuhio Beach sectors including beach stabilization structures, recovery of offshore sand, and placement of sand on the shoreline. The purpose of the proposed actions are to increase beach stability, provide safe access to the shoreline, and increase resilience to coastal hazards and sea level rise. More specifically, the project proposes these actions at four beach sectors in Waikīkī:



1. **Fort DeRussy Beach** – Along a 1,680 foot stretch of shoreline, the DLNR OCCL proposes to conduct sand backpassing, distributing 1,200 cubic yards of sand from an accreted area at the west end of the beach, and move it to the east end of the beach. The action would not require in-water work, but rather excavators, front-end loaders, and dump trucks would transport the sand from the borrow site to the placement site.
2. **Halekulani Beach** – Along the 1,450 foot-long shoreline, DLNR OCCL proposes to construct a series of five new T-groins and placing 60,000 cubic yards of sand fill from a dredge recovery area. Due to challenges accessing the beach in this area, these actions may require the use an ocean-based barge and/or construction of a temporary rubblemound construction access berm.
3. **Royal Hawaiian Beach** – This shoreline is approximately 1,730 feet long and DLNR OCCL proposes to place 20,000 cubic yards of sand from an offshore collection site. Construction methodology would be similar to the 2012 Waikīkī Beach Maintenance I project with sand being dredged using a submersible pump mounted on a crane barge. Sand would be stockpiled in the Diamond Head basin of Kuhio Beach Park until it is placed with dump trucks onto the beach. This section of beach includes the newly constructed Royal Hawaiian Groin as well as the Kuhio sandbag groin.
4. **Kuhio Beach** – Along this 1,500 foot shoreline, DLNR OCCL proposes to conduct beach nourishment and structural improvements to two rock basins. The Ewa Basin would be removed and reconstructed into three distinct breakwaters to account for sea level rise and wave energy. Underlayer and possibly armor stones would be placed to form a work platform for an excavator. In the Diamond Head basin, no structural modifications would occur but a sand causeway may be constructed to support an excavator for sand delivery. An alternative would be a diver-operated dredge, which would entail a dredge pump and a 100 foot hose. In each basin, 4,500 cubic yards of sand would be placed on the shoreline, in the Ewa Beach basin sand would be from a dredged location and in the Diamond Head basin the sand would be excavated or dredged from the basin itself.

## **PIRO Habitat Mandates**

### *Magnuson Stevens Fishery Conservation and Management Act*

A consultation with NMFS is required when a federal agency conducts, funds, or permits work that may adversely affect EFH (Section 305(b)(2) as described by 50 CFR 600.920). The EFH consultation process entails the federal action agency contacting NMFS and providing an EFH assessment (EFHA), which contains key information: a description of the proposed action, a determination from the federal agency as to how the action will affect EFH, an assessment of those adverse effects, and proposed ways to mitigate for the adverse effects, if applicable. An adverse effect to EFH is anything that reduces the quality and or quantity of EFH. It may include direct, indirect, and site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of an action. NMFS will then review the EFHA and may provide conservation recommendations to avoid, minimize, offset for or otherwise mitigate expected adverse effects.

EFH consultations are scalable and commensurate to the severity and type of adverse effects to EFH. The greater the adverse effect, the greater the scrutiny in making a determination. As the order of effect increases, qualitative, semi-quantitative, and quantitative EFH Assessments are

appropriate, sequentially. Often, once EFH resources need to be quantified, PIRO is likely to request an “expanded” EFH consultation as opposed to “abbreviated” (50 CFR 600.920(h)(i)), unless sufficient quantification of unavoidable losses has been provided.

In the main Hawaiian Islands, EFH has been designated in the marine water column from the surface to a depth of 1,000 meters (m), from the shoreline to the outer boundary of the Exclusive Economic Zone (200 nautical miles), and the seafloor from the shoreline out to a depth of 700 m. These waters and submerged lands are designated as EFH because they support various life stages for the management unit species (MUS) identified under the Western Pacific Fishery Management Council’s, Pelagic and Hawai‘i Archipelago Fishery Ecosystem Plans. The MUS and life stages found in these waters include: eggs, larvae, juveniles, and adults of Bottomfish MUS; eggs, larvae, juveniles, and adults of Crustacean MUS; and eggs, larvae, juveniles, and adults of Pelagic MUS. Specific types of habitat considered as EFH include coral reefs, patch reefs, hard substrate, seagrass beds, soft substrate, artificial or man-made structures, mangrove, lagoon, estuarine, surge zone, deep-slope terraces and pelagic/open ocean.

For clarity, federal agencies may incorporate the EFHA into documents prepared for other purposes, such as Endangered Species Act Biological Assessments, National Environmental Policy Act documents, etc. If an EFHA is contained in another document, it must still include all of the mandatory contents as per the EFH guidelines. It must also be clearly identified in the table of contents and text of the document as an EFHA. Alternatively, an EFHA may incorporate by reference other relevant environmental assessment documents that have already been completed. The referenced document must be provided to NMFS with the EFHA.

The EFHA process can also be combined with existing environmental consultation and review processes. The EFH guidelines at 50 CFR 600.920(f) enable federal action agencies to use existing consultation or environmental review procedures to satisfy the MSA consultation requirements if the procedures meet the following criteria: 1) the existing process must provide NMFS with timely notification of actions that may adversely affect EFH; 2) notification must include an assessment of the proposed action’s impacts on EFH that meet the requirements for EFHA discussed in section 600.920(e); and 3) NMFS must have made a finding pursuant to section 600.920(f)(3) that the existing process satisfies the requirements of section 305(b)(2) of the MSA. For the purposes of this beach nourishment proposed action, the EFHA should be integrated with the FWCA (see below) coordination process. In situations where a Federal action may adversely affect designated EFH for federally managed fisheries, EFH Conservation Recommendations can be considered within the FWCA reporting recommendations.

### *Fish and Wildlife Coordination Act*

The FWCA (16 U.S.C. 661-666c) mandates that wildlife, including fish, receive equal consideration and be coordinated with other aspects of water resource development. This is accomplished through consultation with NMFS, the U.S. Fish and Wildlife Service (USFWS), and appropriate state agencies whenever any body of water is proposed to be modified in any way and a Federal permit or license is required. These agencies determine the possible harm to fish and wildlife resources, the measures needed to both prevent the damage to and loss of these resources, and the measures needed to develop and improve the resources, in connection with water resource

development. NMFS, the USFWS, and state agencies submit comments to Federal licensing and permitting agencies on the potential harm to living marine resources caused by the proposed water development project, and recommendations to prevent harm (NMFS 2004). In all, the FWCA compliance process includes the following four steps: consultation (notice of initiation); reporting (e.g., field surveys and summary reports) and recommendations to protect, mitigate, and restore natural resources; Action agency consideration of recommendations, and Action agency implementation of recommendations.

### *Stressor Effects*

Physical Damage: Direct contact to EFH resources (e.g., corals, submerged aquatic vegetation, hardbottom habitat) from removal of existing structures, construction equipment and materials, as well as from installation activities, can lead to permanent and lesser adverse effects. The level of these adverse effects (i.e., short-term, long-term to permanent, and cumulative) will depend on the density and extent of EFH resources present and the dredge and/or sediment retention designs that are chosen. For example, the 2012 Waikīkī Beach Nourishment and Dredging Project resulted in physical damage to the fossil limestone reef rock bordering sand borrow areas that were dredged. Due to this stressor, a variety of measures to avoid and minimize physical damage to EFH may be needed to reduce unavoidable losses. Overall, steps should be taken during dredging and sand transport to avoid and minimize physical damage to corals and submerged aquatic vegetation. Dredging equipment and turbidity control measures should consider wave energy and provide appreciable buffer space between construction equipment and nearby EFH resources.

Sedimentation and Turbidity: Enhanced sedimentation and turbidity may occur from dredging at borrow areas (e.g., pump heads causing re-distribution and settlement of fine sediment), land-based beach filling activities, after-the-fact leaching of micritic calcium carbonate from beach fill, and sediment resuspension from groins if they alter local hydrodynamics.

Nutrients and Chemical Contamination: Adverse effects of increased nutrients and chemical contamination may occur during dredging from borrow areas and after beach fill is placed due to release of sediment-bound nutrients and chemical contaminants. The latter may also occur from leaking construction equipment and introduction of treated materials into the marine environment. Sediment chemical analysis will be helpful to help better understand potential impacts.

Invasive Species: There is a concern that there would be an increased risk of spreading invasive species, which have been detected around at least one proposed sand collection site. *A. erecta* is an invasive species observed in Honolulu Harbor in 2014 (Wade et al. 2018) and patches of *A. erecta* have been observed near the Ala Moana dredging site; there is an increased risk of spreading this species through project activities if they are not deterred through avoidance measures and contingency planning. Invasive species rapidly increase in abundance to the point that they come to dominate their new environment, creating adverse ecological effects to other species of the ecosystem and the functions and services it may provide (Goldberg and Wilkinson 2004). Invasive species can decrease species diversity, change trophic structure, and diminish physical structure, but adverse effects are highly variable and species-specific.

## *NMFS Concerns*

NMFS appreciates the need to manage coastal erosion and the approach of using a combination of restoration approaches including beach nourishment, T-groin stabilization, and sand backpassing. We are concerned that there are a variety of adverse effects from stressors on EFH that have not been fully considered in the DEIS. Short-term, long-term to permanent, and cumulative adverse effects to EFH are likely to occur from the preferred alternative due to physical damage, sedimentation and turbidity, and nutrients and chemical contamination.

### *1. Long-term cumulative impacts of beach nourishment and groin construction.*

A combination of sea level rise, wave action, and coastal flooding have resulted in considerable erosion and shoreline recession along the coastline in Waikīkī. The IPCC projects that sea level will rise up to 3.2 feet by the year 2100 (Hawai‘i Climate Change Mitigation and Adaptation Commission 2017). NMFS is concerned about the cumulative impacts of multiple and repeated beach nourishment and coastal construction projects on EFH within and surrounding the project area. NMFS has recently consulted on and provided conservation recommendations for several of the previous beach maintenance projects in Waikīkī including Waikīkī Beach Maintenance I, the Kuhio sandbag groin, and the Royal Hawaiian groin replacement. In addition, NMFS consulted on the nearby Ala Moana Beach Park Beach Nourishment project in April 2020 (POH-2019-00194). The DEIS indicates that the proposed actions are part of a larger Waikīkī Beach Management Plan and Ho‘oumau ‘O Waikīkī Kahakai, which lays out guidance for beach management, improvement, and maintenance projects in Waikīkī. As the lifespan of the proposed work is stated to be about 50 years, the intention is to continue beach maintenance project in phases over time. NMFS is concerned about the need for repeated beach renourishment and coastal construction and the repeated stressors and unavoidable loss that could occur over time, which will degrade the condition of water column and substrate EFH that support the feeding, breeding, spawning, and growth of Federally managed fish species.

### *2. Lack of Sediment, Water Flow, and Current Modelling.*

Data and evaluation of marine currents, water flow, and sediment plume modelling are recommended near sand donor sites to justify final locations and clarify potential adverse effects to EFH from sediment resuspension and deposition during dredge operations and after beach nourishment. The modelling effort should also include and consider the following areas: the groin footprints, between the groins, offshore of the groins, and offshore sand borrow areas. NMFS is concerned that sediment deposition may occur over sensitive and hard-to-replace hard-bottom habitat, corals, or submerged aquatic vegetation (e.g., seagrass) during dredging activities at borrow sites and after during and after beach nourishment. There is an additional concern that changes in longshore currents due to T-groin construction would cause a decline in flushing and therefore water quality. Completing the modelling effort and including it in the EFHA would help reduce uncertainty and better inform conservation recommendations. If there is a high probability that sediment resuspension and deposition will occur over sensitive and hard-to-replace hard-bottom habitat, corals, and submerged aquatic vegetation, these areas should be prioritized survey areas both before and after construction.



3. *Unconfirmed dredge methods.*

NMFS is concerned that there is a lack of detail on the final methods for dredging sand onto sectors of the beach. The 2012 dredging in Waikīkī resulted in the leaching and resuspension of micrytic calcium carbonate. The Ala Moana Beach Nourishment consultation from the USACE suggested that the dredge method from 2012, which included the pumping of sand through small diameter hoses, resulted in the mechanical breakdown of sand sized particles resulting in portion that was much smaller (e.g., <4 microns). Finer grain sand could more easily cause sedimentation and decreased water quality to surrounding coral and hardbottom habitat. The DLNR OCCL should ensure that the dredging methods avoid duplicating the same method that may have resulted in the enhanced presence of micrytic calcium carbonate in 2012.

4. *Unknown final locations, composition, and surrounding habitats of sand collection sites.*

Several sand collection site options were described in the DEIS. NMFS is concerned about the lack of information about sand collection sites as the final decision will affect the EFH adverse effect and stressor analyses. Descriptions of the final locations should include sand composition and grain size, species and size classes for any adjacent coral or area of seagrass resources, presence or absence of invasive species, and the oceanographic setting. Marine resource survey assessments should be conducted over and along both hard and soft bottom (e.g., sand, unconsolidated sediment, etc.) substrate; however, surveys should ensure that ensure that coral and seagrass habitats are prioritized and that surveys and data are statistically powerful.

5. *Uncertainty of distribution of coral and seagrass throughout the project area.*

NMFS is concerned about the lack of quantitative data on habitat types and the presence or absence of coral and seagrass throughout the project area. Quantitative resource survey assessments were anticipated in the DEIS but were not provided; they should be included for the EIS and EFHA. Without this information, NMFS would be concerned about the lack of information on how project activities could affect habitat-forming EFH resources. If high uncertainty remains, NMFS must assume habitat-forming resources will be adversely affected by the project activities. The assumption would be that adverse effects may require coral and/or seagrass transplantation minimization and if there could be unavoidable loss, then offset measures to compensate for those losses must be in place.

6. *Use of geotextile sandbags.*

NMFS is also concerned about the existing Kuhio Sandbag groin and the continued use of geotextile sandbags. It was unclear in the DEIS if the sandbags will be removed, left in place, or buried during future beach nourishment. As they were intended as a short-term solution to coastal erosion, the EFHA should detail plans for the sandbags and their future lifespan.

## 7. *Additional adverse effects to EFH.*

Finally, NMFS is concerned that there are a variety of adverse effects from stressors on EFH that have not been fully considered in the DEIS. Short-term, long-term to permanent, and cumulative adverse effects to EFH may occur from the preferred alternative due to physical damage, sedimentation and turbidity, introduction of invasive species, and nutrients and chemical contamination.

### *EFH Assessment Content*

An EFHA should be included for the upcoming EFH consultation, and specific content should be considered for inclusion to inform an EFH determination and the EFH effects analysis. If a USACE permit is required, the USACE would be the lead federal action agency responsible for developing the EFHA. As described in the DEIS, before the USACE permit application process is initiated, we recommend that quantitative marine resource survey assessments, new sediment modeling, robust sediment testing, and water quality monitoring are conducted; in addition, we recommend that your water quality monitoring plan include assessments before (e.g., baseline), during, and after construction activities (see below). The EFHA should consider the full suite of potential stressors to habitat forming EFH. Below we provide details related to these concerns and guidance on how these issues can be resolved through continued early coordination. In addition, we provide an Enclosure at the end of this letter with specific avoidance and minimization measures that would be applicable to the project.

Mitigation and Unavoidable Loss: If the proposed activities will adversely affect EFH, various forms of mitigation (e.g., avoidance, minimization, and compensation to offset losses; see FR 85 43350 and CEQ 2011 Guidance) may be required, including the potential transplantation of corals and seagrass. In such cases, a minimization plan with post-transplantation monitoring for survivability should be included in the EFHA for evaluation. If unavoidable loss is expected due to proposed activities, these losses should be quantified and a plan to offset the losses of ecosystem services should be included in the EFHA. Information on the species; abundance, size and total area lost; and locations should be included in the offset plan. NMFS also recommends a habitat suitability analysis for any transplantation site.

Quantitative Resource Survey Assessments: We recommend that you conduct preliminary, quantitative benthic marine survey assessments of the entire project footprint area within the littoral cell—hard and soft bottom, groin footprints, between groins, offshore of the groins, where sediment models predict deposition, and offshore sand borrow areas—before an EFH consultation is initiated. The level of complexity of surveys will scale proportionally with the extent of habitat forming EFH resources (e.g., corals and submerged aquatic vegetation) that may suffer adverse effects (i.e., direct, indirect, and cumulative). Contingencies should be designed to accommodate analyses that require greater replication and higher statistical power to avoid the need to obtain higher resolution data. Hard-bottom and areas with habitat forming EFH should be prioritized over soft bottom substrate, though it will be important to characterize the latter. Post-action monitoring plans would reduce uncertainty during potential EFH offset determinations. Completing the survey work and including it in the Draft EIS and EFHA would help reduce uncertainty and better inform EFH conservation recommendations and any potential offset determinations for unavoidable loss.

NMFS is ready and willing to provide assistance to further refine and clarify the types and complexity of survey information to potentially include for any EFH consultation.

Sediment Modeling: Sediment modeling is recommended to predict how the preferred alternative may adversely affect EFH substrate (e.g., hard and soft bottom), habitat forming EFH (e.g., corals and submerged aquatic vegetation), and water column EFH. Modeling should consider how T-groins may alter sediment deposition over time. We are particularly concerned about redistribution and settling of fine sediment including limestone mud (i.e., microcrystalline calcium carbonate <4 microns in diameter) that may leach from beach fill and smother habitat forming EFH that may be nearby. The modelling effort should include and consider the following areas: the groin footprints, between the groins, offshore of the groins, sand nourishment areas, and offshore sand borrow areas. If there is a high probability that sediment deposition will occur over sensitive and hard-to-replace hard-bottom habitat, corals, and submerged aquatic vegetation, these areas should be prioritized survey areas both before and after construction. Completing the modelling effort and including it in the Draft EIS and EFHA would help reduce uncertainty and better inform EFH. If there is a high probability that sediment deposition will occur over sensitive and hard-to-replace hard-bottom habitat, corals, and submerged aquatic vegetation, these areas should be prioritized survey areas both before and after construction.

Sediment Testing: Sediment testing should be robust and specific; it should be done before sediment is collected from borrow sites and after it is deposited on beaches. The latter would help minimize the potential resuspension of micrytic calcium carbonate by informing contingency planning and sedimentation control measures. Information about sediment chemistry, nutrient content, and other chemical characterization should be considered for both bulk samples (i.e., all size fractions) and within each size fraction or sediment class (e.g., mud, silt, fine sand, sand, etc.). This would be helpful because smaller size fractions that include silt and mud classes typically retain higher organic carbon content and are more detrimental to habitat forming EFH than those sediment types with larger sizes. In addition, micrytic calcium carbonate is more difficult for hard corals to clear off of their tissue, and can result in mortality. This information should also be considered for inclusion in the Draft EIS and EFHA to inform conservation recommendations and potential offset determinations. Completing the sediment testing effort and including it in the Draft EIS and EFHA would help reduce uncertainty and better inform EFH conservation recommendations and any offset determinations.

Water Quality Monitoring: Robust water quality monitoring (e.g., turbidity, sedimentation rates, nutrients, dissolved oxygen, etc.) would be helpful to assess conditions before (i.e., baseline), during, and after beach restoration activities. These activities should be informed by the sediment modeling and daily tide and current velocity predictions to select sampling locations (<https://www.pacioos.hawaii.edu/voyager/>). Special attention and consideration should be placed on collecting turbidity and sedimentation rate information at areas where there are habitat forming EFH resources, including corals and submerged aquatic vegetation (e.g., seagrass). For other criteria needed for beach restoration projects, NMFS would defer to the requirements of the Environmental Protection Agency (EPA) delegated through the state of Hawai'i, Department of Health, Clean Water Branch's (DOH), 401 Water Quality Certification (WQC), Applicable Monitoring and Assessment Plans (AMAP). Completing the water quality monitoring planning effort and including it in the Draft EIS and EFHA would help reduce uncertainty and better inform

EFH conservation recommendations and any offset determinations.

### Summary

We greatly appreciate your early EFH coordination and the opportunity to provide comments on the DEIS. In summary, we expect that the proposed beach restoration project may have short-term, long-term to permanent, and cumulative adverse effects to EFH. Depending on the final results of additional data gathering and monitoring, the preferred alternative may result in unavoidable loss of EFH, which would require offset considerations. The prospective EFH consultation led by the USACE would be better informed with a description of cumulative impacts, sediment modelling data, description of dredge methods, final locations and information about sand collection areas, maps of coral and/or seagrass areas, details on the use of geotextile sandbags, and outlining additional impacts including physical damage, sedimentation, increased nutrients, and invasive species. We have described the stressor impacts to EFH from the proposed activities and have provided guidance on the EFH consultation process and mandatory content needed to include in an EFHA. In the Enclosure at the end of this email, we also provide specific avoidance and minimization recommendations by stressor-type.

For all additional questions related to consultations with us (e.g., ESA, EFH, and FWCA) in the future, please contact us through the email address: [EFHESAconsult@noaa.gov](mailto:EFHESAconsult@noaa.gov). For ESA-related topics please also contact Ann Garrett ([ann.garrett@noaa.gov](mailto:ann.garrett@noaa.gov)) and Ron Dean ([ron.dean@noaa.gov](mailto:ron.dean@noaa.gov)); for FWCA contact Steve Kolinski ([steve.kolinski@noaa.gov](mailto:steve.kolinski@noaa.gov)).

Sincerely,



Gerry Davis  
Assistant Regional Administrator  
PIRO Habitat Conservation Division

## References

- Council on Environmental Quality. 2011. Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact.
- Goldberg, J. and Wilkinson, C., 2004. Global threats to coral reefs: coral bleaching, global climate change, disease, predator plagues and invasive species. *Status of coral reefs of the world, 2004*, pp.67-92.
- Wade, R.M., Spalding, H.L., Peyton, K.A., Foster, K., Sauvage, T., Ross, M. and Sherwood, A.R., 2018. A new record of *Avrainvillea* cf. *erecta* (Berkeley) A. Gepp & ES Gepp (Bryopsidales, Chlorophyta) from urbanized estuaries in the Hawaiian Islands. *Biodiversity data journal*, (6).

## Enclosure

### *Recommended Avoidance and Minimization Measures*

Below is a list of avoidance and minimization measures that you could anticipate to include in your DEIS potential EFHA during EFH consultation.

### Physical Damage

1. Restrict all physical contact with the bottom to unconsolidated sediments devoid of coral and seagrass.
2. Work platforms should be selected based on the following preferential hierarchy:
  - a. conduct all work from land;
  - b. use a barge with auto-positioning systems where thrusters will not cause increased turbidity;
  - c. anchor barges to (1) shoreline infrastructure; (2) nearby existing moorings; (3) anchors or spuds in/on sand only (as possible, have SCUBA divers lay anchors by hand in sand areas).
3. Prior to mobilizing, ensure all construction equipment, ballast, and vessel hulls do not pose a risk of introducing new invasive species and will not increase abundance of those invasive species present at the project location.
4. Minimize physical contact by divers and construction related tools, equipment, and materials with live benthic organisms, regardless of size, especially corals and seagrass.
5. Prevent trash and debris from entering the marine environment through the use of nets or barriers.
6. Relocate infrastructure materials (e.g., riprap, piles, boulders) that are colonized with benthic communities according to an approved relocation plan. Approved plans must ensure corals are moved to adjacent area(s) with similar habitat conditions, onto suitable substrates, using reliable attachment methods, in similar orientations. Monitoring is not required. If infrastructure materials (e.g. riprap, piles, boulders) that are colonized with benthic communities will be removed or destroyed as part of permitted activities, relocate these materials to an appropriate receiving site.
7. Have a qualified marine biologist identify and relocate hard corals that would be otherwise lost to project activities and which can be logistically moved according to an approved relocation plan. Approved plans must ensure corals are moved to adjacent area(s) with similar habitat conditions, onto suitable substrates, using reliable attachment methods, in similar orientations; and corals must be monitored for success (more frequently at the beginning, and for a duration of no less than 2 years). To provide accountability reference corals or a reference reef site should

also be monitored concurrently to compare observed changes.

8. Ensure that new structures minimize shading impacts to marine habitats. Incorporate measures that increase the ambient light transmission under structures. Some of these measures include: maximizing the height of the structure and minimizing the width of the structure to decrease shade footprint; grated decking material; using the fewest number of pilings necessary to support the structures to allow light into under-pier areas and minimize impacts to the substrate; and aligning the boardwalk in a north-south orientation for the path of the sun to cross perpendicular to the length of the structure and reduce the duration of shading
9. Perform pre-deployment reconnaissance (e.g., divers, drop cameras) to ensure that all anchors are set on hard or sandy bottom devoid of corals and seagrass and that chosen anchor locations take into consideration damage that could occur from the anchor chain if the vessel swings due to currents or tides.
10. Require a long-term maintenance plan for gear, instrumentation, and equipment to prevent failures that lead to permanent adverse effects to EFH (e.g., vessel groundings).
11. Ensure structures are properly weighted to prevent movement from currents or waves and implement a maintenance plan to ensure integrity over time.
12. Lower utility lines or cables and maneuver the placement in a controlled manner using SCUBA in order to avoid all coral resources, when practicable.
13. Develop a Wave and Storm Contingency Plan for construction materials and equipment.
14. Develop a monitoring plan to consistently assess the condition of groin materials as well as a contingency plan if the condition is endangering EFH.

### Sedimentation and Turbidity

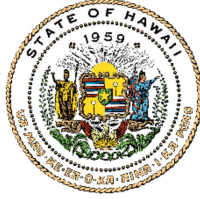
1. Conduct intertidal work at low and or slack tide.
2. Conduct work during calm sea states; stop work during high surf, winds, and currents.
3. Perform work outside of the main coral spawning period in summer (May to August) to minimize sedimentation and turbidity effects to coral eggs and larvae in the area. Peak spawning periods vary by species and geography, and are based on best available science.
4. If appropriate, consider using cofferdams to dewater the project impact site.
5. Install sediment, turbidity, and/or pneumatic curtains, and use real-time monitoring (automated or manual) for barges and dredge vessels to detect failure and implement stop-work processes if pre-determined project thresholds are reached (use standards from Clean Water Act 401 water quality certification). In areas of soft sediment, consider partial length turbidity curtains in order to reduce resuspension of sediment during high winds and currents.
6. Use soft and/or natural engineering solutions to maintain/restore natural flow volumes and velocity.
7. Minimize disturbances to stream banks, and place abutments outside of the floodplain whenever possible. Seek to maintain baseline water flow volume and velocity within the system.
8. Utilize environmental clamshell buckets for mechanical dredging.
9. Design the nourishment activities to maintain or replicate natural stream channel and flow conditions to the greatest extent practicable.
10. Revegetate shoreline areas with appropriate native species and fully stabilize disturbed upland areas prior to removing silt fences and erosion prevention measures.

### Chemical Contamination

1. Conduct work during the dry season when possible; stop work during storms or heavy rains. Neutralize or treat contaminated sediments and/or waters prior to release from the project site.
2. Inspect all equipment prior to beginning work each day to ensure the equipment is in good working condition, and there are no contaminant (oil, fuel, etc.) leaks.
3. All equipment found to be leaking contaminants must be removed from service until repaired.
4. All fueling or repairs to equipment must be done in a location with the appropriate controls that prevents the introduction of contaminants to marine environment.
5. Prevent discharges of chemicals and other fluids dissimilar from seawater into the water column.
6. Use materials that are nontoxic to aquatic organisms, such as untreated wood, concrete, or steel (avoid pressure treated lumber).
7. Use diffusers on the end of subtidal discharge pipes to minimize impacts from discharges.
8. Prevent bentonite drilling fluid from contacting live benthic organisms.

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Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Gerry Davis:

Thank you for your letter dated July 21, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We acknowledge that the proposed actions are subject to the provisions and requirements of the Magnuson Stevens Fishery Conservation and Management Act (MSA) (Section 305(b)(2) as described by 50 CFR 600.920) and the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-666c). We will conduct formal consultations with the NOAA National Marine Fisheries Services (NMFS) and the U.S. Fish and Wildlife Service (USFWS) during the final design and permitting process to ensure compliance with the Essential Fish Habitat (EFH) provisions of the MSA and the FWCA.

Comment: Stressor Effects: Physical Damage: Direct contact to EFH resources (e.g., corals, submerged aquatic vegetation, hardbottom habitat) from removal of existing structures, construction equipment and materials, as well as from installation activities, can lead to permanent and lesser adverse effects. The level of these adverse effects (i.e., short-term, long-term to permanent, and cumulative) will depend on the density and extent of EFH resources present and the dredge and/or sediment retention designs that are chosen. For example, the 2012 Waikīkī Beach Nourishment and Dredging Project resulted in physical damage to the fossil limestone reef rock bordering sand borrow areas that were dredged. Due to this stressor, a variety of measures to avoid and minimize physical damage to EFH may be needed to reduce unavoidable losses. Overall, steps should be taken during dredging and



sand transport to avoid and minimize physical damage to corals and submerged aquatic vegetation. Dredging equipment and turbidity control measures should consider wave energy and provide appreciable buffer space between construction equipment and nearby EFH resources.

Response: We acknowledge that the proposed actions have the potential to impact EFH resources. For information about potential impacts and proposed measures to mitigate or minimize impacts to EFH, please see Section 8.10.1 of the DPEIS. We acknowledge that additional mitigation measures and/or Best Management Practices may be required pursuant to the formal EFH consultation, which will be conducted during the permitting process.

Comment: *Stressor Effects: Sedimentation and Turbidity:* Enhanced sedimentation and turbidity may occur from dredging at borrow areas (e.g., pump heads causing re-distribution and settlement of fine sediment), land-based beach filling activities, after-the-fact leaching of micritic calcium carbonate from beach fill, and sediment resuspension from groins if they alter local hydrodynamics.

Response: We acknowledge that sand recovery, transport, and placement operations have the potential to cause sedimentation and turbidity. The offshore sand sources proposed for use in Waikīkī contain less than 6% fines, which complies with the State of Hawai'i guidelines for beach nourishment projects. Appropriate methods for dewatering and removal of fines to minimize turbidity will be established during the final design and permitting process.

For information regarding sand characteristics and quality, please see the following sections of the FPEIS:

- Section 3.6
- Appendix B

Sea Engineering, Inc. conducted analytical modeling to evaluate the potential impacts of sedimentation on benthic habitat resulting from clamshell dredging for the *Ala Moana* and *Hilton* offshore sand deposits (see Figure 1 and Figure 2 later in this letter). The modeling results indicate that there would be no anticipated impacts to benthic habitat in the vicinity of the sand recovery areas.

For information about the modeling results and potential impacts to benthic habitat, please see the following sections of the FPEIS:

- Section 8.10.1
- Appendix C

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and

associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information regarding water quality and turbidity, please see the following section of the FPEIS:

- Section 8.7

Comment: Stressor Effects: Nutrients and Chemical Contamination: Adverse effects of increased nutrients and chemical contamination may occur during dredging from borrow areas and after beach fill is placed due to release of sediment-bound nutrients and chemical contaminants. The latter may also occur from leaking construction equipment and introduction of treated materials into the marine environment. Sediment chemical analysis will be helpful to help better understand potential impacts.

Response: We acknowledge your concerns regarding the potential for increased nutrients and chemical contamination associated with sand recovery, transport, and placement operations. The *Ala Moana* offshore sand deposit was tested for contaminants for the City and County of Honolulu's Ala Moana Regional Park beach nourishment project. The State of Hawai'i Department of Health concluded that the sand was satisfactory for beach nourishment. There have been no recent events to indicate that the other offshore sand deposits would be contaminated. Best Management Practices (BMPs) will be in place to limit the potential impacts of equipment on the ocean environment. The initial phase of the Program proposes to utilize sand from the *Hilton* offshore sand deposit. If additional sediment chemical analysis is required to confirm that this sand source does not contain unacceptable levels of nutrients or chemical contaminants, that analysis will be conducted during the final design and permitting phase.

Comment: Stressor Effects: Invasive Species: There is a concern that there would be an increased risk of spreading invasive species, which have been detected around at least one proposed sand collection site. *A. erecta* is an invasive species observed in Honolulu Harbor in 2014 (Wade et al. 2018) and patches of *A. erecta* have been observed near the Ala Moana dredging site; there is an increased risk of spreading this species through project activities if they are not deterred through avoidance measures and contingency planning. Invasive species rapidly increase in abundance to the point that they come to dominate their new environment, creating adverse ecological effects to other species of the ecosystem and the functions and services it may provide (Goldberg and Wilkinson 2004). Invasive species can decrease species diversity, change trophic structure, and diminish physical structure, but adverse effects are highly variable and species-specific.

Response: We acknowledge your concerns regarding the potential for the proposed actions to increase the spread of invasive species. *A. erecta* was observed near the *Ala Moana* offshore sand deposit, but not near the *Hilton* offshore sand deposit. Areas where *A. erecta* were observed will be avoided during sand recovery operations. We also note that two common algae species found in Waikīkī are non-native and invasive: *A. spicifera* and *G. salicornia*. These species are widespread off the shores of the Hawaiian Islands and *A. spicifera* is a food favored by green sea turtle. The proposed groin structures in the Halekūlani beach sector are not anticipated to affect species introductions to Hawai'i but may serve as habitat for existing introduced species. Future monitoring events will note any changes in the distribution of *A. spicifera* and other invasive species in Waikīkī.

For information regarding marine biota, please see the following section of the FPEIS:

- Section 8.10

Comment: *Long-term Cumulative Impacts of Beach Nourishment and Groin Construction:* A combination of sea level rise, wave action, and coastal flooding have resulted in considerable erosion and shoreline recession along the coastline in Waikīkī. The IPCC projects that sea level will rise up to 3.2 feet by the year 2100 (Hawai'i Climate Change Mitigation and Adaptation Commission 2017). NMFS is concerned about the cumulative impacts of multiple and repeated beach nourishment and coastal construction projects on EFH within and surrounding the project area. NMFS has recently consulted on and provided conservation recommendations for several of the previous beach maintenance projects in Waikīkī including Waikīkī Beach Maintenance I, the Kuhio sandbag groin, and the Royal Hawaiian groin replacement. In addition, NMFS consulted on the nearby Ala Moana Beach Park Beach Nourishment project in April 2020 (POH-2019-00194). The DEIS indicates that the proposed actions are part of a larger Waikīkī Beach Management Plan and Ho'ōmau 'O Waikīkī Kahakai, which lays out guidance for beach management, improvement, and maintenance projects in Waikīkī. As the lifespan of the proposed work is stated to be about 50 years, the intention is to continue beach maintenance project in phases over time. NMFS is concerned about the need for repeated beach renourishment and coastal construction and the repeated stressors and unavoidable loss that could occur over time, which will degrade the condition of water column and substrate EFH that support the feeding, breeding, spawning, and growth of Federally managed fish species.

Response: The Waikīkī Beach Improvement and Maintenance Program consists of *beach improvement* actions and *beach maintenance* actions. *Beach improvements* refers to actions that involve adding new sand, adding new structures, and/or modifying existing structures. *Beach maintenance* refers to actions that involve using existing sand or adding sand with no new structures or modification of existing structures.

The proposed *beach improvement* actions in the Halekūlani beach sector and the 'Ewa (west) basin of the Kūhiō beach sector are designed to create a stable beach profile. The designs account for 1.5 ft of sea level rise and can be adapted to accommodate up to 3.2 ft of sea level rise. We anticipate that the beaches would be stable and periodic renourishment would not be required.

The proposed action for the Fort DeRussy beach sector is beach maintenance consisting of an initial small-scale beach nourishment effort followed by periodic sand backpassing. The purpose of the proposed action is to widen the east end of Fort DeRussy Beach, which is chronically eroding and in a narrow, deteriorated condition. The proposed action will be implemented in phases. The first phase will consist of placement of sand recovered from the Hilton offshore sand deposit. The second phase will consist of periodic sand backpassing of existing beach sand to maintain the desired beach width and profile. No new structures or modifications to existing structures are proposed at this time.

The proposed *beach maintenance* action in the Diamond Head (east) basin of the Kūhiō beach sector is sand pumping, which would involve recovering approximately 4,500 cy of existing sand from within the basin onto the dry beach. The proposed action would not require offshore dredging and there would be no increase in the volume of sand in the basin.

The proposed *beach maintenance* action in the Royal Hawaiian beach sector is beach nourishment, which would involve recovering approximately 25,000 cy of sand from the *Canoes/Queens* offshore sand deposit and placing it on the beach. This is the only action proposed that would require periodic renourishment to maintain the beach at its 1985 location. The *Canoes/Queens* offshore sand deposit has been used in previous beach nourishment projects in Waikīkī in 2012 and 2021. Reusing this sand on a periodic basis would not increase the volume of sand in the littoral system.

Chapter 11-200.1, HAR does not specify an expiration date for environmental review documents. For the purposes of the proposed Program, we anticipate that it will take 10 years to allow the proposed actions to be implemented sequentially. However, we acknowledge that follow-on studies or additional environmental review may be required under certain circumstances. For example, if any of the proposed actions change substantively in size, scope, intensity, use, location, or timing, among other things, a Supplemental EIS may be required.

For information about anticipated project lifespans and project phasing, please see the following sections of the FPEIS:

- Section 3.3
- Section 3.4

For information about the potential impacts of the proposed actions, please see the following sections of the FPEIS:

- Section 8
- Section 9

For information about the cumulative impacts of the proposed actions, please see the following section of the FPEIS:

- Section 10

Comment: *Lack of Sediment, Water Flow, and Current Modeling:* Data and evaluation of marine currents, water flow, and sediment plume modelling are recommended near sand donor sites to justify final locations and clarify potential adverse effects to EFH from sediment resuspension and deposition during dredge operations and after beach nourishment. The modelling effort should also include and consider the following areas: the groin footprints, between the groins, offshore of the groins, and offshore sand borrow areas. NMFS is concerned that sediment deposition may occur over sensitive and hard-to-replace hard-bottom habitat, corals, or submerged aquatic vegetation (e.g., seagrass) during dredging activities at borrow sites and after during and after beach nourishment. There is an additional concern that changes in longshore currents due to T-groin construction would cause a decline in flushing and therefore water quality. Completing the modelling effort and including it in the EFHA would help reduce uncertainty and better inform conservation recommendations. If there is a high probability that sediment resuspension and deposition will occur over sensitive and hard-to-replace hard-bottom habitat, corals, and submerged aquatic vegetation, these areas should be prioritized survey areas both before and after construction.

Response: We acknowledge that dredging operations have the potential to impact benthic habitat in the vicinity of the sand recovery areas. Sea Engineering, Inc. conducted analytical modeling to evaluate the potential impacts of sedimentation on benthic habitat resulting from clamshell dredging for the *Ala Moana* and *Hilton* offshore sand deposits. (see Figure 1 and Figure 2). The modeling results indicate that there would be no anticipated impacts to benthic habitat in the vicinity of the sand recovery areas. We have not conducted analytical modeling to evaluate the potential impacts of sedimentation on benthic habitat resulting from dredging activities for the *Canoes/Queens* offshore sand deposit. This deposit has been used in previous beach nourishment projects in 2012 and 2021. Sand recovery for those projects was accomplished using a hydraulic suction dredge and pumping the sand through a high-density polyethylene (HDPE) pipe to a dewatering basin in the Diamond Head (east) basin of Kūhiō Beach Park. We have selected hydraulic suction dredging as the preferred dredging method for the Program. When compared to clamshell dredging, hydraulic suction dredging significantly reduces the potential for sedimentation that could impact benthic habitat.

For information about the modeling results and potential impacts to benthic habitat, please see the following sections of the FPEIS:

- Section 8.10.1
- Appendix C

Sea Engineering, Inc. also conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation, which can alter bathymetry. Dredging could occur at the *Ala Moana*, *Canoes/Queens*, or *Hilton* offshore sand deposits; however, dredging during the initial phase of the Program would be limited to the *Hilton* offshore sand deposit. Wave modeling was used to assess the impact of dredging on waves, currents, and nearby surf sites. A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect

waves that could negatively impact surf sites. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For more information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Comment: *Unconfirmed Dredge Methods:* NMFS is concerned that there is a lack of detail on the final methods for dredging sand onto sectors of the beach. The 2012 dredging in Waikīkī resulted in the leaching and resuspension of micritic calcium carbonate. The Ala Moana Beach Nourishment consultation from the USACE suggested that the dredge method from 2012, which included the pumping of sand through small diameter hoses, resulted in the mechanical breakdown of sand sized particles resulting in portion that was much smaller (e.g., <4 microns). Finer grain sand could more easily cause sedimentation and decreased water quality to surrounding coral and hardbottom habitat. The DLNR OCCL should ensure that the dredging methods avoid duplicating the same method that may have resulted in the enhanced presence of micritic calcium carbonate in 2012.

Response: We acknowledge that sand recovery, transport, and placement operations have the potential to cause turbidity. The cause of the turbidity generated during the 2012 Waikīkī Beach Maintenance I project has not been positively identified. The 2021 Waikīkī Beach Maintenance II project included sampling and analysis of sand from the dredging and stockpile sites to help determine the cause of the turbidity. That sampling is ongoing, and results are not yet available. However, post-construction monitoring of the offshore sand recovery area identified a consolidated layer of micritic calcium carbonate in the lower portions of the sand deposit, which could potentially explain the unanticipated levels of turbidity.

While it is not feasible to mitigate the potential for turbidity associated with construction, appropriate environmental avoidance and protection measures will be implemented to minimize impacts to the maximum extent practicable. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective environmental protection and avoidance measures during construction.

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately

contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction. The BMPP will require the Contractor to implement appropriate and effective measures to minimize air and noise impacts during construction. The Contractor will also obtain a Community Noise Permit and Air Pollution Permit from the Hawai'i Department of Health prior to construction.

For information regarding sand recovery and transport options, please see the following section of the FPEIS:

- Section 3.7

For information regarding water quality and turbidity, please see the following section of the FPEIS:

- Section 8.7

Comment: *Unknown final locations, composition, and surrounding habitats of sand collection sites:* Several sand collection site options were described in the DEIS. NMFS is concerned about the lack of information about sand collection sites as the final decision will affect the EFH adverse effect and stressor analyses. Descriptions of the final locations should include sand composition and grain size, species and size classes for any adjacent coral or area of seagrass resources, presence or absence of invasive species, and the oceanographic setting. Marine resource survey assessments should be conducted over and along both hard and soft bottom (e.g., sand, unconsolidated sediment, etc.) substrate; however, surveys should ensure that coral and seagrass habitats are prioritized, and that surveys and data are statistically powerful.

Response: We acknowledge that the proposed actions have the potential to impact benthic habitat in the vicinity of the sand recovery areas. Potential impacts to benthic habitat and marine protected species are discussed in Section 8.10.1 of the FPEIS. A detailed Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective environmental protection and avoidance measures during construction. Measures to mitigate or minimize potential impacts to benthic habitat include strategic anchoring to avoid coral reefs, use of a hydraulic suction dredge to minimize turbidity during sand recovery operations, and active monitoring and avoidance measures to prevent any interaction with or disturbance of marine protected species. Final selection of the sand recovery areas will be based on comments received on the DPEIS and formal consultations with various agencies during the final design and permitting phase. If necessary, additional quantitative resource surveys may be conducted to inform the ESA-EFH consultations process.

For information regarding the potential offshore sand sources, please see the following section of the FPEIS:

- Section 8.10.1

Comment: *Uncertainty of distribution of coral and seagrass throughout the project area:* NMFS is concerned about the lack of quantitative data on habitat types and the presence or absence

of coral and seagrass throughout the project area. Quantitative resource survey assessments were anticipated in the DEIS but were not provided; they should be included for the EIS and EFHA. Without this information, NMFS would be concerned about the lack of information on how project activities could affect habitat-forming EFH resources. If high uncertainty remains, NMFS must assume habitat-forming resources will be adversely affected by the project activities. The assumption would be that adverse effects may require coral and/or seagrass transplantation minimization and if there could be unavoidable loss, then offset measures to compensate for those losses must be in place.

Response: We acknowledge that the proposed actions have the potential to impact habitat-forming resources. A Baseline Assessment of the Marine Biological Environment was prepared by AECOS, Inc. in April 2021 (see Appendix C). Biologists conducted surveys to inventory marine assemblages in the nearshore waters within the project area. Biologists used snorkel gear to collect data on bottom type; coral colony size-frequency (size, diversity, new recruits, large colonies, health); diversity, identification, and categorization (common vs. uncommon) of algae (including crustose coralline algae) and seagrass; and non-coral macro-invertebrates greater than 3 cm. Based on the findings of the assessment, no significant adverse impacts to habitat-forming resources are anticipated.

A detailed Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective environmental protection and avoidance measures during construction. Measures to mitigate or minimize potential impacts to habitat-forming resources include strategic anchoring to avoid coral reefs, use of a hydraulic suction dredge to minimize turbidity during sand recovery operations, and active monitoring and avoidance measures to prevent any interaction with or disturbance of marine protected species. Final selection of the sand recovery areas will be based on comments received on the DPEIS and formal consultations with various agencies during the final design and permitting phase. If necessary, additional quantitative resource surveys may be conducted to inform the ESA-EFH consultations process.

Comment: *Use of geotextile sandbags:* NMFS is also concerned about the existing Kuhio Sandbag groin and the continued use of geotextile sandbags. It was unclear in the DEIS if the sandbags will be removed, left in place, or buried during future beach nourishment. As they were intended as a short-term solution to coastal erosion, the EFHA should detail plans for the sandbags and their future lifespan.

Response: We acknowledge your concerns regarding the use of geotextile sandbags. The University of Hawaii Climate Resilience Collaborative has conducted periodic monitoring of the Kūhiō Sandbag Groin. Initial findings based on approximately one year of survey data indicate that the groin is functioning as intended. The efficacy of the groin is evident by significant sand buildup on the Diamond Head (east) side of the structure throughout the year, indicating that longshore transport was altered as intended to mitigate extreme erosion at this section of beach. Sediment capture by the groin has not resulted in significant erosion on the 'Ewa (west) side of the structure, which would be evidenced by sediment depletion and flanking directly adjacent to the



structure. Overall, one year following completion the structural integrity and efficacy of the groin structure has been confirmed. No adverse effects of the project have been observed. No significant deficiencies with the ElcoRock sandbags and/or the overall groin performance have been observed. The effectiveness or need for the structure will be further evaluated after we accomplish improvements to the 'Ewa (west) basin in the Kūhiō beach sector.

For information about the Kūhiō Sandbag Groin, please see the following section of the FPEIS.

- Section 9.4.4

Comment: *Additional adverse effects to EFH:* Finally, NMFS is concerned that there are a variety of adverse effects from stressors on EFH that have not been fully considered in the DEIS. Short-term, long-term to permanent, and cumulative adverse effects to EFH may occur from the preferred alternative due to physical damage, sedimentation and turbidity, introduction of invasive species, and nutrients and chemical contamination.

Response: We acknowledge your concerns regarding potential adverse effects from stressors on EFH. While it is not feasible to mitigate all of the potential impacts associated with construction, appropriate environmental avoidance and protection measures will be implemented to minimize impacts to the maximum extent practicable. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective environmental protection and avoidance measures during construction. We acknowledge that there will be physical impacts associated with construction. We have presented analyses on sedimentation and turbidity (see Section 8.10.1 of the FPEIS). The marine biological assessment identified no *A. Erecta* near the proposed offshore sand deposit. Furthermore, we infer from the sand analysis of the *Ala Moana* offshore sand deposit that *Hilton* sand deposit will have similar characteristics.

Comment: *EFH Assessment Content:* An EFHA should be included for the upcoming EFH consultation, and specific content should be considered for inclusion to inform an EFH determination and the EFH effects analysis. If a USACE permit is required, the USACE would be the lead federal action agency responsible for developing the EFHA. As described in the DEIS, before the USACE permit application process is initiated, we recommend that quantitative marine resource survey assessments, new sediment modeling, robust sediment testing, and water quality monitoring are conducted; in addition, we recommend that your water quality monitoring plan include assessments before (e.g., baseline), during, and after construction activities (see below). The EFHA should consider the full suite of potential stressors to habitat forming EFH. Below we provide details related to these concerns and guidance on how these issues can be resolved through continued early coordination. In addition, we provide an Enclosure at the end of this letter with specific avoidance and minimization measures that would be applicable to the project.

Response: We acknowledge that an EFHA will be required during the formal EFH consultation. We will ensure that the EFHA addresses the stressors identified in your comment letter. We further acknowledge that additional mitigation measures and/or

Best Management Practices may be required pursuant to the formal EFH consultation, which will be conducted during the permitting process.

Comment: *Mitigation and Unavoidable Loss:* If the proposed activities will adversely affect EFH, various forms of mitigation (e.g., avoidance, minimization, and compensation to offset losses; see FR 85 43350 and CEQ 2011 Guidance) may be required, including the potential transplantation of corals and seagrass. In such cases, a minimization plan with post-transplantation monitoring for survivability should be included in the EFHA for evaluation. If unavoidable loss is expected due to proposed activities, these losses should be quantified and a plan to offset the losses of ecosystem services should be included in the EFHA. Information on the species; abundance, size and total area lost; and locations should be included in the offset plan. NMFS also recommends a habitat suitability analysis for any transplantation site.

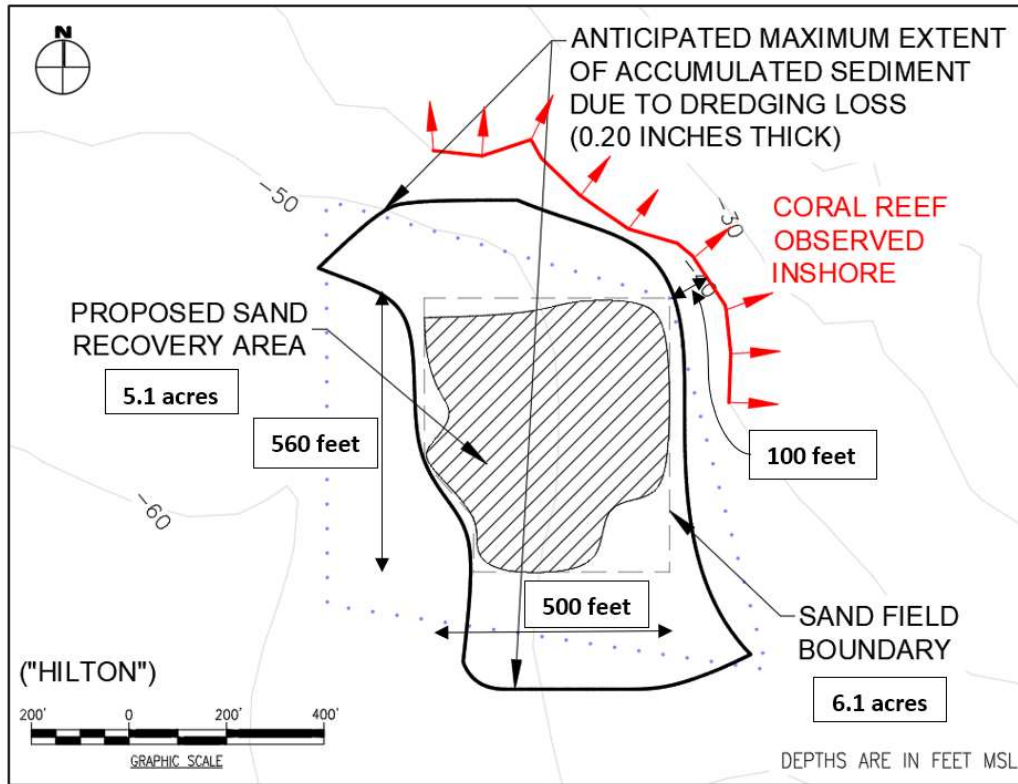
Response: We will ensure that the EFHA addresses the stressors identified in your comment letter. We further acknowledge that additional mitigation measures and/or Best Management Practices may be required pursuant to the formal EFH consultation, which will be conducted during the permitting process.

Comment: *Quantitative Resource Survey Assessments:* We recommend that you conduct preliminary, quantitative benthic marine survey assessments of the entire project footprint area within the littoral cell—hard and soft bottom, groin footprints, between groins, offshore of the groins, where sediment models predict deposition, and offshore sand borrow areas—before an EFH consultation is initiated. The level of complexity of surveys will scale proportionally with the extent of habitat forming EFH resources (e.g., corals and submerged aquatic vegetation) that may suffer adverse effects (i.e., direct, indirect, and cumulative). Contingencies should be designed to accommodate analyses that require greater replication and higher statistical power to avoid the need to obtain higher resolution data. Hard-bottom and areas with habitat forming EFH should be prioritized over soft bottom substrate, though it will be important to characterize the latter. Post-action monitoring plans would reduce uncertainty during potential EFH offset determinations. Completing the survey work and including it in the Draft EIS and EFHA would help reduce uncertainty and better inform EFH conservation recommendations and any potential offset determinations for unavoidable loss. NMFS is ready and willing to provide assistance to further refine and clarify the types and complexity of survey information to potentially include for any EFH consultation.

Response: A Baseline Assessment of the Marine Biological Environment was prepared by AECOS, Inc. in April 2021 (see Appendix C). Biologists conducted surveys to inventory marine assemblages in the nearshore waters within the project area. Biologists used snorkel gear to collect data on bottom type, coral colony size-frequency (size, diversity, new recruits, large colonies, health); diversity, identification and categorization (common vs. uncommon) of algae (including crustose coralline algae) and seagrass; and non-coral macro-invertebrates greater than 3 cm. We feel that their report contains sufficient information for environmental review purposes. The proposed actions and areas of potential affect will be better defined during the final design and permitting phase, at which time we acknowledge that additional quantitative resource surveys may be required.

Comment: *Sediment Modeling:* Sediment modeling is recommended to predict how the preferred alternative may adversely affect EFH substrate (e.g., hard and soft bottom), habitat forming EFH (e.g., corals and submerged aquatic vegetation), and water column EFH. Modeling should consider how T-groins may alter sediment deposition over time. We are particularly concerned about redistribution and settling of fine sediment including limestone mud (i.e., microcrystalline calcium carbonate <4 microns in diameter) that may leach from beach fill and smother habitat forming EFH that may be nearby. The modelling effort should include and consider the following areas: the groin footprints, between the groins, offshore of the groins, sand nourishment areas, and offshore sand borrow areas. If there is a high probability that sediment deposition will occur over sensitive and hard-to-replace hard-bottom habitat, corals, and submerged aquatic vegetation, these areas should be prioritized survey areas both before and after construction. Completing the modelling effort and including it in the Draft EIS and EFHA would help reduce uncertainty and better inform EFH. If there is a high probability that sediment deposition will occur over sensitive and hard-to-replace hard-bottom habitat, corals, and submerged aquatic vegetation, these areas should be prioritized survey areas both before and after construction.

Response: A Baseline Assessment of the Marine Biological Environment was prepared by AECOS, Inc. in April 2021 (see Appendix C). In the Halekūlani beach sector, the proposed groins and beach fill are designed to produce a stable beach. As evidenced by long-term monitoring of the Iroquois Point Beach Restoration and Stabilization project, we anticipate that only a nominal volume of sand would escape the groins; therefore, we do not anticipate any adverse impacts to benthic habitat. Marine Research Consultants, Inc. (MRC) previously identified the locations of corals and seagrass around the *Hilton* offshore deposit site and conducted a sedimentation analysis to evaluate potential impacts. Using published data for sediment loss from dredging and local currents, an approximate footprint of sediment impact was developed. The following image illustrates the location of the resource and the expected sedimentation.



**Figure 1** Sediment plume modeling results for *Hilton* offshore sand deposit

**Comment:** *Sediment Testing:* Sediment testing should be robust and specific; it should be done before sediment is collected from borrow sites and after it is deposited on beaches. The latter would help minimize the potential resuspension of micritic calcium carbonate by informing contingency planning and sedimentation control measures. Information about sediment chemistry, nutrient content, and other chemical characterization should be considered for both bulk samples (i.e., all size fractions) and within each size fraction or sediment class (e.g., mud, silt, fine sand, sand, etc.). This would be helpful because smaller size fractions that include silt and mud classes typically retain higher organic carbon content and are more detrimental to habitat forming EFH than those sediment types with larger sizes. In addition, micritic calcium carbonate is more difficult for hard corals to clear off of their tissue, and can result in mortality. This information should also be considered for inclusion in the Draft EIS and EFHA to inform conservation recommendations and potential offset determinations. Completing the sediment testing effort and including it in the Draft EIS and EFHA would help reduce uncertainty and better inform EFH conservation recommendations and any offset determinations.

**Response:** During the Ala Moana Regional Park Beach Nourishment Project, the Ala Wai Canal and small boat harbor were identified as potential sources of pollutants and sediment analyses were performed for the *Ala Moana* offshore sand to identify potential contaminants. The first evaluation for potential contamination is grain size analysis according to EPA guidelines. Contaminants are known to bind to particles finer than sand, and not to the sand-sized particles contained in the offshore sand deposits.

Additionally, the Ala Wai Canal acts as a settling basin, and most of the harmful material is expected to settle out within the canal. The turbid outflow from the canal has low or zero salinity and is buoyant, (i.e., it floats on the denser ocean water) and is expected to pass far from the sand deposits as it slowly mixes with the ocean water.

The City and County of Honolulu commissioned sand sampling and testing of the *Ala Moana* offshore sand for contaminants, including heavy metals, Mercury, polychlorinated biphenyls (PCB), pesticides, hydrocarbons, dioxins, and bacteria. This list is consistent with other dredging projects in Hawai'i. The *Ala Moana* offshore sand was found to contain nominal amounts of arsenic and total petroleum hydrocarbons (TPH). No additional contaminants were detected. The Hawai'i Department of Health reviewed the results of the sediment analysis and approved the use of the *Ala Moana* offshore sand to nourish the beach. The sand utilized for the Iroquois Point Beach Nourishment and Stabilization project, which was obtained from the Pearl Harbor Channel, was also tested and confirmed to not be contaminated prior to placement on the beach. For these reasons, we do not anticipate that the sand in the *Hilton* offshore sand deposit would be contaminated, nor do we think that additional testing is required to confirm the viability of this sand for the purpose of beach nourishment.

Comment: *Water Quality Monitoring:* Robust water quality monitoring (e.g., turbidity, sedimentation rates, nutrients, dissolved oxygen, etc.) would be helpful to assess conditions before (i.e., baseline), during, and after beach restoration activities. These activities should be informed by the sediment modeling and daily tide and current velocity predictions to select sampling locations (<https://www.pacioos.hawaii.edu/voyager/>). Special attention and consideration should be placed on collecting turbidity and sedimentation rate information at areas where there are habitat forming EFH resources, including corals and submerged aquatic vegetation (e.g., seagrass). For other criteria needed for beach restoration projects, NMFS would defer to the requirements of the Environmental Protection Agency (EPA) delegated through the state of Hawai'i, Department of Health, Clean Water Branch's (DOH), 401 Water Quality Certification (WQC), Applicable Monitoring and Assessment Plans (AMAP). Completing the water quality monitoring planning effort and including it in the Draft EIS and EFHA would help reduce uncertainty and better inform EFH conservation recommendations and any offset determinations.

Response: Sea Engineering, Inc. performed a sedimentation analysis for the Ala Moana Regional Park Beach Nourishment Project, which included both the *Ala Moana* and *Hilton* offshore sand deposits (Figure 1 and Figure 2, respectively). The analysis showed that the sedimentation rate was substantially less than the seagrass growth rate, and we anticipate similar results for the proposed actions in Waikiki. Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction.

A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on

shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

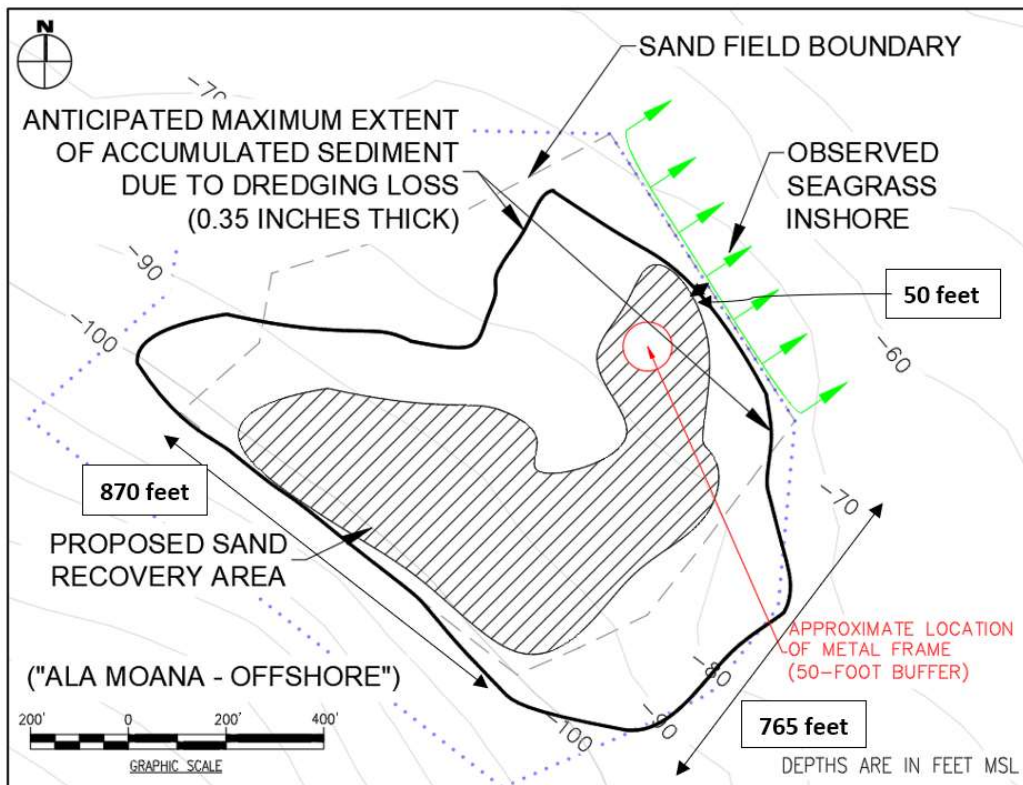
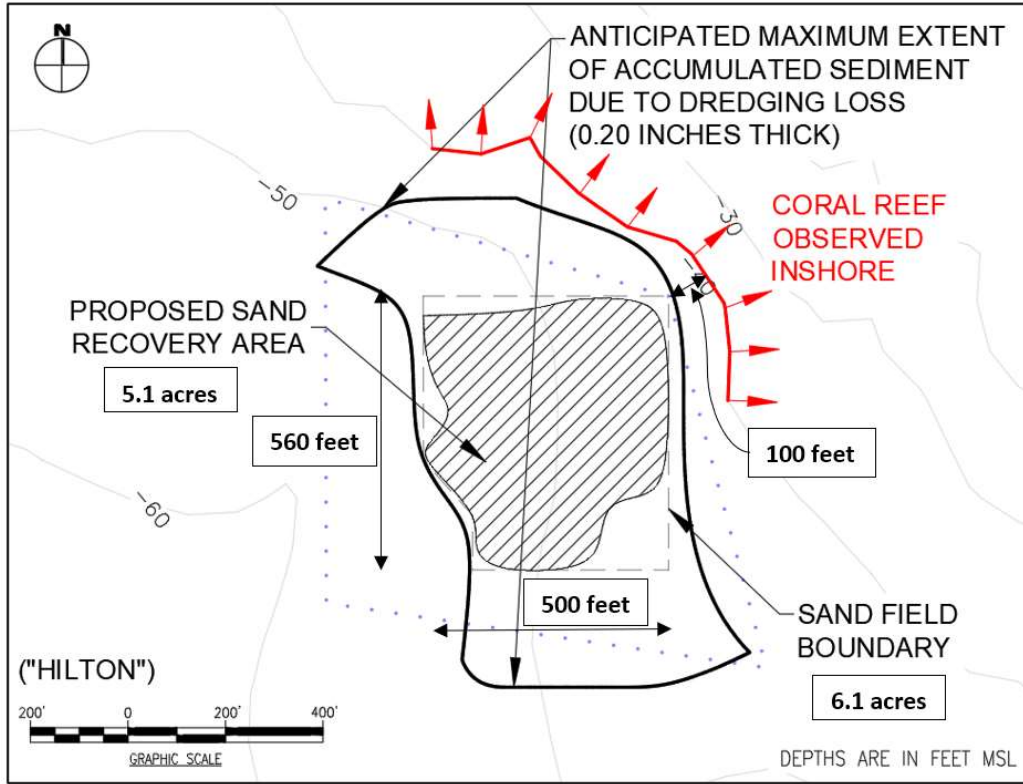


Figure 1 Sediment plume modeling results for *Ala Moana* offshore sand deposit



**Figure 2 Sediment plume modeling results for *Hilton* offshore sand deposit**

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



July 21, 2021

Sea Engineering Inc.  
Makai Research Pier  
41-305 Kalaniana'ole Hwy  
Waimanalo, HI 96795  
ATTN: Andy Bohlander  
waikiki@seaengineering.com

**SUBJECT:** Draft Programmatic Environmental Impact Statement (DPEIS) for the Waikīkī Beach Improvement and Maintenance Project. Waikīkī Beach, Oahu

The Waikīkī Beach Special Improvement District Association (WBSIDA) **strongly supports** the proposed beach improvement projects by the Hawai'i Department of Land and Natural Resources (DLNR). The proposed beach improvement and maintenance projects are an essential component to the overall resilience of this critically important area. The proposed projects in the Fort DeRussy, Halekulani, Royal Hawaiian, and Kūhiō Beach sectors of Waikīkī are critical projects to mitigate the forecast impacts of sea-level rise as well as the observed beach loss and coastal inundation already being experienced on a more frequent basis in Waikīkī. The proposed actions to restore and improve Waikīkī's public beaches and increase beach stability through improvement and maintenance of shoreline structures will greatly enhance safe access to and along the shoreline and greatly reduce the vulnerability of Waikīkī to coastal hazards and sea level rise. We are now at a crossroads with a clear and increasingly urgent need to implement maintenance and improvements to the shoreline in order to preserve and protect this unique and highly prized natural resource.

The Hawai'i Sea Level Rise Vulnerability and Adaptation Report<sup>1</sup> found that 3.2 feet of sea level rise will have profound impacts on O'ahu. \$12.9 billion in structures and land could be lost; 3,800 structures could be flooded, including hotels and resorts in Waikīkī; over 13,000 residents could be displaced; and nearly 18 miles of major roads could be flooded. The report estimates that O'ahu will account for an estimated 66% of the total statewide economic losses due to sea level rise. The State recommended that private and public entities in Waikīkī should begin planning for sea level rise adaptation, including beach restoration, to prepare for higher sea levels in the future, the WBSIDA whole-heartedly agrees.

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<sup>1</sup> Hawai'i Climate Change Mitigation and Adaptation Commission. 2017. *Hawai'i Sea Level Rise Vulnerability and Adaptation Report*. Prepared by Tetra Tech, Inc. and the State of Hawai'i Department of Land and Natural Resources, Office of Conservation and Coastal Lands. Page 152-162



The WBSIDA supports comprehensive, forward-thinking improvement projects like those proposed in the DPEIS and recognizes its urgency. With the combination of beach erosion and King Tides, the backshore is frequently flooded, particularly during high surf events, accelerating damage to backshore infrastructure. Without beach improvements and maintenance, sea level rise is likely to result in total beach loss in Waikīkī before the end of the century and result in an estimated economic loss of \$50 million to \$150 million per hectare<sup>1</sup>. The loss of Waikīkī Beach alone would result in an annual loss of \$2.223 billion in visitor expenditures<sup>2</sup>. Improvements and maintenance like those proposed in the DPEIS are necessary to restore and maintain the beaches of Waikīkī to continue to support Hawaii’s tourism-based economy.

The history of Waikīkī as a predominantly engineered shoreline is an important environmental rationale for a project of this scale and nature. The beaches of Waikīkī are all manmade or highly altered, almost entirely composed of imported sand and the current shoreline configuration is largely the result of past construction efforts to widen and stabilize the beaches. Likewise, most of the beaches of Waikīkī are chronically eroding, with frequent backshore flooding, particularly during high tides and high surf events. Over the past several years, and as recently as this year, Waikiki has experienced record high tides (referred to as King Tides) that have exacerbated erosion and flooding. These events have highlighted the impacts of sea level rise on the beaches of Waikīkī. As sea levels continue to rise, beach loss will progressively degrade the recreational, social, cultural, environmental, aesthetic, and economic value of Waikīkī. The Royal Hawaiian groin was rebuilt in 2020, after nearly 50 years without any new beach stabilization projects in Waikīkī. The proposed improvements in this project come a critical time of renewal and much-needed maintenance of critical beach-stabilizing structures throughout Waikīkī Beach.

Waikīkī Beach is a globally recognized icon of Hawai‘i and is the state’s largest tourist destination. Waikīkī generates approximately 42% of the state’s visitor industry revenue and is responsible for 8% (\$5 billion) of the Gross State Product<sup>3</sup>. Beaches are a primary attraction for visitors to Waikīkī and we know that Waikīkī Beach accounts for over \$2 billion in annual income for the local economy. However, a 2008 visitor survey found that 12% of visitors would not return to Waikīkī due, in part, to limited beach area and resulting overcrowding<sup>4</sup>. Waikīkī Beach also has tremendous cultural significance as a former playground of Hawaiian royalty and the birthplace of the sport and culture of surfing. The beaches and myriad of world-renowned surf breaks and reef ecosystem located offshore are valuable natural resources that support the culture and lifestyle of Hawai‘i, and the idyllic image of Waikīkī. Preserving, restoring and maintaining these beach resources are of critical importance for the social, cultural, economic and environmental value for Hawai‘i’s communities.

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<sup>2</sup> Tarui, N., Peng, M., Eversole, D. (2018). *Economic Impact Analysis of the Potential Erosion of Waikīkī Beach*. University of Hawai‘i Sea Grant College Program. April 2018.

<sup>3</sup> <http://www.waikikibid.org/>

<sup>4</sup> Waikīkī Improvement Association (2008) *Economic Impact Analysis of the Potential Erosion of Waikiki Beach, Final Report*.

The WBSIDA offers the following summary of project-specific comments.

1. The proposed beach improvement projects in Waikīkī are essential for the future goal to maintain a viable beach in these areas. Several beachfront areas in Waikīkī are seeing the rapid deterioration of both public and private backshore infrastructure such as groins, seawalls and walkways. This highlights the need to make long-term investments into beach stabilizing structures throughout Waikīkī in addition to more immediate emergency repairs to damaged infrastructure.
2. Climate change impacts including sea-level rise projected by the state of Hawai‘i Climate Change Commission indicate significant flooding, wave overtopping and beach erosion in Waikīkī for the coming decades and suggest stakeholders and communities plan for 3.2 feet of sea-level rise now. This project has a strong climate change adaption component that is consistent with the recommendations of the State Climate Commission.
3. A project benefit to cost analysis was completed by the U.S. Army Corps of Engineers in 2002 to determine Federal interest in restoring and improving Waikiki Beach, with a ratio greater than one indicating that benefits exceeded costs<sup>5</sup>. The overall benefit to cost ratio for all of Waikiki was about 6 to 1. The total Waikiki Gross National Product (GNP) contribution to the annual Federal economy is an estimated \$3.3 billion. This estimate excludes spending by mainland west coast visitors.
4. The proposed projects are consistent with existing engineering standards and planning studies for Waikiki Beach improvements, and are capable of being implemented as phased or stand-alone projects.
5. The stated project objective to increase the resilience to climate change and coastal hazards cannot be overstated, this is an extremely common concern shared by Waikīkī stakeholders.
6. The WBSIDA has agreed in concept, to provide a partial project match as part of a public-private partnership demonstrating the value and economic importance of this project to the stakeholders and community of Waikīkī.
7. Alternative groin design recommendations, including T-Head groins have been previously assessed and recommended as possible strategies for beach improvements in Waikīkī<sup>6,7</sup>.

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<sup>5</sup> U.S. Army Corps of Engineers (2002). *Waikīkī Beach Erosion Control Reevaluation Report: Island of O‘ahu, Hawai‘i*. Honolulu District.

<sup>6</sup> *Beach and Surf Parameters in Hawaii* (Gerritsen, 1978), *Final Environmental Assessment, Kuhio Beach Improvements* (Noda, 1999), *Independent Evaluation Study of Proposed Kuhio Beach Improvements* (Bodge, 2000)

<sup>7</sup> Sea Engineering, Inc. (2008). *Environmental Assessment / Environmental Impact Statement Preparation Notice for Gray’s Beach Restoration Project*. Waikīkī, O‘ahu, Hawai‘i. Prepared for Kyo-ya Hotels & Resorts LP. SEI Job No. 25103. August 2008.

Other examples such as Iroquois Point at Pearl Harbor demonstrate the successful use of T-head groins in a similar nearshore setting.

8. Without a stabilizing and energy-buffering beach to protect public and private coastal infrastructure, the WBSIDA anticipates even larger and more expensive structural repair and improvement projects to be required soon to prevent the destruction of threatened coastal structures.
9. The WBSIDA supports all the proposed projects in the DPEIS but would like to highlight and emphasize the urgent need for mitigation to wave and tide-induced impacts in the Halekulani (Gray's Beach) cell. The WBSIDA supports prioritizing some form of improvement in this section since this region demonstrates the most severe impacts which are impacting lateral public access in addition to other structural impacts to shoreline structures in the area. There are significant public safety issues related to lateral beach access to and along public walkways present in this section that require immediate attention in addition to long-term stabilization efforts.

WBSIDA is a 501©3 non-profit which has committed to partially supporting beach improvement projects in the Waikīkī district as a public-private partnership. The WBSIDA looks forward to further developing the project scope in partnership with the DLNR. Thank you for the opportunity to provide comments on this project.

Sincerely,

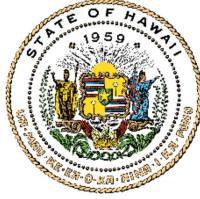


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Rick Egged, President  
Waikīkī Beach Special Improvement District Association

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Rick Egged  
[rick@waikikiimprovement.com](mailto:rick@waikikiimprovement.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Rick Egged:

Thank you for your letter dated July 21, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Tiare lawrence <tiare4maui@gmail.com>  
**Sent:** Thursday, July 22, 2021 12:24 PM  
**To:** Waikiki  
**Cc:** sam.j.lemmo@hawaii.gov  
**Subject:** Waikiki beach

History has proven us time and time again that when humans disrupt the natural ebb and flow of sand it creates flanking erosion down shore causing a domino effect to our shorelines. We must submit our concerns and comments by tomorrow! Email comments to [waikiki@seaengineering.com](mailto:waikiki@seaengineering.com) and [sam.j.lemmo@hawaii.gov](mailto:sam.j.lemmo@hawaii.gov)

Some of the concerns:

- This project could potentially change the current making it dangerous for off shore users.
- The purported “need” for the beach nourishment is to improve beach recreation, but none of the impacts of increased beach usage are reviewed or disclosed.
- There is no requirement for an enforceable managed retreat plan.
- Will disrupt the natural ebb and flow of the ocean
- **-t-groins is a very expensive short term band aid fix that could potentially lead to more damage down shore**
- When big storms occur, groins direct strong currents that carry large amounts of sand seaward, in an off shore direction parallel to the groins.
- The negative impact of groins on downdrift shorelines is well understood. When a groin works as intended, **sand moving along the beach** in the so-called downdrift direction is trapped on the updrift side of the groin, causing a sand deficit and increasing erosion rates on the downdrift side.
- T-groins will also change the waterflow patterns and currents in this area.
- T-groins cause flanking erosion on either ends of the groins. This is currently occurring at Ewa beach.
- The current acceleration of sea level rise and chronic erosion events across Hawai‘i warrant that the state and this Project provide a more formal evaluation of coastal adaptation and enhanced resilience options, including managed retreat.

Please request the following marine-related mitigation before any “improvements” be considered:

1. Schedule public meetings for the ocean recreation users to voice their concerns about the proposed project.
2. Implement thorough inspections of all hotels and businesses for damaged and/or leaking plumbing, poor drainage, or problems with sewage and/or grey water leakage.
3. Acknowledge that repeated offshore dredging of sand fronting the hotels and its placement on the shoreline introduces more silt into the ocean which negatively impacts marine life, reef and corals along with the clarity of the ocean. Once acknowledged and documented, viable plans must be implemented that will prevent activities and any future construction projects that generate silt, runoff, and other polluting elements that negatively impact Waikiki’s waters.
4. Propose and insist that hotels and respective businesses hire community-approved ocean water quality inspectors to measure, document, and recommend effective methods of mitigating

negative impacts of silt and runoff in Waikīkī waters from the shoreline to at least 200 yards or more offshore. Hotels and businesses must be required, by law, to protect ocean water quality and its clarity.

5. Document clearly and definitively that construction of any future groins will not negatively impact surfing and swimming areas, nor will these structures negatively affect Waikīkī's ocean clarity or further damage marine life.
6. Require that hotels take responsibility for the water quality and clarity fronting their hotels through educational activities for its guests and staff, require reef-friendly sunscreen, mitigate all polluting runoff, and repair all leaks and drainage systems as well as implement meaningful visitor and resident reef restoration projects that strive to eliminate pollution in every form, and to promote/maintain healthy marine life programs, activities, and objectives.

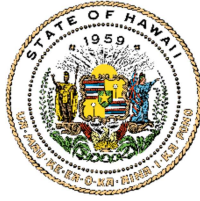
Mahalo

Tiare Lawrence

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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Tiare Lawrence  
[tiare4maui@gmail.com](mailto:tiare4maui@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Tiare Lawrence:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: History has proven us time and time again that when humans disrupt the natural ebb and flow of sand it creates flanking erosion down shore causing a domino effect to our shorelines. We must submit our concerns and comments by tomorrow! Email comments to [waikiki@seaengineering.com](mailto:waikiki@seaengineering.com) and [sam.j.lemmo@hawaii.gov](mailto:sam.j.lemmo@hawaii.gov)

Some of the concerns:

- This project could potentially change the current making it dangerous for off shore users.
- The purported "need" for the beach nourishment is to improve beach recreation, but none of the impacts of increased beach usage are reviewed or disclosed.
- There is no requirement for an enforceable managed retreat plan.
- Will disrupt the natural ebb and flow of the ocean
- T-groins is a very expensive short term band aid fix that could potentially lead to more damage down shore
- When big storms occur, groins direct strong currents that carry large amounts of sand seaward, in an off shore direction parallel to the groins.
- The negative impact of groins on downdrift shorelines is well understood. When a groin works as intended, sand moving along the beach in the so-called downdrift direction is trapped on the updrift side of the groin, causing a sand deficit and increasing erosion rates on the downdrift side.
- T-groins will also change the waterflow patterns and currents in this area.
- T-groins cause flanking erosion on either ends of the groins. This is currently occurring at Ewa beach.

- The current acceleration of sea level rise and chronic erosion events across Hawai'i warrant that the state and this Project provide a more formal evaluation of coastal adaptation and enhanced resilience options, including managed retreat.

Please request the following marine-related mitigation before any "improvements" be considered:

1. Schedule public meetings for the ocean recreation users to voice their concerns about the proposed project.
2. Implement thorough inspections of all hotels and businesses for damaged and/or leaking plumbing, poor drainage, or problems with sewage and/or grey water leakage.
3. Acknowledge that repeated offshore dredging of sand fronting the hotels and its placement on the shoreline introduces more silt into the ocean which negatively impacts marine life, reef and corals along with the clarity of the ocean. Once acknowledged and documented, viable plans must be implemented that will prevent activities and any future construction projects that generate silt, runoff, and other polluting elements that negatively impact Waikīkī's waters.
4. Propose and insist that hotels and respective businesses hire community-approved ocean water quality inspectors to measure, document, and recommend effective methods of mitigating negative impacts of silt and runoff in Waikīkī waters from the shoreline to at least 200 yards or more offshore. Hotels and businesses must be required, by law, to protect ocean water quality and its clarity.
5. Document clearly and definitively that construction of any future groins will not negatively impact surfing and swimming areas, nor will these structures negatively affect Waikīkī's ocean clarity or further damage marine life.
6. Require that hotels take responsibility for the water quality and clarity fronting their hotels through educational activities for its guests and staff, require reef-friendly sunscreen, mitigate all polluting runoff, and repair all leaks and drainage systems as well as implement meaningful visitor and resident reef restoration projects that strive to eliminate pollution in every form, and to promote/maintain healthy marine life programs, activities, and objectives.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively



small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10
- Section 8.11.1
- Section 8.12.1
- Section 10.2
- Appendix C

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Response: A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai'i from fulfilling its responsibility for overseeing beaches and submerged lands out to the seaward extent of the State's jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation

of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

Many beach management actions are considered mid-term solutions that are intended to manage and preserve coastal resources while other potential long-term solutions are investigated and implemented. While beach management strategies may not address the entire spectrum of issues and needs that are related to sea level rise adaptation, they provide a means to: manage and mitigate the impacts of erosion; protect, conserve, and enhance our beaches; maintain the economic viability of visitor destinations; and buy much-needed time to determine what managed retreat may consist of in Waikīkī and how it could potentially be accomplished. At a minimum, this will require collaboration with a much broader spectrum of public and private stakeholders and community members, as well as a level of capital investment that far exceeds that which is required to implement the proposed program.

Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, it is clear that sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area makai (seaward) of the certified shoreline, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

Response: We acknowledge that there is a broad spectrum of stakeholders with diverse perspectives in Waikīkī. The proposed actions were developed in collaboration with public and private stakeholders with the shared goal and vision of making the beaches

of Waikīkī sustainable and resilient for current and future generations. Selection of the proposed beach improvement and maintenance actions was primarily a stakeholder-driven process. The project proponents relied heavily on feedback and direction from local stakeholders to identify issues, needs, priorities, and design criteria for each beach sector. A key component of this process was the establishment of the Waikīkī Beach Community Advisory Committee (WBCAC), which was formed in 2017 to provide a forum to engage stakeholders and provide guidance and feedback on design criteria and rationale for beach improvement and maintenance projects in Waikīkī. The WBCAC is composed of various stakeholders representing business (29%), government (29%), hotels and resorts (11%), nonprofit organizations (14%), and science and engineering (17%). The WBCAC serves as a representative body to communicate the diversity of perspectives and priorities in the broader Waikīkī community, provide guidance and feedback for beach management and planning activities in Waikīkī, and ensure that future beach management projects address the issues and concerns of the Waikīkī community and local stakeholders.

The WBCAC has and continues to serve a vital role in the planning process that led to the selection of the proposed actions. The WBCAC was directly involved in determining the priorities and objectives for each beach sector, establishing planning and design criteria, evaluating conceptual options, and providing feedback on the conceptual designs for the proposed actions. The function of the WBCAC is further enhanced by the role of the University of Hawai'i Sea Grant Program's Waikīkī Beach Management Coordinator, which provides technical support, education and outreach, and project coordination. The WBCAC held six (6) formal meetings from 2017 to 2021 and will continue to provide feedback on the proposed actions throughout the environmental review, final design, and permitting processes. In addition to the extensive coordination with the WBCAC, a public scoping meeting was held at the Waikīkī Community Center on December 5, 2017. The program has also been widely publicized in the news media:

12/04/2017 *"Public forum to address future of Waikīkī beaches."* (Honolulu Star Advertiser)  
 02/26/2017 *"State looks through proposed solutions to Waikīkī beach erosion"* (KHON2)  
 06/10/2019 *"Hawai'i Allocates \$13M to keep Waikīkī Beach from disappearing"* (Honolulu Star Advertiser)  
 06/11/2019 *"Hawai'i invests \$13 million to repair state's most visited beach"* (Fox News)  
 01/12/2020 *"Got any ideas to prevent Waikīkī's beaches from disappearing?"* (Honolulu Star Advertiser)  
 12/24/2020 *"EISPN Scoping Meeting for the Waikīkī Beach Improvement and Maintenance Program"* (DLNR Press Release)  
 12/27/2020 *"State Proposed Waikīkī Beach Improvements; public comments welcome"* (KITV)  
 01/06/2021 *"DLNR: Waikīkī Beach Improvement and Maintenance Program"* (KHON2)  
 02/04/2021 *"Surfers challenge proposal adding T-head groins to Waikīkī Beach"* (Honolulu Star Advertiser)  
 06/16/2021 *"Plans for \$12 million Waikīkī Beach improvements released"* (Honolulu Star Advertiser)

06/21/2021 *“Public has until July 23 to comment on proposed Waikīkī beach improvement plan”* (Honolulu Star Advertiser)

06/21/2021 *“New beach could come to Waikīkī as part of improvement and maintenance program”* (KHON2)

06/23/2021 *“DLNR May Build More Groins in Waikīkī”* (www.jetsetter.com)

06/23/2021 *“As rising seas invade Waikīkī resorts, state proposes adding more groins”* (Honolulu Star Advertiser)

07/22/2021 *“Column: Hawai‘i’s ocean users must beware Waikīkī shoreline plan”* (Honolulu Star Advertiser)

08/09/2021 *“Future of Waikīkī Beaches May Rely on \$12M Shoreline Stabilization Project”* (Hawai‘i Public Radio)

09/02/2021 *“New Royal Hawaiian Groin is first of several planned for Waikīkī”* (Honolulu Star Advertiser)

10/26/2021 *“As sea levels rise, Hawaii is scrambling to save its disappearing beaches”* (Hawaii News Now)

10/14/2021 *“How Will Urban Honolulu Deal With the Rising Ocean”* (Hawaii Business Magazine)

11/12/2021 *“Waikiki stakeholders want Gov. David Ige to issue emergency declaration designating Kawehewehe Beach a disaster area”* (Honolulu Star Advertiser)

01/13/2022 *“Hawaii’s famed Waikiki Beach could disappear by the end of the century. It’s not the only one.”* (SFGATE)

01/28/2022 *“The Battle to Save Waikiki Beach”* (POLITICO)

08/11/2022 *“Two Of Waikiki’s Oldest Beach Clubs Are Struggling To Come To Grips With Climate Change”* (Honolulu Civil Beat)

07/14/2023 *“Land Board Receives Briefing on the State of Waikīkī Coastal Lands”* (DLNR Press Release)

07/30/2023 *“Major plans for Waikiki aim to save it from waves, flooding”* (Honolulu Star Advertiser)

For additional information regarding stakeholder and community engagement, please see the following sections of the FPEIS:

- Sections 2.4 and 19

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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**From:** Steve Holmes <holmessurfboards@gmail.com>  
**Sent:** Thursday, July 22, 2021 1:24 PM  
**To:** Waikiki  
**Subject:** Waikiki Beach Improvement and Maintenance Program

As a resident of Oahu since 1955, a life-long surfer of all of the surf spots on the South Shore and especially Waikiki and as a hospitality professional in Waikiki since 1975, regarding this plan which is under EIS review and comment:

The success of the already completed sand replenishment at the Royal Hawaiian Beach area can be measured only by the width of the new shoreline. The sand quality is hardly better than construction grade and much "cobble" remains where the ocean meets the sand. As with the last sand replenishment, it is difficult to leave the ocean as waves have created a steep sand "step" at the ocean/beach margin due to the beach's unnatural new width. The water quality in the near shore area is usually milky and cloudy in the area that many tourists "enjoy", all due to the sand replenishment.

The surf spot Canoes has become dangerous when there is a swell due to the nearby off shore sand dredging which creates a double wave which is dangerous over 5 feet. These waves now break suddenly where there was once a gradually breaking and wonderfully shaped left breaking wave.

As a surfer, I cannot speak to the success or failure of the proposed T groins to front the Halekulani Beach area as I have no engineering expertise. Judging from the recent additions to the shoreline, the replaced groin at the Royal Hawaiian Beach area and the sandbag groin in the Kuhio Beach area, this plan will turn an already compromised Waikiki which is a place of great beauty and history into something that will look more like the Houston shipping channel. Why would we want to downgrade the appearance of this wonderful birthplace of Hawaiian surfing and culture?

Oahu has long suffered from plans that are primarily contrived to be as cheap as possible, driven by government short-sightedness and ineptitude and land owners influence over the entire process. Will the hotel ownership step up to the table to contribute financially to this project? Will the residents of Hawaii once again be required to bear the burden of poor and ineffectual "improvement" of Waikiki for the benefit of tourists, hotel ownership and politicians and not themselves?

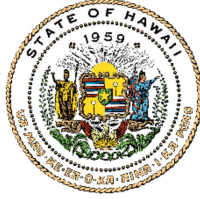
I know that many people of Oahu believe Waikiki was lost long ago to the "pave paradise and put up a parking lot" crowd but I do not agree. The mana and beauty of Waikiki shines through for me, especially where the ocean meets the sand. Restore and not build.

Steve Holmes

Cell: 808-778-5680

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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Steve Holmes  
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Mar 18, 2024

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Dear Steve Holmes:

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Comment: The success of the already completed sand replenishment at the Royal Hawaiian Beach area can be measured only by the width of the new shoreline. The sand quality is hardly better than construction grade and much "cobble" remains where the ocean meets the sand. As with the last sand replenishment, it is difficult to leave the ocean as waves have created a steep sand "step" at the ocean/beach margin due to the beach's unnatural new width.

Response: Coral cobbles and rubble, which occur naturally in offshore sand deposits, were an issue during the 2012 Waikīkī Beach Maintenance I project. These larger cobbles accumulated along the beach toe and were uncomfortable for beach users. The potential for coral rubble was addressed during the design process, and efforts were made to reduce the recovery of large pieces of rubble from the offshore sand deposits. However, the amount of rubble reaching the beach still exceeded construction specifications, specifically for long and narrow pieces of rubble that were able to fit through a screen on the hydraulic sand pump. After placement, the rubble became concentrated along the beach toe, just below the waterline. The contractor removed coral rubble by hand, and the Hawai'i Department of Land and Natural Resources (DLNR) organized volunteer rubble removal efforts after construction was completed.

Though the grain size distribution of the offshore sand proposed for use in the proposed actions has been thoroughly investigated, coral rubble, or sediment grains that are cobble-sized or larger, may exist sporadically within the sand deposits. The contractor will monitor and screen the sand for coral rubble during sand recovery operations. If excessive coral rubble is encountered in an area within the offshore sand deposits, sand recovery operations will move to a different location within the deposits. The contractor



will also monitor and screen the sand for coral rubble prior to and during sand placement operations.

Comment: The water quality in the near shore area is usually milky and cloudy in the area that many tourists “enjoy”, all due to the sand replenishment.

Response: We acknowledge the demolition and construction phases of the proposed actions have the potential to impact water quality. Potential impacts associated with construction will be mitigated to the maximum extent practicable. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective environmental protection and avoidance measures during construction.

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information regarding potential impacts to water quality, please see the following sections of the FPEIS:

- Section 8.7
- Section 8.10
- Section 8.11
- Section 8.12
- Section 12.2
- Section 16.1.2
- Section 16.2.8

Comment: The surf spot Canoes has become dangerous when there is a swell due to the nearby offshore sand dredging which creates a double wave which is dangerous over 5 feet. These waves now break suddenly where there was once a gradually breaking and wonderfully shaped left breaking wave.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was

used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Comment: As a surfer, I cannot speak to the success or failure of the proposed T groins to front the Halekulani Beach area as I have no engineering expertise. Judging from the recent additions to the shoreline, the replaced groin at the Royal Hawaiian Beach area and the sandbag groin in the Kuhio Beach area, this plan will turn an already compromised Waikiki which is a place of great beauty and history into something that will look more like the Houston shipping channel. Why would we want to downgrade the appearance of this wonderful birthplace of Hawaiian surfing and culture?

Response: Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these "beach cells" consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-

parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

Comment: Oahu has long suffered from plans that are primarily contrived to be as cheap as possible, driven by government short-sightedness and ineptitude and land owners influence over the entire process. Will the hotel ownership step up to the table to contribute financially to this project? Will the residents of Hawaii once again be required to bear the burden of poor and ineffectual “improvement” of Waikiki for the benefit of tourists, hotel ownership and politicians and not themselves?

Response: We acknowledge respondents’ objection to the use of taxpayer dollars for beach management projects in Hawai‘i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR’s management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai‘i.

Accordingly, Waikīkī beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii’s economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai‘i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā’anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale’iwa and Punalu’u on the Island of O’ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more

feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikiki Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikiki stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikiki, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Section 2.4
- Section 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed

project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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**From:** 2488kaui@gmail.com  
**Sent:** Thursday, July 22, 2021 2:11 PM  
**To:** Waikiki  
**Subject:** STOP Waikiki Improvements

I'm against wasting tax payer money on the so called Waikiki Beach improvement.

I don't think it will improve anything in Waikiki. It will ruin our oceans and we have enough problems with global warming.

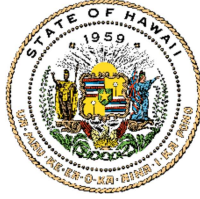
Find a better use for that money!!

Thank you,  
Lori Kauai

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Lori Kuai  
[2488kaui@gmail.com](mailto:2488kaui@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Lori Kuai:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

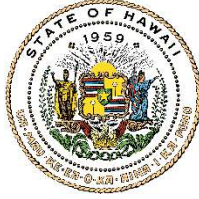
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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LAND  
STATE PARKS

Lori Kuai  
[2488kai@gmail.com](mailto:2488kai@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Lori Kuai:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I don't think it will improve anything in Waikiki. It will ruin our oceans and we have enough problems with global warming.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head



groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated,

“Without the groins there would have to be new sand put at Gray’s Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

In 2017, Governor David Ige issued a directive that State civil works projects should be designed to consider 3.2 feet of sea level rise by the year 2100. Based on the Governor’s directive and recommendations presented in the Hawai’i Sea Level Rise Vulnerability and Adaptation Report (State of Hawai’i, 2017), the design methodology for the proposed actions accounts for 3.2 feet of sea level rise for modeling waves and calculating stone sizes. The structure elevations also need to be designed for sea level rise; however, building structures to account for 3.2 feet of sea level rise would result in structures being over-built for much of their design life. Indeed, specific magnitudes of future sea level rise are difficult to accurately predict due to uncertainty regarding ongoing trends in greenhouse gas emissions and glacier and ice sheet stability. Thus, the proposed structures are designed for 1.5 feet of sea level rise, with the ability to be modified and adapted as sea levels rise (see Section 3.3 of the FPEIS). This also has the added benefit of mitigating impacts to viewplanes and the aesthetics of the shoreline.

There is a common misconception by the media and the general public that T-head groins are equivalent to “shoreline armoring,” which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as “shore protection structures”. T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as “beach stabilizing structures.” There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai’i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai’i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward

of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are “squeezed” between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as “flanking erosion,” is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any

significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality and turbidity, please see the following section of the FPEIS:

- Section 8.7

For information about water quality monitoring, please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a

total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O‘ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

Comment: I’m against wasting tax payer money on the so called Waikiki Beach improvement. I don’t think it will improve anything in Waikiki. It will ruin our oceans and we have enough problems with global warming. Find a better use for that money!!

Response: We acknowledge respondents’ objection to the use of taxpayer dollars for beach management projects in Hawai‘i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR’s management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai‘i.

Accordingly, Waikīkī Beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both

visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing

the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Sections 2.4 and 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

---

**From:** Marija Colic <colic@hawaii.edu>  
**Sent:** Thursday, July 22, 2021 2:27 PM  
**To:** Waikiki  
**Subject:** Testimonial regarding plan for Waikiki shoreline

Dear,

My name is Marija Colic and I am writing in regards to a proposed draft to build new groins at the Waikiki. As an avid ocean user and surfer, I am concerned that this will affect our ocean, how waves break, our marine life, and much more. Surfing has been more than sports in Hawaii and is deeply embedded into the culture. If we take culture, the only thing left is space without a soul.

In that sense, I am in opposition to the proposed plan.

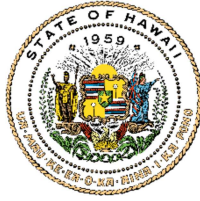
Best,

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Marija Čolić, PhD, BCBA, LBA  
Assistant Professor  
Department of Special Education  
University of Hawai'i at Mānoa  
Email: [colic@hawaii.edu](mailto:colic@hawaii.edu)  
Virtual office: [Čolić's V-office](#)

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Marija Čolić, PhD, BCBA, LBA  
[colic@hawaii.edu](mailto:colic@hawaii.edu)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Marija Čolić:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: As an avid ocean user and surfer, I am concerned that this will affect our ocean, how waves break, our marine life, and much more. Surfing has been more than sports in Hawaii and is deeply embedded into the culture. If we take culture, the only thing left is space without a soul. In that sense, I am in opposition to the proposed plan.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and

Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10
- Section 8.11.1
- Section 8.12.1
- Section 10.2
- Appendix C

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī.

Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Bornandraisedmaui <Bornandraisedmaui@protonmail.ch>  
**Sent:** Thursday, July 22, 2021 2:48 PM  
**To:** Waikiki; Sam.j.lemmo@hawaii.gov  
**Subject:** Stop T-groins in Waikiki

Aloha,

Please do not pass the proposed T-groin project at Waikiki. This is not the way to preserve marine life in the long term, and there is an abundance of evidence proving this fact. There are many steps that need to be taken before moving forward with such brashness and disregard to the 'aina such as;

- Scheduling public meetings for residents/ocean users to voice their concerns.

- Inspect nearby businesses for drainage/pipe issues that create damaging runoff, and implement solutions/repairs.
- Create standards for future construction/projects that prevent polluting elements from entering the ocean as runoff, leakage, drainage.
- Hold big corporations accountable for the damage they have done and require reparations for the beaches/ocean/marine life.
- Demand that Hotels and relevant businesses hire community approved ocean water quality inspectors to recommend effective methods of mitigating negative impacts of runoff and silt.
- Document clearly and make publicly available that construction of future T projects do not negatively impact surfing, marine life, and Hawaiian cultural practices.
- Require hotels to take responsibility for water clarity fronting their establishments, educate their guests and staff on reef safe sunscreen and pono practices, repair all leaks and drainage systems, and mitigate polluting runoff.
- Implement meaningful visitor and resident reef restoration projects to eliminate pollution and promote healthy marine life programs.

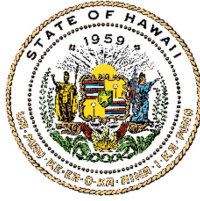
As mentioned above it is well understood that the overall negative effects of the T- groin proposal far out way the short term effectiveness. Please listen to the people of Hawai'i and take care of our 'aina in a pono way.

Mahalo

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JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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ENFORCEMENT  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

[bornandraisedmaui@protonmail.ch](mailto:bornandraisedmaui@protonmail.ch)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

To Whom It May Concern:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

**Comment:** Please do not pass the proposed T-groin project at Waikiki. This is not the way to preserve marine life in the long term, and there is an abundance of evidence proving this fact. There are many steps that need to be taken before moving forward with such brashness and disregard to the 'aina such as:

- Scheduling public meetings for residents/ocean users to voice their concerns.
- Inspect nearby businesses for drainage/pipe issues that create damaging runoff, and implement solutions/repairs.
- Create standards for future construction/projects that prevent polluting elements from entering the ocean as runoff, leakage, drainage.
- Hold big corporations accountable for the damage they have done and require reparations for the beaches/ocean/marine life.
- Demand that Hotels and relevant businesses hire community approved ocean water quality inspectors to recommend effective methods of mitigating negative impacts of runoff and silt.
- Document clearly and make publicly available that construction of future T projects do not negatively impact surfing, marine life, and Hawaiian cultural practices.
- Require hotels to take responsibility for water clarity fronting their establishments, educate their guests and staff on reef safe sunscreen and pono practices, repair all leaks and drainage systems, and mitigate polluting runoff.
- Implement meaningful visitor and resident reef restoration projects to eliminate pollution and promote healthy marine life programs.

As mentioned above it is well understood that the overall negative effects of the T- groin proposal far out way the short term effectiveness. Please listen to the people of Hawai'i and take care of our 'aina in a pono way.

Response: In response to your concerns regarding the potential impacts of T-head groins:

#### Effectiveness of T-head Groins

While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as “engineered headlands.”

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as “the most misused and improperly designed of all coastal structures.” However, the 2006 manual further explains that “when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches.”

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai‘i Professor Charles Fletcher recently stated, “Without the groins there would have to be new sand put at Gray’s Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively



small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10
- Section 8.11.1
- Section 8.12.1
- Section 10.2
- Appendix C

Response: A Cultural Impact Assessment (CIA) was completed by International Archaeology, LLC in March 2021 (see Appendix D of the FPEIS). A total of 212 individuals were approached during the CIA consultation process, 129 (60 percent) of whom were described as “Waikīkī descendants”, “Waikīkī cultural descendants” or “Waikīkī kūpuna”. Traditional and cultural practices identified in the Waikīkī area include gathering, fishing, diving, contemplation, spiritual and physical healing, canoe paddling, surfing, and other ocean activities.

The most frequently mentioned concern in the previous and current CIA studies was the inadvertent exposure of cultural material, particularly iwi kūpuna (ancestral remains or bones), during ground-disturbing construction work along the shoreline or in the offshore sand deposits that will be dredged to expand and replenish the beaches. The second most frequently mentioned concern in the previous and current CIA studies involved past and present ocean and shoreline cultural-natural resources, particularly fishing, gathering, and potential impacts to marine habitat. Kawehewehe (at the boundary between the Fort DeRussy and Halekūlani beach sectors) was also frequently mentioned as both a historical and ongoing place of spiritual and physical healing, where the sick undergo ritual bathing. Traditional Native Hawaiian healing and purification rituals are still practiced in the waters of Kawehewehe, and *limu kālā*—a plant used in healing and ho’oponopono ceremonies—may still grow in the area. The third most frequently mentioned concern was the ongoing development of Waikīkī, particularly obstruction of mauka-to-makai view corridors by tall buildings/hotels, harm to associated cultural features on the landscape, increasing demands on infrastructure in Waikīkī, including traffic, noise, and waste management problems.

We also conducted a Ka Pa’akai Cultural Impact Analysis to ensure that legitimate customary and traditional practices of Native Hawaiians be protected to the extent feasible. There do not appear to be any known traditional Hawaiian cultural practices that would be adversely affected by the proposed actions, nor does it appear that the activities associated with the proposed actions will conflict with traditional cultural practices as expressed in legend. The proposed actions will be implemented in an area that has been substantially altered over more than a century and is entirely makai (seaward) of the shoreline where the existence of any cultural artifacts or remains is unlikely.

We recognize and appreciate the various Native Hawaiian traditional and cultural activities that are practiced in Waikīkī and acknowledge that the proposed actions may temporarily curtail some of these activities. During construction, the use of some portions of the shoreline and offshore sand recovery areas may be prevented for public health and safety reasons. In addition, dredging operations will be visible from the shoreline. These impacts will be short-term in nature. We will seek to minimize any disruptions to traditional and cultural practices to the maximum extent practicable while ensuring that public health, safety, and welfare are not compromised. Upon completion, the proposed actions will not curtail these activities. The proposed actions are intended to be implemented in phases, which will help to minimize the geographic scope of the

work during construction. We will also incorporate dedicated access points to ensure that the public can access the shoreline and the ocean during construction.

While respondents did not identify potential impacts to surfing as a concern during the CIA consultation process, we acknowledge that surfing is a unique and important Native Hawaiian traditional and customary practice. Protection of surf breaks is a priority that has been emphasized in previous CIAs for the Waikīkī area (Gollin, 2017).

Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of sand from offshore sand deposits results in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated; therefore, no impacts to Native Hawaiian traditional or cultural practices are anticipated (see Section 9.2.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information regarding potential impacts to traditional and cultural resources and practices, please see the following sections of the FPEIS:

- Section 9.2.6
- Appendix D

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could

negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Response: We acknowledge that there is a broad spectrum of stakeholders with diverse perspectives in Waikīkī. The proposed actions were developed in collaboration with public and private stakeholders with the shared goal and vision of making the beaches of Waikīkī sustainable and resilient for current and future generations. Selection of the proposed beach improvement and maintenance actions was primarily a stakeholder-driven process. The project proponents relied heavily on feedback and direction from local stakeholders to identify issues, needs, priorities, and design criteria for each beach sector. A key component of this process was the establishment of the Waikīkī Beach Community Advisory Committee (WBCAC), which was formed in 2017 to provide a forum to engage stakeholders and provide guidance and feedback on design criteria and rationale for beach improvement and maintenance projects in Waikīkī. The WBCAC is composed of various stakeholders representing business (29%), government (29%), hotels and resorts (11%), nonprofit organizations (14%), and science and engineering (17%). The WBCAC serves as a representative body to communicate the diversity of perspectives and priorities in the broader Waikīkī community, provide guidance and feedback for beach management and planning activities in Waikīkī, and ensure that future beach management projects address the issues and concerns of the Waikīkī community and local stakeholders.

The WBCAC has and continues to serve a vital role in the planning process that led to the selection of the proposed actions. The WBCAC was directly involved in determining the priorities and objectives for each beach sector, establishing planning and design criteria, evaluating conceptual options, and providing feedback on the conceptual designs for the proposed actions. The function of the WBCAC is further enhanced by the role of the University of Hawai'i Sea Grant Program's Waikīkī Beach Management Coordinator, which provides technical support, education and outreach, and project coordination. The WBCAC held six (6) formal meetings from 2017 to 2021 and will

continue to provide feedback on the proposed actions throughout the environmental review, final design, and permitting processes. In addition to the extensive coordination with the WBCAC, a public scoping meeting was held at the Waikīkī Community Center on December 5, 2017. The program has also been widely publicized in the news media:

- 12/04/2017 *“Public forum to address future of Waikīkī beaches.”* (Honolulu Star Advertiser)
- 02/26/2017 *“State looks through proposed solutions to Waikīkī beach erosion”* (KHON2)
- 06/10/2019 *“Hawai‘i Allocates \$13M to keep Waikīkī Beach from disappearing”* (Honolulu Star Advertiser)
- 06/11/2019 *“Hawai‘i invests \$13 million to repair state’s most visited beach* (Fox News)
- 01/12/2020 *“Got any ideas to prevent Waikīkī’s beaches from disappearing?”* (Honolulu Star Advertiser)
- 12/24/2020 *“EISPN Scoping Meeting for the Waikīkī Beach Improvement and Maintenance Program”* (DLNR Press Release)
- 12/27/2020 *“State Proposed Waikīkī Beach Improvements; public comments welcome”* (KITV)
- 01/06/2021 *“DLNR: Waikīkī Beach Improvement and Maintenance Program”* (KHON2)
- 02/04/2021 *“Surfers challenge proposal adding T-head groins to Waikīkī Beach”* (Honolulu Star Advertiser)
- 06/16/2021 *“Plans for \$12 million Waikīkī Beach improvements released”* (Honolulu Star Advertiser)
- 06/21/2021 *“Public has until July 23 to comment on proposed Waikīkī beach improvement plan”* (Honolulu Star Advertiser)
- 06/21/2021 *“New beach could come to Waikīkī as part of improvement and maintenance program”* (KHON2)
- 06/23/2021 *“DLNR May Build More Groins in Waikīkī”* (www.jetsetter.com)
- 06/23/2021 *“As rising seas invade Waikīkī resorts, state proposes adding more groins”* (Honolulu Star Advertiser)
- 07/22/2021 *“Column: Hawai‘i’s ocean users must beware Waikīkī shoreline plan”* (Honolulu Star Advertiser)
- 08/09/2021 *“Future of Waikīkī Beaches May Rely on \$12M Shoreline Stabilization Project”* (Hawai‘i Public Radio)
- 09/02/2021 *“New Royal Hawaiian Groin is first of several planned for Waikīkī”* (Honolulu Star Advertiser)
- 10/26/2021 *“As sea levels rise, Hawaii is scrambling to save its disappearing beaches”* (Hawaii News Now)
- 10/14/2021 *“How Will Urban Honolulu Deal With the Rising Ocean”* (Hawaii Business Magazine)
- 11/12/2021 *“Waikiki stakeholders want Gov. David Ige to issue emergency declaration designating Kawehewehe Beach a disaster area”* (Honolulu Star Advertiser)
- 01/13/2022 *“Hawaii’s famed Waikiki Beach could disappear by the end of the century. It’s not the only one.”* (SFGATE)
- 01/28/2022 *“The Battle to Save Waikiki Beach”* (POLITICO)
- 08/11/2022 *“Two Of Waikiki’s Oldest Beach Clubs Are Struggling To Come To Grips With Climate Change”* (Honolulu Civil Beat)

07/14/2023 *“Land Board Receives Briefing on the State of Waikīkī Coastal Lands”*  
(DLNR Press Release)

07/30/2023 *“Major plans for Waikiki aim to save it from waves, flooding”* (Honolulu Star  
Advertiser)

For additional information regarding stakeholder and community engagement, please see the following sections of the FPEIS:

- Section 2.4
- Section 19

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Glenn Choy <choyhawaii@gmail.com>  
**Sent:** Thursday, July 22, 2021 3:14 PM  
**To:** Waikiki  
**Subject:** draft environmental statement for Waikiki

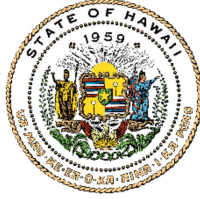
I like many locals are dead-set against any armoring, dredging, sand replenishment, or otherwise trying to engineer a sandy beach in Waikiki.

Listen to Keone Downing, like his father George Downing before him. Such projects are for the short-term profit of off-shore hotel corporations. They do nothing to benefit Hawaii, its people, or the environment. What short-term profits and economic benefit it generates only delays the coming reckoning Hawaii will have to face for over-tourism. The necessary dislocation caused by turning away from over-tourism will only be worsened by throwing money and resources into a fool's errand.

Put Hawaii and its people first, hotel corporations second, for once.

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
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**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Glenn Choy  
[choyhawaii@gmail.com](mailto:choyhawaii@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Glenn Choy:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

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**From:** Henry Bennett <bennett\_henry@hotmail.com>  
**Sent:** Thursday, July 22, 2021 3:41 PM  
**To:** Waikiki  
**Subject:** Waikiki Shoreline Plan

I want to go on record as COMPLETELY OPPOSING the projected the falsely named then "Waikiki Beach Improvement...Program.

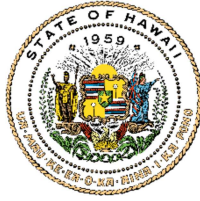
The citizens of Hawai`i should completely reject public financing for the private gain of the Waikiki hotels. Enough already! We've been doing this for decades and the island becomes less and less of a place we want to live in.

- a. the armored groins will likely do more damage than good--all of our scientists have repeatedly warned the community against armoring the shoreline as such armoring actually works to destroy beaches
- b. if there is any scientific rationale for putting in such groins, they should be funded exclusively by the Waikiki business community--using NO state tax funds.

Henry Bennett

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Henry Bennett  
bennett\_henry@hotmail.com

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Henry Bennett:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: I want to go on record as COMPLETELY OPPOSING the projected the falsely named then "Waikiki Beach Improvement...Program. The citizens of Hawai`i should completely reject public financing for the private gain of the Waikiki hotels. Enough already! We've been doing this for decades and the island becomes less and less of a place we want to live in. a. the armored groins will likely do more damage than good--all of our scientists have repeatedly warned the community against armoring the shoreline as such armoring actually works to destroy beaches; b. if there is any scientific rationale for putting in such groins, they should be funded exclusively by the Waikiki business community--using NO state tax funds

Response: There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai'i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are “squeezed” between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as “flanking erosion,” is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts.

Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for

conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic

event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Section 2.4
- Section 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Sanae Tokumura <solidconcepts@hawaii.rr.com>  
**Sent:** Thursday, July 22, 2021 3:53 PM  
**To:** Waikiki  
**Subject:** Kapahulu Groin to Ft DeRussy Beach Waikiki Beach Improvement and Maintenance

Aloha.

All these years I was unconcerned about the sand-replenishing efforts along the Waikiki coastline. I was uninformed and as such supported the efforts to maintain this important shoreline for economic purposes, etc. However, I recently became a bit more informed and realized the longterm harm that is being done to the area because of the proposed added T groins, the beach extending out near the Halekulani, and the conversion of the Royal Hawaiian and DeRussy groins into T heads.

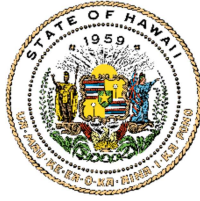
I'm deeply concerned about how this action will allow the natural sand erosion to eventually cover our reefs. We're killing ourselves. As a taxpayer born and raised in Hawaii, I protest the use of our funds primarily for the enjoyment of visitors, at the cost of our natural environment—our primary responsibility.

Mahalo for allowing me to speak.

S. Sanae Tokumura  
(808)722-0425 (c)  
(808) 396-6070 (o)

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAII  
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LAND  
STATE PARKS

S. Sanae Tokumura  
[solidconcepts@hawaii.rr.com](mailto:solidconcepts@hawaii.rr.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear S. Sanae Tokumura:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: All these years I was unconcerned about the sand-replenishing efforts along the Waikiki coastline. I was uninformed and as such supported the efforts to maintain this important shoreline for economic purposes, etc. However, I recently became a bit more informed and realized the long term harm that is being done to the area because of the proposed added T groins, the beach extending out near the Halekulani, and the conversion of the Royal Hawaiian and DeRussy groins into T heads. I'm deeply concerned about how this action will allow the natural sand erosion to eventually cover our reefs. We're killing ourselves. As a taxpayer born and raised in Hawaii, I protest the use of our funds primarily for the enjoyment of visitors, at the cost of our natural environment—our primary responsibility.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would

be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10
- Section 8.11.1
- Section 8.12.1



- Section 10.2
- Appendix C

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Section 2.4
- Section 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Noelle K Campbell <kauanoel@gmail.com>  
**Sent:** Thursday, July 22, 2021 4:12 PM  
**To:** sam.j.lemmo@hawaii.gov; Waikiki  
**Subject:** T-groin Waikiki concern

Aloha,

I'm sharing that as a lifetime resident of the ahupua'a of Waikiki, I am deeply concerned with the proposed T-groin project. I work at He'eia fishpond, one of the only functioning ahupua'a and watersystem on the island of O'ahu, and I've seen the detriment seawalls and man moving of sand can do for the ocean ecosystem.

Sand naturally moves, cleans itself and the ocean. It always returns naturally when a structure like a sea wall isn't in the way of the movement. Our sand has seasons and sand is not meant to be stagnant, it's meant to move.

I feel like projects like this one show our severe disconnection to understanding our environment and oceans, and will lead to extreme degradation of beach access and resources in the future.

Please consider my plea to completely halt this project.

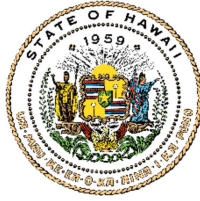
Mahalo,  
Noelle Campbell

--

Noelle Kauanoel Campbell

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
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FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Noelle Kauanoë Campbell  
[kauanoë@gmail.com](mailto:kauanoë@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Noelle Kauanoë Campbell:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Noelle Kauanoë Campbell  
[kauanoë@gmail.com](mailto:kauanoë@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Noelle Kauanoë Campbell:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: Sand naturally moves, cleans itself and the ocean. It always returns naturally when a structure like a sea wall isn't in the way of the movement. Our sand has seasons and sand is not meant to be stagnant, it's meant to move.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a

method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O‘ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as “engineered headlands.”

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as “the most misused and improperly designed of all coastal structures.” However, the 2006 manual further explains that “when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches.”

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned

coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

### Adapting to Sea Level Rise

In 2017, Governor David Ige issued a directive that State civil works projects should be designed to consider 3.2 feet of sea level rise by the year 2100. Based on the Governor's directive and recommendations presented in the Hawai'i Sea Level Rise Vulnerability and Adaptation Report (State of Hawai'i, 2017), the design methodology for the proposed actions accounts for 3.2 feet of sea level rise for modeling waves and calculating stone sizes. The structure elevations also need to be designed for sea level rise; however, building structures to account for 3.2 feet of sea level rise would result in structures being over-built for much of their design life. Indeed, specific magnitudes of future sea level rise are difficult to accurately predict due to uncertainty regarding ongoing trends in greenhouse gas emissions and glacier and ice sheet stability. Thus, the proposed structures are designed for 1.5 feet of sea level rise, with the ability to be modified and adapted as sea levels rise (see Section 3.3 of the FPEIS). This also has the added benefit of mitigating impacts to viewplanes and the aesthetics of the shoreline.

### Misconception that Groins Are "Shoreline Armoring"

There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai'i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.



Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are “squeezed” between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as “flanking erosion,” is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would

be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the

existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O’ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runoff pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

Comment: I feel like projects like this one show our severe disconnection to understanding our environment and oceans, and will lead to extreme degradation of beach access and resources in the future.

Response: The DLNR is the lead agency with authority for maintaining lateral public access along Hawaii’s shorelines. The right of access to Hawaii’s shorelines includes the right of transit along the shoreline and within beach transit corridors. Beach transit corridors are defined as the areas extending seaward of the shoreline and these areas are considered public property (HRS §115-5, HRS §205A-1). The DLNR does not regulate land uses mauka (landward) of the shoreline in Waikīkī. Responsibility for maintaining perpendicular public access to Oahu’s shorelines rests with the City and County of Honolulu. While we agree that additional public parking is a desirable asset, the DLNR has no authority to mandate additional parking in Waikīkī.

The proposed actions are intended to increase recreational dry beach area and improve lateral shoreline access, and therefore may result in an increased number of beach users. There are many factors that determine the number of beach users present at a

given time including but not limited to weather, ocean conditions, seasonal variability in visitor numbers, and scheduled events. Therefore, we are unable to predict how beach usage may change after project completion. Romine and Fletcher (2012) found that 70% of beaches in Hawai'i are undergoing chronic (long-term) erosion and over 10% (13 miles) of Hawaii's beaches have been completely lost to erosion over the past century. Based on historical and projected erosion rates, we anticipate that the beaches of Waikīkī will continue to erode and the narrower portions of the beaches (e.g., the east ends of the Fort DeRussy and Royal Hawaiian beach sectors) can be expected to be completely gone in 15 to 30 years, with total beach loss across the entire length of the Waikīkī shoreline occurring before the end of the century. We feel that the potential impacts associated with increased beach usage resulting from the proposed actions far outweigh the environmental, social, cultural, recreational, aesthetic, and economic impacts associated with beach loss in Waikīkī.

The Halekūlani beach sector essentially bifurcates shoreline access and viewplanes between the western portion of Waikīkī Beach (Hilton Hawaiian Village to Fort DeRussy) and the eastern portion of Waikīkī Beach (Royal Hawaiian Beach to Kaimana Beach). Walkways on top of the seawalls fronting the Halekūlani and Sheraton Waikiki hotels provide limited and discontinuous lateral access along the shoreline. The walkways are very narrow, are not ADA-accessible, and are subject to wave overtopping during high tides and high surf events. Structural damage has repeatedly resulted in closure of the walkways, which effectively prohibits lateral shoreline access between the Fort DeRussy and Royal Hawaiian beach sectors. There are no walkways across the small pocket beaches between the Halekūlani and Sheraton Waikiki hotels making access extremely challenging for those with limited mobility. Lateral access is currently accomplished by walking around the landward portion of the intertidal beach which, given its low elevation, is frequently flooded, and often submerged during high tides and high surf events. The proposed action in the Halekūlani beach sector will significantly improve lateral shoreline access by providing continual access between the east and west portions of Waikīkī.

For additional information about shoreline access, please see the following section of the FPEIS:

- Section 9.5.5

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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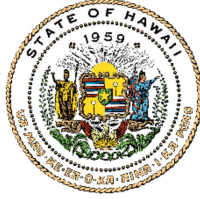
**From:** jmbart@hawaii.rr.com  
**Sent:** Thursday, July 22, 2021 4:17 PM  
**To:** Waikiki  
**Subject:** Waikiki Beach Improvement

PLEASE leave the beach alone! Let Nature take care of us.

Sent from my iPhone

**JOSH GREEN, M.D.**  
GOVERNOR | KE KIA'ĀINA

**SYLVIA LUKE**  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
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**DAWN N.S. CHANG**  
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COMMISSION ON WATER RESOURCE  
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**RYAN K.P. KANAKA'OLE**  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

[jmbart@hawaii.rr.com](mailto:jmbart@hawaii.rr.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

To Whom It May Concern:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

---

**From:** Hawaiian Supaman <hawaiiansupaman@live.com>  
**Sent:** Thursday, July 22, 2021 4:22 PM  
**To:** Lemmo, Sam J; Waikiki  
**Cc:** Tiare Lawrence; Kai Nishiki  
**Subject:** Fw: testimony Maui Planning Commission meeting July 13, 2021 agenda item D-1  
**Attachments:** testimony mc planning.docx; fig 1 skeletal remains of once living organisms.jpg; fig 1a sign at sugar cove.jpg; fig 1b sugar cove permit.pdf; fig 2 2009-05-03 sugar cove with recently placed inland sand.jpg; fig 2a SC 2020-09-24 inland sand from Oahu.jpg; fig 3 2009-05-04 sugar cove ocean with dirty fine grained sand.jpg; fig 4 2009-05-04 sugar cove.jpg; FIG4A2~1.JPG; fig 4b 2017 03-16 maui lani inland sand mine.jpg; FIG5SR~1.JPG; fig 5a cut tree trunks underwater stable road.pdf; fig 6 SR 2008-12-7 winter.jpg; fig 7 SR photo 7 from dea 2012-10-08 notar date taken 2009-08-04.JPG; FIG8SR~1.JPG; FIG9SR~1.JPG; fig 9a 2011-03-14 tsunami impact on SR.JPG; fig 10 SR Haines Wall 2008-10-21.jpg; fig 10a SR Haines Wall 2010-04-25.JPG; fig 11 SR Haines Wall 2019-03-19.JPG; fig 12 SR geotubes hard as concrete 2010-04-23.JPG; fig 12a geotubes 2010-04-23.JPG; fig 13 SR public sand on private property.JPG; fig 14 SR coral reef damage 2010-05-01.JPG; fig 14a coral reef damage 2010-06-03.JPG; fig 14b SR coral reef damage 2010-06-03.JPG

Aloha,

I would like to present testimony presented to the Maui County Planning Commission regarding sand replenishment projects including those using jetties applied to the Waikiki sand replenishment project incorporating t-groins.

Stable Road on Maui has been touted as an example of a "successful" sand replenishment project. However, I have documented information showing a different story. Please read the written testimony and apply it to this project.

Please do not hesitate to contact me should you have any questions or concerns.

Mahalo,

Paul Hanada  
Maui

---

**From:** Hawaiian Supaman <hawaiiansupaman@live.com>  
**Sent:** Monday, July 12, 2021 9:54 AM  
**To:** Maui County Planning <planning@mauicounty.gov>  
**Cc:** Tiare Lawrence <tiare4maui@gmail.com>; Kai.nishiki@gmail.com <Kai.nishiki@gmail.com>  
**Subject:** testimony Maui Planning Commission meeting July 13, 2021 agenda item D-1

Aloha,

I would like to present the attached written testimony for the above-mentioned meeting.

Thank you.

Paul Hanada

2021-07-12

Aloha,

My name is Paul Hanada. I am a 70 year old fisherman born in Wailuku grew up on Maui and continues to live in Kula. My parents were born here and were avid fishermen. My children and grandchildren were born and are blessed to live on Maui. They are also fishermen.

I am testifying because I love the ocean and everything it offers. My first love is spearfishing but also did commercial bottom and pelagic fishing for several decades. I also have a biology science degree from the University of Hawaii at Manoa.

I want to make others aware of what the ocean is like under the surface. Most people only see the surface or the beach. My purpose here is to protect the ocean, its inhabitants and everything connected to it.

I also know this is supposed to be testimony regarding a sand replenishment project in Kahana, Maui but I would like to offer my insight and experiences with other similar projects on Maui's north shore

The white sand beaches on Maui are the skeletal remains of once living organisms fig 1. Trade winds blow the finer grains inland over central Maui up into the slopes of West Maui Mountains as high up as the 700 ft. in elevation in Waikapu. This sand forms sand dunes in Waihee, Waiehu, Wailuku, Waikapu and over into Maalaea and Kihei.

There are many sand replenishment projects on the North Shore of Maui. Some are legal, some not. There are two projects that I have been monitoring over the years **since no one else does.**

Environmental impact statements are created by entities that are supposedly experts in their field. Perhaps they are but they are also paid by the entity that wants to impact the environment. They will NOT bite the hand that feeds them. In fact from my experiences, they will create a report that will allow the project to not fail by not conducting thorough research.

Sand replenishment projects do not do a thorough enough study on the ocean and its inhabitants. Very little is mentioned on what is there and how the impacts will be monitored. The main reason they feel it really doesn't matter is because no one can see what is occurring under the surface of the water. People will see how nice or bad a sand beach is but they don't see what it does to the marine ecosystem. It becomes an out of sight out of mind thing. Divers like me and many others know what's there because we have used the resource for decades. Our knowledge is just as important if not more as those with a lot of letters before and after name.

The Stable Road Beach Replenishment (SR) project, differs from the Sugar Cove (SC) project.

**SC beach** is a fake beach and they admit it fig 1a. For years they were using fine grained, dirty, inland sand from Waikapu fig 4a and 4 b to replenish the fake beach fig 2. It is devastating. It suffocates and covers the living reef and all its inhabitants fig 3. This is a link to a video of the actual sand used by SC. Please keep in mind it is only one cup of sand. SC has placed 100's of

thousands of cubic yards and continues to this day.

<https://vimeo.com/manage/videos/194574469>

They currently cannot use this culturally sensitive (Iwi Kupuna burial sites), chemically compromised inland sand. However they have found an inland sand source on Oahu and is shipping the sand to their property in shipping containers and dumping it on the beach fig 2a. It is very disturbing to have sand that may be contaminated with chemicals and invasive organisms to be transported and placed on a beach.

Where does this sand go? Why does it need to be constantly replenished? Most importantly what is the impact to the marine environment? Why is there no system in place to keep track of what is happening? Attached is the sugar cove permit issued by the planning department in 2009 fig 1b. Are they in compliance? Who is checking to see if they are?

**Stable Road Beach Replenishment (SR)** used sand from outside the shallow fringing reef fronting the project properties.

What caught my attention was an article and photos in The Maui News in I believe 2006. One of the photos taken was fig 5. It was taken on August 22, 2006. It showed the remains of ironwood trees fronting their properties and the lack of sand. They claimed that by removing the trees the sand return to their properties depicted by a second photo taken in the spring. I do not have that photo but remember it clearly. However, fig 5a shows underwater photos of the trees they cut and left in the ocean.

What SR did was brag about what they did and the positive impact of sand returning to beach. However, the dates of the photos made it clear to me they were taking credit for what Mother Nature does over the year. On the northern shores of Maui, sand moves off shore during the summer months. During the winter months, the high surf pushes the sand back onto the shore fig 6. That lie raised a red flag and made me take a closer look at what they were really proposing.

The real reason for placing more sand on the beach was because the gradual inland movement of the shoreline inland exposed the septic sewer system of one of the property owners fig 7. He needed to cover it back up because he couldn't move it anywhere else. The property was subdivided and there was no more room to install a new system. The leach pipes were exposed and sewage was being dumped onto the sand beach. Fig 9.

Because of my vocal protests, SR asked me to sit in as a fisherman to give input. After examining their environmental impact statement, it was very obvious to me that Robert Bourke from Oceanit created the plan to not fail. It was slopply created with no monitoring of the marine environment. Basically they just wanted a local fisherman to say the project looks good. They used me to make them look good. That was the last straw. I have come to realize almost all projects of this type will try to make themselves look good and that they have everything under control. It is one big shibai.

I took it upon myself to keep a record of what they were doing and document with photos and videos of their ineptitude. There were NO county, state or federal entities to make sure they were complying with their plan. NONE. Sam Lemmo from OCCL continues to tout the project.

I have kept today's documentation as brief as possible. Today there is sand retained between the jetties. There was very little sand when they ended the first phase because they ran out of sand, time and money fig 12 and 12a. They were also placing the sand on their own properties fig 13.

One of my major concerns is using public sand on private property. The delineation must be clearly marked for all eternity unless it moves inland. Another is access. The SR project has a public access but is blocked by a fence. Complaints to the County fall on deaf ears. Why use public sand if the public can't have access to it?

What brought the sand into the SR project was the Tsunami in March of 2011. It filled the sand depleted areas between the rock jetties which replaced the geotubes fig 9a. Dog luck.

Everyone wants to paint a pretty picture including the SR project, entities that are creating environmental impact statements and even the State Government (OCCL Sam Lemmo). Whenever anyone messes with Mother Nature, there are consequences. Fig 10 is a photo taken of the property down current and adjacent to the SR project. It was taken on October 21 2008. Fig 10a on April 25, 2010. Fig 11 on March 19, 2019.

Fig 14, 14a and 14b are underwater photos taken when the project was occurring. No one documented the consequences to the marine environment, the very entity that creates sand.

This link will show the damage to the coral reef in the process of pumping sand onto the shore at SR. <https://vimeo.com/manage/videos/574051700> If it doesn't open please copy and paste to your URL.

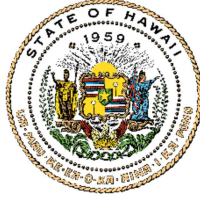
I have probably missed some important points. Thank you for giving me an opportunity to provide comments. Please do not hesitate to ask questions.

Thank you,

Paul Hanada

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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STATE PARKS

Paul Hanada  
[hawaiiansupaman@live.com](mailto:hawaiiansupaman@live.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Paul Hanada:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** missjannyp@aol.com  
**Sent:** Thursday, July 22, 2021 4:24 PM  
**To:** Waikiki

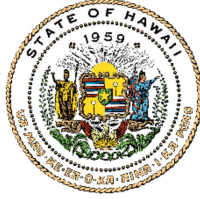
Re: Draft Environmental Statement for Waikiki Beach  
Improvement and Maintenance Program For Shoreline  
From Kapahulu Groin to Fort Derussy Beach

Please, please, please no more groins for Waikiki.

For years DLNR has been against the armoring of the shoreline because they say it **increases** erosion. Why now is it o.k. for Waikiki??

**JOSH GREEN, M.D.**  
GOVERNOR | KE KIA'ĀINA

**SYLVIA LUKE**  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

[missjannyp@aol.com](mailto:missjannyp@aol.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

To Whom It May Concern:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

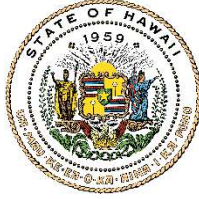
*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I  
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[missjannyp@aol.com](mailto:missjannyp@aol.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

To Whom It May Concern:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: Please, please, please no more groins for Waikiki. For years DLNR has been against the armoring of the shoreline because they say it increases erosion. Why now is it o.k. for Waikiki??

Response: There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast,

beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai'i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are “squeezed” between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as “flanking erosion,” is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Malia kaleopaa <mkaleopaa@gmail.com>  
**Sent:** Thursday, July 22, 2021 4:33 PM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

To whom it may concern:

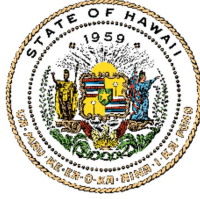
As an avid surfer of Waikiki beach and a Hawaiian born and raised in Waikiki, I find the proposed T-Groins to be disrespectful and harmful to the local wild life and to the people of Hawaii. When are we going to stop “adjusting” our natural habitat to accommodate tourism? Over the course of life I have seen a massive amount of change, picnic tables taken off kalakaua, metered parking prices increasing to unfair amounts, free parking spaces taken away to accommodate meter parking or Biki bikes, all to accommodate tourism. None of these changes have benefited the local community one bit. The previous sand replenishment project has altered our shoreline and surf breaks, and not for the better. After the first sand replenishment project the shoreline area next to the first pond by the hula mound was dangerously eroded. A large concrete frame was exposed along with rebar pieces creating a dangerous zone during south summer swells. A large number of injuries were caused directly because of this, and the erosion was a direct cause of the sand replenishment project. Enough harm has come to Waikiki at the expense of our kamaaina and wild life. I urge you to reconsider this plan.

Mahalo,  
Malia Kaleopaa  
Waikiki resident, native Hawaiian, lifelong surfer  
808-384-0794

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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Malia Kaleopaa  
[mkaleopaa@gmail.com](mailto:mkaleopaa@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Malia Kaleopaa:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

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Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
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STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Malia Kaleopaa  
[mkaleopaa@gmail.com](mailto:mkaleopaa@gmail.com)  
808-384-0794

Sep 10, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS) Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Ms. Kaleopaa:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: As an avid surfer of Waikiki beach and a Hawaiian born and raised in Waikiki, I find the proposed T-Groins to be disrespectful and harmful to the local wild life and to the people of Hawaii.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of

engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the

designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

### Adapting to Sea Level Rise

In 2017, Governor David Ige issued a directive that State civil works projects should be designed to consider 3.2 feet of sea level rise by the year 2100. Based on the Governor's directive and recommendations presented in the Hawai'i Sea Level Rise Vulnerability and Adaptation Report (State of Hawai'i, 2017), the design methodology for the proposed actions accounts for 3.2 feet of sea level rise for modeling waves and calculating stone sizes. The structure elevations also need to be designed for sea level rise; however, building structures to account for 3.2 feet of sea level rise would result in structures being over-built for much of their design life. Indeed, specific magnitudes of future sea level rise are difficult to accurately predict due to uncertainty regarding ongoing trends in greenhouse gas emissions and glacier and ice sheet stability. Thus, the proposed structures are designed for 1.5 feet of sea level rise, with the ability to be modified and adapted as sea levels rise (see Section 3.3 of the FPEIS). This also has the added benefit of mitigating impacts to viewplanes and the aesthetics of the shoreline.

### Misconception that Groins Are "Shoreline Armoring"

There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai'i. As such, the primary



function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are “squeezed” between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as “flanking erosion,” is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area

that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikiki. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikiki are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikiki is predominantly an engineered shoreline. Almost the entire length of Waikiki is armored by seawalls. A total of 37 seawalls were constructed in Waikiki, and by about 1920 seawalls lined most of Waikiki Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikiki. Only the larger groins have been

effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O’ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

Comment: The previous sand replenishment project has altered our shoreline and surf breaks, and not for the better.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai‘i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Michelle Becker <msavella31@me.com>  
**Sent:** Thursday, July 22, 2021 5:29 PM  
**To:** Waikiki  
**Subject:** Against the t-head groins

Aloha,

I am against the T-head groins in Waikiki. I am a Maui resident, vacation. I'm Waikiki and my kids love to surd there. As a student years ago at UH, I spent many days at the beach.

These T-head groins are a temporary fix and in the long run will have long term effects. For example, the reef that takes millions of years to come into beauty. The sand will drown and suffocate the life.

Additionally the natural flow of sand will also be disrupted. I've seen this on Maui where sand is added and it just disrupts the shoreline. We as residents suffer and the fix is temporary for the tourist to benefit. If erosion and beaches are an issue, maybe we should look into protecting the environment and allowing it to heal itself instead of playing god and fixing the shoreline with a bandaid!

Let's protect the environment for our future generation and look into eco-tourism or maybe limiting the amount of tourist coming in. There is a demand the island and scarcity of resources (ie lodging, beach resources, food, rental cars) pushes prices up, thus bringing in tourist who will spend more and not the budget travelers. We pay to Live in paradise and it's not cheap. Vacations should be following how we live to help our locals.

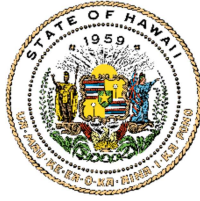
Thank you,

Michell Becker

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Michelle Becker  
[msavella31@me.com](mailto:msavella31@me.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Michelle Becker:

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Comment: I am against the T-head groins in Waikiki. I am a Maui resident, vacation. I'm Waikiki and my kids love to surd there. As a student years ago at UH, I spent many days at the beach. These T-head groins are a temporary fix and in the long run will have long term effects. For example, the reef that takes millions of years to come into beauty. The sand will drown and suffocate the life. Additionally the natural flow of sand will also be disrupted. I've seen this on Maui where sand is added and it just disrupts the shoreline. We as residents suffer and the fix is temporary for the tourist to benefit. If erosion and beaches are an issue, maybe we should look into protecting the environment and allowing it to heal itself instead of playing god and fixing the shoreline with a bandaid! Let's protect the environment for our future generation and look into eco-tourism or maybe limiting the amount of tourist coming in. There is a demand the island and scarcity of resources (ie lodging, beach resources, food, rental cars) pushes prices up, thus bringing in tourist who will spend more and not the budget travelers. We pay to Live in paradise and it's not cheap. Vacations should be following how we live to help our locals.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.



For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10
- Section 8.11.1
- Section 8.12.1
- Section 10.2
- Appendix C

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Mark Sollberger <mss.self@gmail.com>  
**Sent:** Thursday, July 22, 2021 6:09 PM  
**To:** Waikiki  
**Subject:** Public Comment on Proposed T-Groin Project for Waikiki

Aloha,

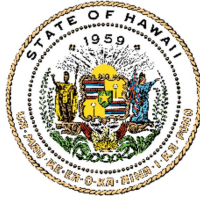
As a Town homeowner and frequent user of the beach areas in Waikiki, I am writing this letter to express my concerns about the proposed Waikiki T-groin/sand "replenishment" project. In particular I am concerned about the potential long reaching negative effects that this project will have on the marine animal habitat and on existing ocean recreation. I think we are all just beginning to realize the effects that poor decision making has already had on our island environment and the often failed attempts to fix things without understanding the potential risks of the "fix". The fact that Waikiki is already considered to be a "substantially engineered" area and that this is being used as an excuse for further engineering should be a matter of concern for all island residents. Instead of looking at how we can create a more un-natural environment, how about we consider how we can protect our precious reefs, the multitude of marine life, the areas where we swim, paddle, canoe and surf. Putting more sand on the beach (and in this case, actually expanding the beach area out onto the existing reef) and further marring our coastal views by constructing rock groins to try to keep the sand in place, doesn't take us in the direction of "doing less harm". We can already see the problems that un-natural beach erosion/sand replenishment projects cause. We see the problems that sea walls create, we see the problem that groins create, we see the problem that sand creates when it moves from areas where it is desired to areas where it can become destructive to the natural environment. The affect that this will have on Waikiki's surf is of particular concern with regards to the latter. The waves off of Waikiki are world renowned for their size and quality and are enjoyed by locals and visitors alike. These breaks are reef breaks, not sand bottom beach breaks, and the migration of sand onto the reefs could alter the dynamics of these breaks in irreversible ways. These surf breaks are a natural resource for all of us to enjoy and should not be compromised further! So knowing all of this, where is the rationale for jumping into a project like this, which has the potential for even worse outcomes. Is everything that is done always just about politics and money, or do we have city officials out there that are looking to do the things that will make Hawaii even better. Please say no to the T-groin project and please say yes to projects that will better our environment and the lives of all of us that live here.

Mahalo for giving me the opportunity to share my concerns.

Mark Sollberger

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
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LAND  
STATE PARKS

Mark Sollberger  
[mss.self@gmail.com](mailto:mss.self@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Mark Sollberger:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: As a Town homeowner and frequent user of the beach areas in Waikiki, I am writing this letter to express my concerns about the proposed Waikiki T-groin/sand "replenishment" project. In particular I am concerned about the potential long reaching negative effects that this project will have on the marine animal habitat and on existing ocean recreation. I think we are all just beginning to realize the effects that poor decision making has already had on our island environment and the often failed attempts to fix things without understanding the potential risks of the "fix". The fact that Waikiki is already considered to be a "substantially engineered" area and that this is being used as an excuse for further engineering should be a matter of concern for all island residents. Instead of looking at how we can create a more un-natural environment, how about we consider how we can protect our precious reefs, the multitude of marine life, the areas where we swim, paddle, canoe and surf. Putting more sand on the beach (and in this case, actually expanding the beach area out onto the existing reef) and further marring our coastal views by constructing rock groins to try to keep the sand in place, doesn't take us in the direction of "doing less harm". We can already see the problems that un-natural beach erosion/sand replenishment projects cause. We see the problems that sea walls create, we see the problem that groins create, we see the problem that sand creates when it moves from areas where it is desired to areas where it can become destructive to the natural environment. The affect that this will have on Waikiki's surf is of particular concern with regards to the latter. The waves off of Waikiki are world renowned for their size and quality and are enjoyed by locals and visitors alike. These breaks are reef breaks, not sand bottom beach breaks, and the migration of sand onto the reefs could alter the dynamics of these breaks in irreversible ways. These surf breaks are a natural resource for all of us to enjoy and should not be compromised further! So knowing all of this, where is the rationale for jumping into a project like this, which has the potential for even worse outcomes. Is everything that is done

always just about politics and money, or do we have city officials out there that are looking to do the things that will make Hawaii even better. Please say no to the T-groin project and please say yes to projects that will better our environment and the lives of all of us that live here.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral

assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10
- Section 8.11.1
- Section 8.12.1
- Section 10.2
- Appendix C

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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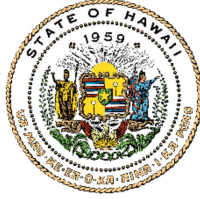
**From:** Haley Grace Ferguson <haleygracef@gmail.com>  
**Sent:** Thursday, July 22, 2021 7:32 PM  
**To:** Waikiki  
**Subject:** Opposition to t-groin project

I was born and raised on Maui and have spent my life living in Hawaii. I am highly opposed to the proposed Waikiki t-groin project. The negative impacts on the delicate ecosystem are much too great to warrant the approval of this shortsighted, irreversible development.

Thank you,  
Haley Ferguson

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Haley Ferguson  
[haleygracef@gmail.com](mailto:haleygracef@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Haley Ferguson:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

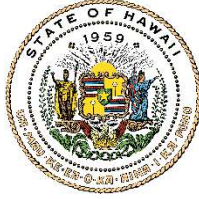
*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



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STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Haley Ferguson  
[haleygracef@gmail.com](mailto:haleygracef@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Haley Ferguson:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I am highly opposed to the proposed Waikiki t-groin project. The negative impacts on the delicate ecosystem are much too great to warrant the approval of this shortsighted, irreversible development.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a

method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O‘ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as “engineered headlands.”

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as “the most misused and improperly designed of all coastal structures.” However, the 2006 manual further explains that “when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches.”

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned

coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering

of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O‘ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each

of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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**From:** Ilima-Lei Macfarlane <imacfarlane09@yahoo.com>  
**Sent:** Thursday, July 22, 2021 8:12 PM  
**To:** sam.j.lemmo@hawaii.gov; Waikiki  
**Subject:** Proposed T-Groin Project

Aloha,

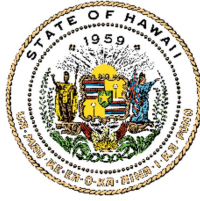
This email is in regards to the proposed T-Groin project in Waikiki. Once again, this project not only has irreversible damage to our shoreline and coastal reef, but it is a development project catering towards TOURISM using local tax payer money. When is enough, enough? When will Hawai'i begin to put the people of this land OVER profit? This project is hewa on so many levels and I strongly oppose it. Mahalo for your time.

Sincerely,

Ilima-Lei Macfarlane

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Ilima-Lei Macfarlane  
[imacfarlane09@yahoo.com](mailto:imacfarlane09@yahoo.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Ilima-Lei Macfarlane:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

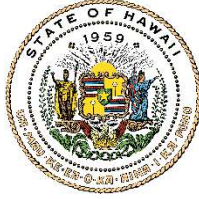
*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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Ilima-Lei Macfarlane  
[imacfarlane09@yahoo.com](mailto:imacfarlane09@yahoo.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Ilima-Lei Macfarlane:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: Once again, this project not only has irreversible damage to our shoreline and coastal reef, but it is a development project catering towards TOURISM using local tax payer money.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach

stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay

beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral

heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of

offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O’ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been

negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

Comment: Once again, this project not only has irreversible damage to our shoreline and coastal reef, but it is a development project catering towards TOURISM using local tax payer money.

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī Beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by

the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Sections 2.4 and 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

---

**From:** Iolana Espaniola Brewster <mkkwahine@gmail.com>  
**Sent:** Thursday, July 22, 2021 8:36 PM  
**To:** Waikiki  
**Subject:** Against further

Aloha,

My name is 'Iolana Brewster. I am a native Hawaiian of Molokai now residing on Maui.

The ocean is not only the place we go to for recreational surfing, paddling and sailing as our ancestors before us, but its our icebox. The place we go to gather food.

I cannot support t groins at Waikiki beach for the following reasons:

- \* Will disrupt the natural ebb and flow of the ocean
- \* -t-groins is a very expensive short term band aid fix that could potentially lead to more damage down shore
- \* When big storms occur, groins direct strong currents that carry large amounts of sand seaward, in an off shore direction parallel to the groins.

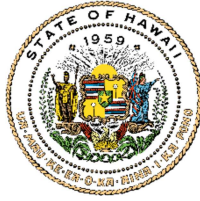
I would like to request more public outreach on this project.

Mahalo

'Iolana Brewster  
Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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Iolana Brewster  
[mkkwahine@gmail.com](mailto:mkkwahine@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Iolana Brewster:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: I am a native Hawaiian of Molokai now residing on Maui. The ocean is not only the place we go to for recreational surfing, paddling and sailing as our ancestors before us, but its our icebox. The place we go to gather food. I cannot support t groins at Waikiki beach for the following reasons:

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- T-groins is a very expensive short term band aid fix that could potentially lead to more damage down shore
- When big storms occur, groins direct strong currents that carry large amounts of sand seaward, in an off shore direction parallel to the groins.

Response: Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the

wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

Comment: I would like to request more public outreach on this project.

Response: We acknowledge that there is a broad spectrum of stakeholders with diverse perspectives in Waikīkī. The proposed actions were developed in collaboration with public and private stakeholders with the shared goal and vision of making the beaches of Waikīkī sustainable and resilient for current and future generations. Selection of the proposed beach improvement and maintenance actions was primarily a stakeholder-driven process. The project proponents relied heavily on feedback and direction from local stakeholders to identify issues, needs, priorities, and design criteria for each beach sector. A key component of this process was the establishment of the Waikīkī Beach Community Advisory Committee (WBCAC), which was formed in 2017 to provide a forum to engage stakeholders and provide guidance and feedback on design criteria and rationale for beach improvement and maintenance projects in Waikīkī. The WBCAC is composed of various stakeholders representing business (29%), government (29%), hotels and resorts (11%), nonprofit organizations (14%), and science and engineering (17%). The WBCAC serves as a representative body to communicate the diversity of perspectives and priorities in the broader Waikīkī community, provide guidance and feedback for beach management and planning activities in Waikīkī, and ensure that future beach management projects address the issues and concerns of the Waikīkī community and local stakeholders.

The WBCAC has and continues to serve a vital role in the planning process that led to the selection of the proposed actions. The WBCAC was directly involved in determining the priorities and objectives for each beach sector, establishing planning and design criteria, evaluating conceptual options, and providing feedback on the conceptual designs for the proposed actions. The function of the WBCAC is further enhanced by the role of the University of Hawai'i Sea Grant Program's Waikīkī Beach Management Coordinator, which provides technical support, education and outreach, and project coordination. The WBCAC held six (6) formal meetings from 2017 to 2021 and will continue to provide feedback on the proposed actions throughout the environmental review, final design, and permitting processes. In addition to the extensive coordination with the WBCAC, a public scoping meeting was held at the Waikīkī Community Center on December 5, 2017. The program has also been widely publicized in the news media:

12/04/2017 *"Public forum to address future of Waikīkī beaches."* (Honolulu Star Advertiser)

02/26/2017 *"State looks through proposed solutions to Waikīkī beach erosion"* (KHON2)

06/10/2019 *"Hawai'i Allocates \$13M to keep Waikīkī Beach from disappearing"* (Honolulu Star Advertiser)

06/11/2019 *"Hawai'i invests \$13 million to repair state's most visited beach (Fox News)*  
 01/12/2020 *"Got any ideas to prevent Waikiki's beaches from disappearing?"*  
 (Honolulu Star Advertiser)  
 12/24/2020 *"EISPN Scoping Meeting for the Waikiki Beach Improvement and  
 Maintenance Program"* (DLNR Press Release)  
 12/27/2020 *"State Proposed Waikiki Beach Improvements; public comments  
 welcome"* (KITV)  
 01/06/2021 *"DLNR: Waikiki Beach Improvement and Maintenance Program"* (KHON2)  
 02/04/2021 *"Surfers challenge proposal adding T-head groins to Waikiki Beach"*  
 (Honolulu Star Advertiser)  
 06/16/2021 *"Plans for \$12 million Waikiki Beach improvements released"* (Honolulu  
 Star Advertiser)  
 06/21/2021 *"Public has until July 23 to comment on proposed Waikiki beach  
 improvement plan"* (Honolulu Star Advertiser)  
 06/21/2021 *"New beach could come to Waikiki as part of improvement and  
 maintenance program"* (KHON2)  
 06/23/2021 *"DLNR May Build More Groins in Waikiki"* (www.jetsetter.com)  
 06/23/2021 *"As rising seas invade Waikiki resorts, state proposes adding more groins"*  
 (Honolulu Star Advertiser)  
 07/22/2021 *"Column: Hawai'i's ocean users must beware Waikiki shoreline plan"*  
 (Honolulu Star Advertiser)  
 08/09/2021 *"Future of Waikiki Beaches May Rely on \$12M Shoreline Stabilization  
 Project"* (Hawai'i Public Radio)  
 09/02/2021 *"New Royal Hawaiian Groin is first of several planned for Waikiki"*  
 (Honolulu Star Advertiser)  
 10/26/2021 *"As sea levels rise, Hawaii is scrambling to save its disappearing beaches"*  
 (Hawaii News Now)  
 10/14/2021 *"How Will Urban Honolulu Deal With the Rising Ocean"* (Hawaii Business  
 Magazine)  
 11/12/2021 *"Waikiki stakeholders want Gov. David Ige to issue emergency declaration  
 designating Kawehewehe Beach a disaster area"* (Honolulu Star Advertiser)  
 01/13/2022 *"Hawaii's famed Waikiki Beach could disappear by the end of the century.  
 It's not the only one."* (SFGATE)  
 01/28/2022 *"The Battle to Save Waikiki Beach"* (POLITICO)  
 08/11/2022 *"Two Of Waikiki's Oldest Beach Clubs Are Struggling To Come To Grips  
 With Climate Change"* (Honolulu Civil Beat)  
 07/14/2023 *"Land Board Receives Briefing on the State of Waikiki Coastal Lands"*  
 (DLNR Press Release)  
 07/30/2023 *"Major plans for Waikiki aim to save it from waves, flooding"* (Honolulu Star  
 Advertiser)

For additional information regarding stakeholder and community engagement, please see the following sections of the FPEIS:

- Section 2.4
- Section 19

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Daniel Ikaika Ito <ikaikaito@gmail.com>  
**Sent:** Thursday, July 22, 2021 8:44 PM  
**To:** Waikiki  
**Subject:** Opposing New Waikiki T-Groins

To Whom It May Concern:

As a Native Hawaiian resident of Kaimuki I am writing to voice my opposition of the proposal to build three new t-groins project in Waikiki. I am testifying today in strong disagreement with the agency's conclusion that this alternative should not be further evaluated under the EIS process. I am strongly opposed to beach stabilization portion of the project. I am concerned about the use of t-groins for this project and its failure to include managed retreat as an alternative. The plan would have several adverse environmental effects including the loss of coral reef habitat where the rock groins would be built, The groins would block beach users from being able to swim or snorkel along the contiguous shoreline. And its just UGLY, plain and simple.

In the US Army Coastal Engineering Manual even the Army Corps describe groins as “the most misused and improperly designed of all coastal structures”

The negative impact of groins on downdrift shorelines is well understood. When a groin works as intended, sand moving along the beach in the so-called downdrift direction is trapped on the updrift side of the groin, causing a sand deficit and increasing erosion rates on the downdrift side. Using groins in conjunction with beach nourishment is of dubious value as well. When big storms occur, groins direct strong currents that carry large amounts of sand seaward, in an off shore direction parallel to the groins.

I believe the use of t-groins is a very expensive short term band aid fix that could potentially lead to more damage down shore. This short term solution is simply to protect the interests of hotels and wealthy out of state condo owners. The current acceleration of sea level rise and chronic erosion events across Maui and Hawai'i warrant that the state and this Project provide a more formal evaluation of coastal adaptation and enhanced resilience options, including managed retreat.

“If we want to allow a beach to react naturally to sea level rise, we have to figure out how to get out of the way and just let the beach roll landward as the ocean rises.”

Managed retreat is the most effective solution, its the only truly sustainable long term solution and the best option for our island, our coastal wildlife, community at large. Executing such a strategy would require tremendous amounts of political will, community buy-in and money. We are depending on leaders like yourselves to have the political will to start serious discussions of managed retreat. We owe it to future generations.

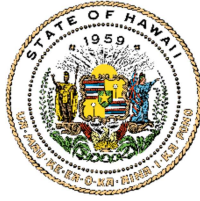
Mahalo nui loa,

Daniel Ikaika Ito

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
OFFICE OF CONSERVATION AND COASTAL LANDS  
P.O. BOX 621  
HONOLULU, HAWAII 96809

DAWN N.S. CHANG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Daniel Ikaika Ito  
[ikaikaito@gmail.com](mailto:ikaikaito@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Daniel Ikaika Ito:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: As a Native Hawaiian resident of Kaimuki I am writing to voice my opposition of the proposal to build three new t-groins project in Waikiki. I am testifying today in strong disagreement with the agency's conclusion that this alternative should not be further evaluated under the EIS process. I am strongly opposed to beach stabilization portion of the project. I am concerned about the use of t-groins for this project and its failure to include managed retreat as an alternative. The plan would have several adverse environmental effects including the loss of coral reef habitat where the rock groins would be built, The groins would block beach users from being able to swim or snorkel along the contiguous shoreline. And its just UGLY, plain and simple.

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Response: A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side,

while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as “engineered headlands.”

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as “the most misused and improperly designed of all coastal structures.” However, the 2006 manual further explains that “when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches.”

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai‘i Professor Charles Fletcher recently stated, “Without the groins there would have to be new sand put at Gray’s Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

Comment: I believe the use of t-groins is a very expensive short term band aid fix that could potentially lead to more damage down shore. This short term solution is simply to protect the interests of hotels and wealthy out of state condo owners. The current acceleration of sea level rise and chronic erosion events across Maui and Hawai‘i warrant that the state and this Project provide a more formal evaluation of coastal adaptation and enhanced resilience options, including managed retreat.

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are depending on leaders like yourselves to have the political will to start serious discussions of managed retreat. We owe it to future generations.

Response: A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai'i from fulfilling its responsibility for overseeing beaches and submerged lands out to the seaward extent of the State's jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

Many beach management actions are considered mid-term solutions that are intended to manage and preserve coastal resources while other potential long-term solutions are investigated and implemented. While beach management strategies may not address the entire spectrum of issues and needs that are related to sea level rise adaptation, they provide a means to: manage and mitigate the impacts of erosion; protect, conserve, and enhance our beaches; maintain the economic viability of visitor destinations; and buy much-needed time to determine what managed retreat may consist of in Waikīkī and how it could potentially be accomplished. At a minimum, this will require collaboration with a much broader spectrum of public and private stakeholders and community members, as well as a level of capital investment that far exceeds that which is required to implement the proposed program.

Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, it is clear that sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while

remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area makai (seaward) of the *certified shoreline*, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Kaleo N Juraesha Feiteira <james.juraesha@gmail.com>  
**Sent:** Thursday, July 22, 2021 8:44 PM  
**To:** Waikiki  
**Subject:** Testimony

Aloha,

my name is Juraesha I'i and I live in Maui. For the past 2 decades I have seen first hand the disappearance of our shorelines from Honokowai to Napili bay. Much of the damage that occurred was a direct result of armoring along the shore including the construction of sea walls and sand bag revetments. These projects have caused more harm than good to neighbors properties down shore. I am a firm Believer that anytime you armor the shorelines it will cause more erosion, disrupt the natural ebb and flow, impact water quality, and the potential to change the surf and currents off shore.

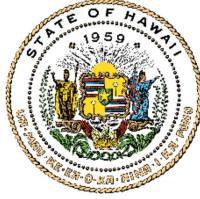
This project is NOT the solution. In the US Army Coastal Engineering Manual even the Army Corps describe groins as “the most misused and improperly designed of all coastal structures”

This draft EIS is flawed and needs to include a more detailed plan for managed retreat.

Mahalo,

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Kaleo N Juraesha Feiteira  
[james.juraesha@gmail.com](mailto:james.juraesha@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Kaleo N Juraesha Feiteira:

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Comment: For the past 2 decades I have seen first hand the disappearance of our shorelines from Honokowai to Napili bay. Much of the damage that occurred was a direct result of armoring along the shore including the construction of sea walls and sand bag revetments. These projects have caused more harm than good to neighbors properties down shore. I am a firm Believer that anytime you armor the shorelines it will cause more erosion, disrupt the natural ebb and flow, impact water quality, and the potential to change the surf and currents off shore. This project is NOT the solution. In the US Army Coastal Engineering Manual even the Army Corps describe groins as “the most misused and improperly designed of all coastal structures”. This draft EIS is flawed and needs to include a more detailed plan for managed retreat.

Response: A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

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Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Kelsey Niau <k8niau@gmail.com>  
**Sent:** Friday, July 23, 2021 12:21 AM  
**To:** Waikiki; sam.j.lemmo@hawaii.gov  
**Subject:** Save Waikiki

To whom it may concern,

Please do not build another t-groin in Waikiki! That is the last thing that we need!! It has been seen time and time again that constructing this will cause erosion of the beach and shoreline. The last time this happened there was exposed rebar and jagged rocks protruding out of the shoreline at Kuhio Beach. I've seen many people get hurt from this, including my sister who tripped and fell on top of the rebar which gouged her leg. This is not only dangerous but also becomes costly to the city as they will have to dredge sand from slightly deeper waters in order to replenish the beach. And I really mean slightly deeper as they are dredging the sand that is located right past the break.. that sand which holds the ashes of our ancestors and loved ones. The groin will also change the surf breaks in Waikiki! Did you know that before Waikiki was developed, there used to be one long wave stretching from the Natatorium to the Sheraton?! That amazing wave no longer exists because of the overdevelopment and ignorance of those who constructed these so called "improvements." Please look back and try to understand the cause and affect of these developments and you will see that this is not beneficial to Waikiki nor it's residents and visitors. Not only is this detrimental to the surf breaks and the beaches, it will eventually be costly to the residents who's taxes we use to troubleshoot these projects.

Mahalo Nui Loa for your time and consideration and Mahalo Ke Akua for the beautiful land we live in. Please think and reflect and make the right decision for the people of Hawaii and for the future.

K Makalena Niau



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Kelsey Niau  
[k8niau@gmail.com](mailto:k8niau@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Kelsey Niau:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: Please do not build another t-groin in Waikiki! That is the last thing that we need!! It has been seen time and time again that constructing this will cause erosion of the beach and shoreline. The last time this happened there was exposed rebar and jagged rocks protruding out of the shoreline at Kuhio Beach. I've seen many people get hurt from this, including my sister who tripped and fell on top of the rebar which gouged her leg. This is not only dangerous but also becomes costly to the city as they will have to dredge sand from slightly deeper waters in order to replenish the beach. And I really mean slightly deeper as they are dredging the sand that is located right past the break.. that sand which holds the ashes of our ancestors and loved ones.

Response: Waikīkī is a predominantly engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. The proposed groins are similar in design to other existing groins in Waikīkī, such as the Royal Hawaiian Groin. While we cannot prevent individuals from traversing the proposed groins, we feel that adding new structures that are similar to structures that already exist in Waikīkī will not substantially increase any risks to public health and safety that may already exist in this area.

For information about potential impacts to public health and safety, please see the following section of the FPEIS:

- Section 9.8.3

Comment: The groin will also change the surf breaks in Waikiki! Did you know that before Waikiki was developed, there used to be one long wave stretching from the Natatorium to the Sheraton?! That amazing wave no longer exists because of the overdevelopment and ignorance of those who constructed these so called “improvements.” Please look back and try to understand the cause and affect of these developments and you will see that this is not beneficial to Waikiki nor it’s residents and visitors. Not only is this detrimental to the surf breaks and the beaches, it will eventually be costly to the residents who’s taxes we use to troubleshoot these projects.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai‘i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Melissa Jasniy <melissajasniy@gmail.com>  
**Sent:** Thursday, July 22, 2021 10:59 PM  
**To:** Waikiki  
**Subject:** T Groin project

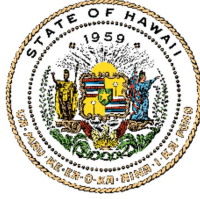
Hello,

As a resident of the state of Hawai'i I am writing with deep concern about the T-groin project that is being proposed. It will negatively impact the wildlife in our oceans & the current state of our reefs. By dumping thousands of pounds of sand into Waikiki on top of the already imported sand that is currently there it will naturally get swept into our coral reefs. It will essentially burry the natural, living, breathing ecosystem that is our coral reefs. Our reefs are important to the biodiversity & overall health of our oceans & all oceanic wildlife we are trying to protect. This is simply just the sand aspect of this proposed project not to mention the increase in people & tourism that will come along with it which is a huge reason our reefs are already in a dire state. Oils, lotions & sunscreens are being dumped into our ocean by the gallons & are leading to the extinction of endangered plants & animals. I think it's time we start listening to what Papahānaumoku is trying to tell us. Enough is enough.

Aloha,  
Melissa Jasniy

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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RYAN K.P. KANAKA'OLE  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Melissa Jasniy  
[melissajasniy@gmail.com](mailto:melissajasniy@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Melissa Jasniy:

Thank you for your email dated July 22, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: As a resident of the state of Hawai'i I am writing with deep concern about the T-groin project that is being proposed. It will negatively impact the wildlife in our oceans & the current state of our reefs. By dumping thousands of pounds of sand into Waikiki on top of the already imported sand that is currently there it will naturally get swept into our coral reefs. It will essentially bury the natural, living, breathing ecosystem that is our coral reefs. Our reefs are important to the biodiversity & overall health of our oceans & all oceanic wildlife we are trying to protect. This is simply just the sand aspect of this proposed project not to mention the increase in people & tourism that will come along with it which is a huge reason our reefs are already in a dire state. Oils, lotions & sunscreens are being dumped into our ocean by the gallons & are leading to the extinction of endangered plants & animals. I think it's time we start listening to what Papahānaumoku is trying to tell us. Enough is enough.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle

foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10

- Section 8.11.1
- Section 8.12.1
- Section 10.2
- Appendix C

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Ronald Whang <ronwhang@gmail.com>  
**Sent:** Friday, July 23, 2021 3:32 AM  
**To:** Waikiki  
**Subject:** Groins

I oppose the groins.  
Waste of money.  
Please reconsider  
Ronnie Whang



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
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Ronald Whang  
[ronwhang@gmail.com](mailto:ronwhang@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Ronald Whang:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

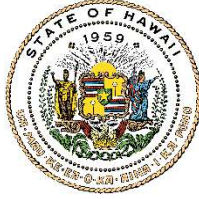
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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STATE PARKS

Ronald Whang  
[ronwhang@gmail.com](mailto:ronwhang@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Ronal Whang:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I oppose the groins. Waste of money. Please reconsider.

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī Beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems

but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Sections 2.4 and 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

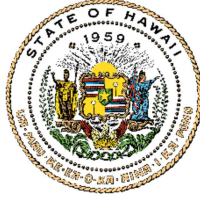
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**From:** Ray Madigan <ray52madigan@gmail.com>  
**Sent:** Friday, July 23, 2021 6:11 AM  
**To:** Waikiki  
**Subject:** Stop the building of the groins

Please do not interfere with the natural movement of sand along the shoreline.  
Ray Madigan

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
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Ray Madigan  
[ray52madigan@gmail.com](mailto:ray52madigan@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Ray Madigan:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

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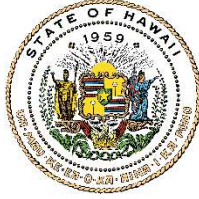
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

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Ray Madigan  
[ray52madigan@gmail.com](mailto:ray52madigan@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Ray Madigan:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: Please do not interfere with the natural movement of sand along the shoreline.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in

Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of



years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O‘ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runoff pushing sand higher. We expect that the Department of the Army will require similar

long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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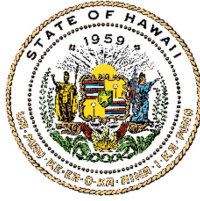
**From:** bill Plewes <surfsupman20ft@yahoo.com>  
**Sent:** Friday, July 23, 2021 6:38 AM  
**To:** Waikiki  
**Subject:** No funding for T head groins

As a resident of Waikiki and taxpayer I am against funding for the proposed T head groins in Waikiki.

Respectfully, Bill Plewes

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Bill Plewes  
[surfsupman20ft@yahoo.com](mailto:surfsupman20ft@yahoo.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Bill Plewes:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: As a resident of Waikiki and taxpayer I am against funding for the proposed T head groins in Waikiki.

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems

but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Section 2.4
- Section 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

---

**From:** imuakino1@gmail.com  
**Sent:** Friday, July 23, 2021 7:29 AM  
**To:** Waikiki  
**Subject:** Austin Kino jetty testimony

Aloha

My name is Austin Kino. I grew up in the shores of Mamala Bay learning how to surf, paddle, and swim with my family. I am an apprentice navigator on Hokule'a and I'm passionate about protecting our environment and natural resources.

Sea level is expected to rise 3 ft by 2050. I feel any armoring of our shorelines including t-groin construction could potentially cause irreparable damage to our shoreline, surf, reef eco systems, and water quality.

In the US Army Coastal Engineering Manual even the Army Corps describe groins as "the most misused and improperly designed of all coastal structures"

The negative impact of groins on downdrift shorelines is well understood. When a groin works as intended, sand moving along the beach in the so-called downdrift direction is trapped on the updrift side of the groin, causing a sand deficit and increasing erosion rates on the downdrift side. Using groins in conjunction with beach nourishment is of dubious value as well. When big storms occur, groins direct strong currents that carry large amounts of sand seaward, in an off shore direction parrallel to the groins.

A more robust comprehensive plan for managed retreat should be considered In the draft EIS.

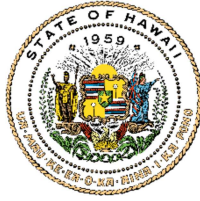
Managed retreat is the most effective solution, its the only truly sustainable long term solution and the best option for our island, our coastal wildlife, community at large. Executing such a strategy would require tremendous amounts of political will, community buy-in and money. We are depending on leaders like yourselves to have the political will to start serious discussions of managed retreat. We owe it to future generations.

Mālama - Austin Kino

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Austin Kino  
[imuakino1@gmail.com](mailto:imuakino1@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Austin Kino:

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Response: A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

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Response: A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai‘i from fulfilling its responsibility for overseeing beaches and submerged lands out to the seaward extent of the State’s jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation

of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

Many beach management actions are considered mid-term solutions that are intended to manage and preserve coastal resources while other potential long-term solutions are investigated and implemented. While beach management strategies may not address the entire spectrum of issues and needs that are related to sea level rise adaptation, they provide a means to: manage and mitigate the impacts of erosion; protect, conserve, and enhance our beaches; maintain the economic viability of visitor destinations; and buy much-needed time to determine what managed retreat may consist of in Waikīkī and how it could potentially be accomplished. At a minimum, this will require collaboration with a much broader spectrum of public and private stakeholders and community members, as well as a level of capital investment that far exceeds that which is required to implement the proposed program.

Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, it is clear that sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area makai (seaward) of the *certified shoreline*, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Carly Byrd <carlykb@gmail.com>  
**Sent:** Friday, July 23, 2021 7:58 AM  
**To:** Waikiki; sam.j.lemmo@hawaii.gov  
**Subject:** Waikiki T-groin proposal

Aloha Waikiki Sea Engineering team and Mr. Sam Lemmo,

I have concerns regarding the environmental impacts of the proposal to build additional T-groins in Waikiki beach. The studies and evidence available today show detrimental impacts to existing shoreline, water ebb and flow, sand distribution, and impact to the already fragile reef ecosystem in the Waikiki waters.

Hawai'i has been inundated with tourists, and with the recent loosening of covid restrictions we are seeing an influx of tourism volumes that our shores and infrastructure were not meant to handle and cannot currently support.

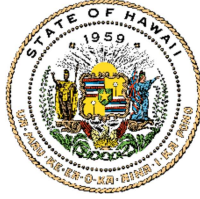
I would like to see alternative proposals for how we can protect the shorelines and safely plan for our communities and infrastructure to re-open for economic growth fueled not just by flooding our communities with visitors.

Respectfully,

Carly Byrd  
M. 808-391-7146

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
OFFICE OF CONSERVATION AND COASTAL LANDS  
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DAWN N.S. CHANG  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Carly Byrd  
[carlykb@gmail.com](mailto:carlykb@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Carly Byrd:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: I have concerns regarding the environmental impacts of the proposal to build additional T-groins in Waikiki beach. The studies and evidence available today show detrimental impacts to existing shoreline, water ebb and flow, sand distribution, and impact to the already fragile reef ecosystem in the Waikiki waters.

Response: Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

Comment: Hawai'i has been inundated with tourists, and with the recent loosening of covid restrictions we are seeing an influx of tourism volumes that our shores and infrastructure were not meant to handle and cannot currently support. I would like to see alternative proposals for how we can protect the shorelines and safely plan for our communities and infrastructure to re-open for economic growth fueled not just by flooding our communities with visitors.

Response: Waikīkī is a predominantly engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920, seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. The proposed beach stabilizing structures are consistent with the existing configuration of the Waikīkī shoreline and will not substantially alter the existing character of Waikīkī. Furthermore, we feel that the potential impacts of the proposed actions far outweigh the environmental, social, cultural, recreational, aesthetic, and economic impacts associated with beach loss in Waikīkī.

As part of the initial concept review and community engagement process, several alternatives were identified as being outside the realm of practicality and, therefore, were not developed and assessed as viable alternatives to achieve the objectives of the proposed program. These alternatives, though based on accepted engineering designs that have examples in Hawai'i or elsewhere, were identified during the early stages of concept development as being unsuited to the current environment. Early concepts were evaluated based on shoreline dynamics, marine and coastal ecosystem characteristics, recreational and cultural uses, constructability, and Federal, State, and City and County of Honolulu regulatory requirements. The following alternatives were considered during the early conceptual planning phase:

#### Offshore Breakwaters

Offshore breakwaters are shore-parallel structures constructed for the purpose of protecting the shoreline in the lee of the structure from wave attack. Offshore breakwaters can transform the incident wave crest and reduce wave energy; however, they are best used as components of T-head groin systems to form stable beach cells. Offshore breakwaters do not provide shoreline stabilization as effectively as T-head groins. A single offshore breakwater is proposed for the Kuhio sector, where it would be in a gap between two L-head groins. This is a unique response to a condition where there is not enough room inshore for a single headland-bay beach cell. Breakwaters would impact viewplanes and cover benthic habitat. The primary disadvantage of offshore breakwaters in Waikīkī is that they would inevitably interfere with navigation and ocean recreation and could potentially alter or eliminate surfing sites, which have tremendous cultural and recreational value. The proposed segmented breakwater in the Kūhiō beach sector will replace the existing breakwater and would therefore not result in any impacts that have not already occurred due to the presence of the existing breakwater.

#### Submerged Breakwaters



Submerged breakwaters and artificial surf breaks can be designed to cause the waves to break and lose energy before reaching shore. These structures are low profile and below the water surface, so there is no visual impact. The structures, however, cannot adapt to changing wave conditions and may cause increased erosion if the waves shoal but do not break. To be effective, artificial reefs for shore protection have to cause wave breaking for a long distance toward shore and prevent the waves from reforming. For this to occur, a submerged breakwater or artificial reef would need to cover a significant amount of seafloor, thereby increasing its structural footprint. An added disadvantage of submerged breakwaters is that their effectiveness is highly dependent on water levels. Submerged breakwaters would need to be adapted periodically to account for rising sea levels. Similar to offshore breakwaters, submerged breakwaters would inevitably interfere with navigation and ocean recreation and could permanently alter or eliminate existing surfing sites, which have tremendous cultural and recreational value. As a result, submerged breakwaters are not considered a viable alternative for Waikīkī.

### Living Shorelines

The term *living shoreline* refers to natural methods to combat erosion that typically involve planting of native vegetation. These solutions are best suited for low wave energy environments and are therefore not considered a suitable solution for Waikīkī. Furthermore, Waikīkī is a heavily used area and there is little to no existing vegetation makai (seaward) of the shoreline. Almost the entire length of the Waikiki shoreline is armored by seawalls, so any vegetation would need to be planted directly on the beaches, which are already narrow and subject to erosion and flooding. Promoting vegetation growth makai (seaward) of the shoreline would reduce recreational dry beach area and inhibit lateral shoreline access, which is already limited in many areas of Waikīkī. The DLNR is the lead agency with authority for maintaining lateral public access along Hawaii's shorelines and within *beach transit corridors*. Beach transit corridors are defined as the areas extending seaward of the shoreline and these areas are considered public property (Chapters 205A and Chapter 115, Hawai'i Revised Statutes). Promoting vegetation growth over the dry beach area in Waikīkī would contradict the objectives of the program and existing State statutes.

### Sand Savers

Sand Savers (formerly referred to as Sand Grabbers) are shore-parallel structures that are intended to dissipate wave energy to facilitate sand accretion. Similar structures have been installed at Kualoa Beach Park and Kailua Beach Park; however, both installations proved to be ineffective and there is no indication that they would facilitate sand accretion in Waikīkī. Furthermore, these structures are typically installed lower on the beach profile where they are subject to wave action. Installation in Waikīkī would disrupt access to and along the shoreline and may result in risk to public health, safety, and welfare.

For additional information regarding potential alternatives to the proposed actions, please see the following section of the FPEIS:

- Section 3.5

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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**From:** Patti Choy <halamango@gmail.com>  
**Sent:** Friday, July 23, 2021 8:14 AM  
**To:** Waikiki  
**Subject:** Waikiki Beach Improvement

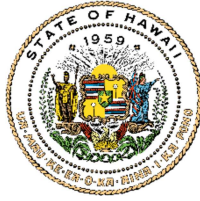
I oppose the plan to build more groins.

Groins cause more destruction and interfere with the natural ebb and flow of the ocean and sand

Patrice Choy  
Honolulu

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

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Patrice Choy  
[halamango@gmail.com](mailto:halamango@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Patrice Choy:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

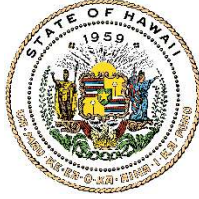
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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Patrice Choy  
[halamango@gmail.com](mailto:halamango@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Patrice Choy:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I oppose the plan to build more groins. Groins cause more destruction and interfere with the natural ebb and flow of the ocean and sand.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head

groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated,

“Without the groins there would have to be new sand put at Gray’s Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).



A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O‘ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runoff pushing sand higher. We expect that the Department of the Army will require similar

long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

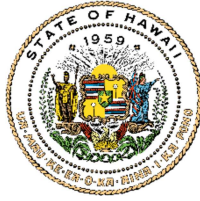
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**From:** John Witeck <jjw008@gmail.com>  
**Sent:** Friday, July 23, 2021 8:29 AM  
**To:** Waikiki  
**Subject:** No groins at Waikiki Beach

I oppose this project. It will obstruct the natural ebb and flow of the ocean on the beach. Sincerely,  
John Witeck, 2252 Puna St., Honolulu, HI 96817

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
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John Witeck  
[jjw008@gmail.com](mailto:jjw008@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear John Witeck:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

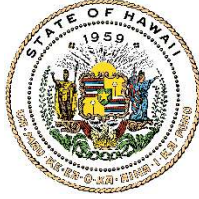
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
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RYAN K.P. KANAKA'OLE  
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ACTING DEPUTY DIRECTOR - WATER  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

John Witeck  
2252 Puna St.  
Honolulu, HI 96817  
[jjw008@gmail.com](mailto:jjw008@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear John Witeck:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I oppose this project. It will obstruct the natural ebb and flow of the ocean on the beach.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach

stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay

beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

### Adapting to Sea Level Rise

In 2017, Governor David Ige issued a directive that State civil works projects should be designed to consider 3.2 feet of sea level rise by the year 2100. Based on the Governor's directive and recommendations presented in the Hawai'i Sea Level Rise Vulnerability and Adaptation Report (State of Hawai'i, 2017), the design methodology for the proposed actions accounts for 3.2 feet of sea level rise for modeling waves and calculating stone sizes. The structure elevations also need to be designed for sea level rise; however, building structures to account for 3.2 feet of sea level rise would result in structures being over-built for much of their design life. Indeed, specific magnitudes of future sea level rise are difficult to accurately predict due to uncertainty regarding ongoing trends in greenhouse gas emissions and glacier and ice sheet stability. Thus, the proposed structures are designed for 1.5 feet of sea level rise, with the ability to be modified and adapted as sea levels rise (see Section 3.3 of the FPEIS). This also has the added benefit of mitigating impacts to viewplanes and the aesthetics of the shoreline.

### Misconception that Groins Are "Shoreline Armoring"

There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for

the people of Hawai'i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are "squeezed" between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as "flanking erosion," is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as "downdrift erosion," can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete "sectors" that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle



foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a

total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O‘ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

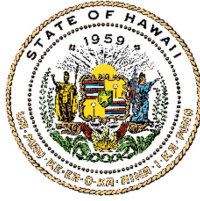
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**From:** Jayla-Riana Sabado <jaylalalala71@gmail.com>  
**Sent:** Friday, July 23, 2021 8:49 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

MALAMA THE AINA! Please don't do anything to our land & beaches, we need to save them. we need to restore the reef, the ocean, and our aina. i vote no.

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
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STATE PARKS

Jayla-Riana Sabado  
[jaylalalala71@gmail.com](mailto:jaylalalala71@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Jayla-Riana Sabado:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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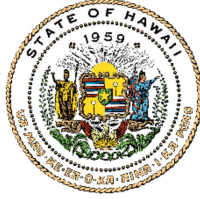
**From:** Sarah Steiner <sarahryan.steiner@gmail.com>  
**Sent:** Friday, July 23, 2021 8:52 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Please do not build break walls. You have seen what taking sand from weimea has done. Imagine what this would do.  
Thank you for listening

Sarahliz

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
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LAND  
STATE PARKS

Sarah Steiner  
[sarahryan.steiner@gmail.com](mailto:sarahryan.steiner@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Sarah Steiner:

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Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Andy Bohlander

---

**From:** Sarah Steiner <sarahryan.steiner@gmail.com>  
**Sent:** Wednesday, May 1, 2024 11:39 AM  
**To:** Andy Bohlander  
**Subject:** Re: Response to Comments: Waikiki Beach Improvement and Maintenance Program PEIS

Aloha, I believe someone submitted opposition using my email but it was not me. I am for this project. Thank you for your feedback and I hope this project goes thru.  
Sarahliz

On May 1, 2024, at 9:49 AM, Andy Bohlander <abohlander@seaengineering.com> wrote:

Aloha Sarah Steiner,

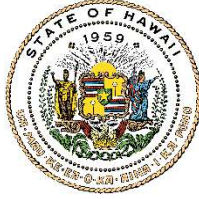
Thank you for commenting on the Draft Programmatic Environmental Impact Statement for the Waikiki Beach Improvement and Maintenance Program.

The State of Hawai'i Department of Land and Natural Resources is providing their response in the attached letter. This response will be included in the Final Programmatic Environmental Impact Statement, which is expected to be published later this year.

Mahalo  
<59- S Steiner.pdf>

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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STATE PARKS

Sarah Steiner  
[sarahryan.steiner@gmail.com](mailto:sarahryan.steiner@gmail.com)

Sep 10, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS) Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Ms. Steiner:

Thank you for your email dated May 1, 2024, regarding our response to the comments you provided in your email dated July 23, 2021, on the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you stated that you believe someone submitted opposition using your email, but you are, in fact, supportive of the proposed program. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following response to your additional comments.

We understand and acknowledge that you support the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Jazmin Shaffer <asianflower3@gmail.com>  
**Sent:** Friday, July 23, 2021 8:53 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

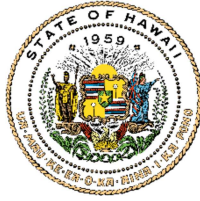
Do not change hawaii to accommodate tourists. This is our only tropical get away in the states and you're planning to change it for good. PLEASE rethink this. That is sacred land. Don't act like the white man.

Regulate tourists!!! NOT LOCALS!

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
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CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
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**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

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Jazmin Shaffer  
[asianflower3@gmail.com](mailto:asianflower3@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Jazmin Shaffer:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Lindsey Dugas <lgdugas@gmail.com>  
**Sent:** Friday, July 23, 2021 8:56 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

To whom it may concern,

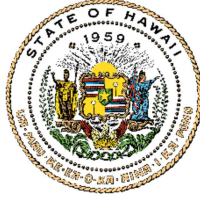
I am a local resident and I strongly oppose your T-groin plans for Waikiki.

Lindsey

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
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Lindsey Dugas  
[lgdugas@gmail.com](mailto:lgdugas@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Lindsey Dugas:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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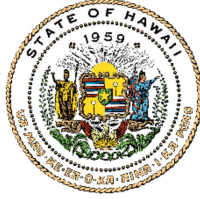
**From:** Frankie Aguirre <frankieag10@gmail.com>  
**Sent:** Friday, July 23, 2021 8:57 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Stop collecting checks from hotels to benefit tourist their won't be any waves to surf. It's been like this for years and doesn't need to change because the Sheraton wants to have its own beach. Leave Waikiki alone.

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
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Frankie Aguirre  
[frankieag10@gmail.com](mailto:frankieag10@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Frankie Aguirre:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

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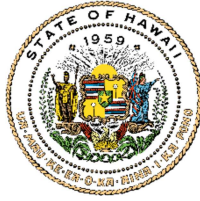
**From:** Sam Garney <samgarney@gmail.com>  
**Sent:** Friday, July 23, 2021 8:58 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Hello,

As an ocean advocate and a resident who resides in Waikiki, I strongly oppose this Waikiki project. This project will cause immense damage to reef, surf current and cause beach erosion.

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
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LAND  
STATE PARKS

Sam Garney  
[samgarney@gmail.com](mailto:samgarney@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Sam Garney:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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STATE PARKS

Sep 10, 2024

Sam Garney  
[samgarney@gmail.com](mailto:samgarney@gmail.com)

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS) Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Mr. Garney:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: As an ocean advocate and a resident who resides in Waikiki, I strongly oppose this Waikiki project. This project will cause immense damage to reef, surf current and cause beach erosion.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered

these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce

a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai'i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are "squeezed" between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as "flanking erosion," is difficult

to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1



### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O'ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Amelia Guertin <a.gurti@gmail.com>  
**Sent:** Friday, July 23, 2021 9:04 AM  
**To:** Waikiki  
**Subject:** Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Hi - I am writing you to please stop this project immediately. This will ruin and take away the beauty of the island and culture that makes it special. This will not help tourism but will discourage many from visiting. Please have the integrity by doing what is right for the island.

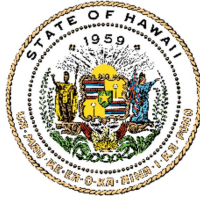
Thank you,

A

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Amelia Guertin  
[a.gurti@gmail.com](mailto:a.gurti@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Amelia Guertin:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
Office of Conservation and Coastal Lands  
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LAND  
STATE PARKS

Amelia Guertin  
[a.gurti@gmail.com](mailto:a.gurti@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Amelia Guertin:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: This will ruin and take away the beauty of the island and culture that makes it special.

Response: Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these "beach cells" consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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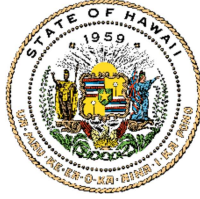
**From:** Hope Tucker <hopetucker@me.com>  
**Sent:** Friday, July 23, 2021 9:13 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

PLEASE DO NOT TO THIS! We need to protect the natural habitat and life that lives in the waters of Waikiki!!!!

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
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**OFFICE OF CONSERVATION AND COASTAL LANDS**  
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ENFORCEMENT  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Hope Tucker  
[hopetucker@me.com](mailto:hopetucker@me.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS) Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Hope Tucker:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Zachary Hitchcock <zacharyhitchcock1963@gmail.com>  
**Sent:** Friday, July 23, 2021 9:08 AM  
**To:** Waikiki  
**Subject:** Comments on Waikiki Beach Restoration

Dear DLNR,

As a frequent user of the Waikiki beaches, I have seen a lot of change in the behavior of the coastline from erosion to more extreme tidal shifts since I first started exploring these reefs and shorelines in the late 70's.

I applaud your efforts to attempt to thwart the degradation of these beaches.

Your upcoming Environmental Impact Study may expose a very complex challenge to armoring and replenishing this stretch of Shoreline.

Many of us will be following your studies and the solutions that will be proposed.

I have researched the Iroquois Point shoreline experiment, and I think it may provide a good template for Waikiki.

The Ocean is rising and I highly recommend serious consideration of a managed retreat for the coastlines of all islands and continents.

This project is bold, but Nature does not acknowledge the boldness of human endeavors.

We won't ever conquer Nature.

This is a good idea, but at the rates predicted by scientists of sea level rise, it is a temporary solution.

Armoring a section of coastline will leave another subsection weakened.

The aquifer can be damaged by increased salinity, sea life may face further challenges, coral may be threatened, and recreation may become more challenging.

We will all be following this proposal and wish you luck.

Sincerely,

Zachary Hitchcock

Former Chair

Surfrider Oahu

2014-2016

1533 Artesian Way

Honolulu, HI

96822

(808)222-6960

Sent from my iPhone



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
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LAND  
STATE PARKS

Zachary Hitchcock  
[zacharyhitchcock1963@gmail.com](mailto:zacharyhitchcock1963@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Zachary Hitchcock:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: As a frequent user of the Waikiki beaches, I have seen a lot of change in the behavior of the coastline from erosion to more extreme tidal shifts since I first started exploring these reefs and shorelines in the late 70's. I applaud your efforts to attempt to thwart the degradation of these beaches. Your upcoming Environmental Impact Study may expose a very complex challenge to armoring and replenishing this stretch of Shoreline. Many of us will be following your studies and the solutions that will be proposed.

I have researched the Iroquois Point shoreline experiment, and I think it may provide a good template for Waikiki. The Ocean is rising and I highly recommend serious consideration of a managed retreat for the coastlines of all islands and continents. This project is bold, but Nature does not acknowledge the boldness of human endeavors. We won't ever conquer Nature. This is a good idea, but at the rates predicted by scientists of sea level rise, it is a temporary solution. Armoring a section of coastline will leave another subsection weakened. The aquifer can be damaged by increased salinity, sea life may face further challenges, coral may be threatened, and recreation may become more challenging.

Response: A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai'i from fulfilling its responsibility for

overseeing beaches and submerged lands out to the seaward extent of the State's jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

Many beach management actions are considered mid-term solutions that are intended to manage and preserve coastal resources while other potential long-term solutions are investigated and implemented. While beach management strategies may not address the entire spectrum of issues and needs that are related to sea level rise adaptation, they provide a means to: manage and mitigate the impacts of erosion; protect, conserve, and enhance our beaches; maintain the economic viability of visitor destinations; and buy much-needed time to determine what managed retreat may consist of in Waikīkī and how it could potentially be accomplished. At a minimum, this will require collaboration with a much broader spectrum of public and private stakeholders and community members, as well as a level of capital investment that far exceeds that which is required to implement the proposed program.

Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area makai (seaward) of the certified shoreline, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

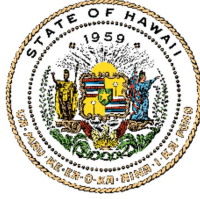
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**From:** Brooke Madrid <madrid\_brooke@yahoo.com>  
**Sent:** Friday, July 23, 2021 9:21 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Do not do this! Please put a stop to this!!!! Our ocean deserves better!

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Brooke Madrid  
madrid\_brooke@yahoo.com

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Brooke Madrid:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

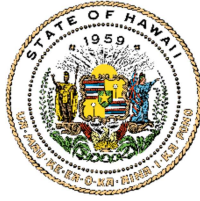
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**From:** Connor Gehris <cgehris95@icloud.com>  
**Sent:** Friday, July 23, 2021 9:21 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Please don't go through with this!

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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STATE PARKS

Connor Gehris  
[cgehris95@icloud.com](mailto:cgehris95@icloud.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Connor Gehris:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Kenneth Martens <kmartens117@gmail.com>  
**Sent:** Friday, July 23, 2021 9:23 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

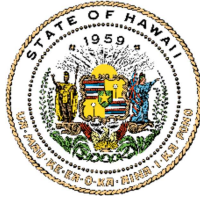
We need to take care of the land and beaches in Waikiki. Please do not construct more on the beach at our expense. We must take care of our land.

Kenneth Martens



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Kenneth Martens  
[kmartens117@gmail.com](mailto:kmartens117@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Kenneth Martens:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Alli Candelario <allisoncandelario9@gmail.com>  
**Sent:** Friday, July 23, 2021 9:24 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Don't touch our shorelines! Find a different economy to build up, other than tourism. It's harmful to Hawai'i and it's damaging the land's natural beauty. Did covid not show you the harm in putting all our eggs in one basket (i.e. investing all of our tax payer money into tourism)? Think smarter and take care of the locals rather than your pockets.

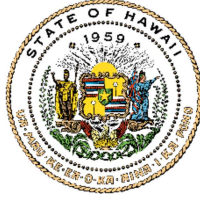
Keep those t-groins out of Waikiki.

Mahalo,

Allison Candelario

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
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Allison Candelario  
[allisoncandelario9@gmail.com](mailto:allisoncandelario9@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Allison Candelario:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Michaela Rabinov <michrabinov@gmail.com>  
**Sent:** Friday, July 23, 2021 9:24 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Aloha DLNR,

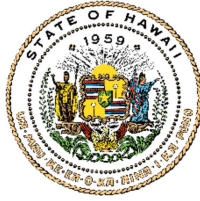
This plan to build T-Head structures on Waikiki beach will be detrimental to one of the only reasons Waikiki Beach is worth visiting anymore - the surf. Countless keiki, including myself learned to surf the perfect longboarding waves on this beach, and it would bring the local population incredible sadness to ruin that.

Aloha,  
Michaela Rabinov

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
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Michaela Rabinov  
[michrabinov@gmail.com](mailto:michrabinov@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Michaela Rabinov:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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Michaela Rabinov  
[michrabinov@gmail.com](mailto:michrabinov@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Michaela Rabinov:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: This plan to build T-Head structures on Waikiki beach will be detrimental to one of the only reasons Waikiki Beach is worth visiting anymore - the surf. Countless keiki, including myself learned to surf the perfect longboarding waves on this beach, and it would bring the local population incredible sadness to ruin that.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As

water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikiki. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Alexis Giroux <alliejaroo@icloud.com>  
**Sent:** Friday, July 23, 2021 9:25 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

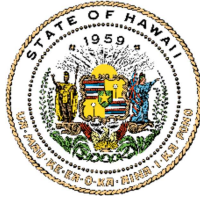
This is absolutely outrageous, please respect the lands for what they are! Stop colonization!!!!!!!!!!!!!!!

Sent from my iPhone



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
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**RYAN K.P. KANAKA'OLE**  
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**DEAN D. UYENO**  
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Alexis Giroux  
[alliejaroo@icloud.com](mailto:alliejaroo@icloud.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Alexis Giroux:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

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Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Eric Nariyoshi <eric@snrealty.com>  
**Sent:** Friday, July 23, 2021 9:28 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

I do not support the beach improvements to install "groins" In front of Waikiki beach. They are not natural, ugly, and will negatively impact the sea life and reef in the area. Please take our concerns seriously and do not try to "fix" nature's natural flow.

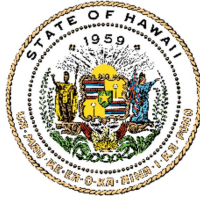
Mahalo,

Eric Nariyoshi

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
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Eric Nariyoshi  
[eric@snrealty.com](mailto:eric@snrealty.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS) Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Eric Nariyoshi:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

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Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
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STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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Eric Nariyoshi  
[eric@snrealty.com](mailto:eric@snrealty.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Eric Nariyoshi:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I do not support the beach improvements to install “groins” In front of Waikiki beach. They are not natural, ugly, and will negatively impact the sea life and reef in the area. Please take our concerns seriously and do not try to “fix” nature’s natural flow.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a

method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O‘ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as “engineered headlands.”

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as “the most misused and improperly designed of all coastal structures.” However, the 2006 manual further explains that “when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches.”

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned

coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering

of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O‘ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each



of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Lucia Gorostiza <lrgorostiza@live.com>  
**Sent:** Friday, July 23, 2021 9:28 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Dear Waikiki Project Management,

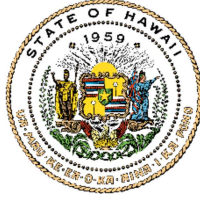
Stop your project. Humans continue to fight with nature and Mother Nature will prevail in the end. Respect her. Respect her history with the local people and community of Waikiki and their love for her. If you cannot see that further development in an already overdeveloped part of Hawaii is wrong then see that the history of this place demands surfing remains embedded in its culture until the end of time. With damaged reefs and ocean life, a direct result of your project, this should be enough to say no. Find and create wealth in harmony with the mother ocean and nature not in spite of her or despite her presence.

Sincerely and urgently,  
Becky

..

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Lucia Gorostiza  
[lrgorostiza@live.com](mailto:lrgorostiza@live.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Lucia Gorostiza:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Brandee Burgess <blburgess23@gmail.com>  
**Sent:** Friday, July 23, 2021 9:37 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

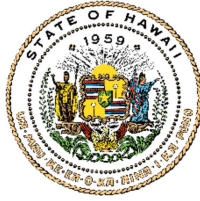
Aloha,

I do not support this act as a local taxpayer we should not be catering to the needs of tourism especially if it means disrupting our ocean and aina.

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Brandee Burgess  
[blburgess23@gmail.com](mailto:blburgess23@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Brandee Burgess:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

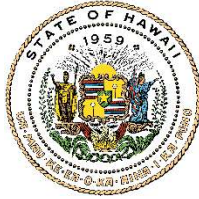
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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STATE PARKS

Brandee Burgess  
[blburgess23@gmail.com](mailto:blburgess23@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Brandee Burgess:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I do not support this act as a local taxpayer we should not be catering to the needs of tourism especially if it means disrupting our ocean and aina.

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī Beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems

but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Sections 2.4 and 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

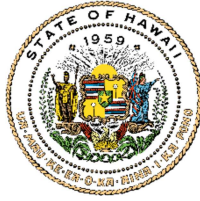
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**From:** Victoria Saldivar <vsaldivar@charter.net>  
**Sent:** Friday, July 23, 2021 9:39 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

SAVE OUR BEACH! This NOT improving the beach and ocean life. NO T-HEAD GROINS!!

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Victoria Saldivar  
[vsaldivar@charter.net](mailto:vsaldivar@charter.net)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Victoria Saldivar:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Courtnee Nunokawa <courtnee.nunokawa@gmail.com>  
**Sent:** Friday, July 23, 2021 9:39 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikīkī Beach Improvement and Maintenance Project

Aloha,

I believe T-HEAD groins will impact the lateral flow of water currents and sand movement. They will rob sand at the ends of the first and last groin structure's making us have to put up more structures in Waikiki. These groins will stick out 180 feet into the surf covering our reefs with sand and endangering our honu habitat in front of the SHERATON Hotel which acknowledges honu forging grounds with a beautiful sculpture in it's lobby. These groins will also change the waterflow patterns and currents in this area. These groins will make it very hard for the catamaran operators to navigate this area.

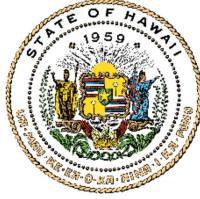
This will benefit tourism beach access but will not preserve our sacred waters.

Thanks,

Courtnee Nunokawa

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Courtnee Nunokawa  
[courtnee.nunokawa@gmail.com](mailto:courtnee.nunokawa@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Courtnee Nunokawa:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: I believe T-HEAD groins will impact the lateral flow of water currents and sand movement. They will rob sand at the ends of the first and last groin structure's making us have to put up more structures in Waikiki. These groins will stick out 180 feet into the surf covering our reefs with sand and endangering our honu habitat in front of the SHERATON Hotel which acknowledges honu forging grounds with a beautiful sculpture in it's lobby. These groins will also change the waterflow patterns and currents in this area. These groins will make it very hard for the catamaran operators to navigate this area. This will benefit tourism beach access but will not preserve our sacred waters.

Response: The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are

expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Section 8.10
- Section 8.11.1
- Section 8.12.1
- Section 10.2

- Appendix C

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** alicia marshall <alicia\_marshallhawaii@hotmail.com>  
**Sent:** Friday, July 23, 2021 9:43 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikīkī Beach Improvement and Maintenance Project

Aloha.

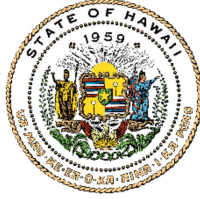
I am writing to inform you of my opposable to these sea walls as they will wreak havoc on the reef, wild life, and the surf breaks that make Waikiki so attractive and famous. This will only take sand away from other areas of Waikiki and then add more sea walls. I strongly believe this is not a solution but will only create more issues. I would also like to suggest an environmental assessment be done. We cannot let the deep pockets of hotels and the tourism industry destroy the ocean and its wildlife.

Thank you for taking this into consideration.

Alicia Alethea

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
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**DAWN N.S. CHANG**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Alicia Alethea  
[alicia\\_marshallhawaii@hotmail.com](mailto:alicia_marshallhawaii@hotmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Alicia Alethea:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

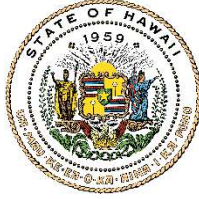
*S. Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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STATE PARKS

Alicia Alethea  
[alicia\\_marshallhawaii@hotmail.com](mailto:alicia_marshallhawaii@hotmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Alicia Alethea:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I am writing to inform you of my opposable to these sea walls as they will wreak havoc on the reef, wild life, and the surf breaks that make Waikiki so attractive and famous.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head

groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated,

“Without the groins there would have to be new sand put at Gray’s Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O'ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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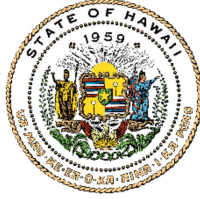
**From:** Cassidy Tabata <cassidytabata@gmail.com>  
**Sent:** Friday, July 23, 2021 9:44 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Hello, I am opposed to this idea. Please do not move forward until more input is received. Things that alter the coastline cannot be rushed.

Cassidy

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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LAND  
STATE PARKS

Cassidy Tabata  
[cassidytabata@gmail.com](mailto:cassidytabata@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Cassidy Tabata:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

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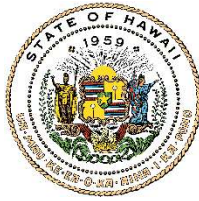
*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



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STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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Sep 26, 2024

Cassidy Tabata

[cassidytabata@gmail.com](mailto:cassidytabata@gmail.com)

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Ms. Tabata:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your comments.

Comment: I am opposed to this idea. Please do not move forward until more input is received. Things that alter the coastline cannot be rushed.

Response: We acknowledge that there is a broad spectrum of stakeholders with diverse perspectives in Waikīkī. The proposed actions were developed in collaboration with public and private stakeholders with the shared goal and vision of making the beaches of Waikīkī sustainable and resilient for current and future generations. Selection of the proposed beach improvement and maintenance actions was primarily a stakeholder-driven process. The project proponents relied heavily on feedback and direction from local stakeholders to identify issues, needs, priorities, and design criteria for each beach sector. A key component of this process was the establishment of the Waikīkī Beach Community Advisory Committee (WBCAC), which was formed in 2017 to provide a forum to engage stakeholders and provide guidance and feedback on design criteria and rationale for beach improvement and maintenance projects in Waikīkī. The WBCAC is composed of various stakeholders representing business (29%), government (29%), hotels and resorts (11%), nonprofit organizations (14%), and science and engineering (17%). The WBCAC serves as a representative body to communicate the diversity of perspectives and priorities in the broader Waikīkī community, provide guidance and feedback for beach management and planning activities in Waikīkī, and ensure that future beach management projects address the issues and concerns of the Waikīkī community and local stakeholders.

The WBCAC has and continues to serve a vital role in the planning process that led to the selection of the proposed actions. The WBCAC was directly involved in determining

the priorities and objectives for each beach sector, establishing planning and design criteria, evaluating conceptual options, and providing feedback on the conceptual designs for the proposed actions. The function of the WBCAC is further enhanced by the role of the University of Hawai'i Sea Grant Program's Waikiki Beach Management Coordinator, which provides technical support, education and outreach, and project coordination. The WBCAC held six (6) formal meetings from 2017 to 2021 and will continue to provide feedback on the proposed actions throughout the environmental review, final design, and permitting processes. In addition to the extensive coordination with the WBCAC, a public scoping meeting was held at the Waikiki Community Center on December 5, 2017. The program has also been widely publicized in the news media:

- 12/04/2017 "Public forum to address future of Waikiki beaches." (Honolulu Star Advertiser)
- 02/26/2017 "State looks through proposed solutions to Waikiki beach erosion" (KHON2)
- 06/10/2019 "Hawai'i Allocates \$13M to keep Waikiki Beach from disappearing" (Honolulu Star Advertiser)
- 06/11/2019 "Hawai'i invests \$13 million to repair state's most visited beach (Fox News)
- 01/12/2020 "Got any ideas to prevent Waikiki's beaches from disappearing?" (Honolulu Star Advertiser)
- 12/24/2020 "EISPN Scoping Meeting for the Waikiki Beach Improvement and Maintenance Program" (DLNR Press Release)
- 12/27/2020 "State Proposed Waikiki Beach Improvements; public comments welcome" (KITV)
- 01/06/2021 "DLNR: Waikiki Beach Improvement and Maintenance Program" (KHON2)
- 02/04/2021 "Surfers challenge proposal adding T-head groins to Waikiki Beach" (Honolulu Star Advertiser)
- 06/16/2021 "Plans for \$12 million Waikiki Beach improvements released" (Honolulu Star Advertiser)
- 06/21/2021 "Public has until July 23 to comment on proposed Waikiki beach improvement plan" (Honolulu Star Advertiser)
- 06/21/2021 "New beach could come to Waikiki as part of improvement and maintenance program" (KHON2)
- 06/23/2021 "DLNR May Build More Groins in Waikiki" ([www.jetsetter.com](http://www.jetsetter.com))
- 06/23/2021 "As rising seas invade Waikiki resorts, state proposes adding more groins" (Honolulu Star Advertiser)
- 07/22/2021 "Column: Hawai'i's ocean users must beware Waikiki shoreline plan" (Honolulu Star Advertiser)
- 08/09/2021 "Future of Waikiki Beaches May Rely on \$12M Shoreline Stabilization Project" (Hawai'i Public Radio)
- 09/02/2021 "New Royal Hawaiian Groin is first of several planned for Waikiki" (Honolulu Star Advertiser)
- 10/26/2021 "As sea levels rise, Hawaii is scrambling to save its disappearing beaches" (Hawaii News Now)
- 10/14/2021 "How Will Urban Honolulu Deal With the Rising Ocean" (Hawaii Business Magazine)

11/12/2021 “Waikiki stakeholders want Gov. David Ige to issue emergency declaration designating Kawehewehe Beach a disaster area” (Honolulu Star Advertiser)  
01/13/2022 “Hawaii’s famed Waikiki Beach could disappear by the end of the century. It’s not the only one.” (SFGATE)  
01/28/2022 “The Battle to Save Waikiki Beach” (POLITICO)  
08/11/2022 “Two Of Waikiki’s Oldest Beach Clubs Are Struggling To Come To Grips With Climate Change” (Honolulu Civil Beat)  
07/14/2023 “Land Board Receives Briefing on the State of Waikīki Coastal Lands” (DLNR Press Release)  
07/30/2023 “Major plans for Waikiki aim to save it from waves, flooding” (Honolulu Star Advertiser)

For additional information regarding stakeholder and community engagement, please see the following sections of the FPEIS:

- Sections 2.4 and 19

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Robert Goldman <rjgoldman60@hotmail.com>  
**Sent:** Friday, July 23, 2021 10:06 AM  
**To:** Waikiki  
**Subject:** Please stop hotels from destroying the environment at tax-payers expenses.

Aloha,

We do not live in Hawaii, but we love and appreciate its natural beauty and would like to see that nature around for future generations.

Leone Downing's editorial in the 7/22/2021 Honolulu Star-Advertiser is an eye-opener and a warning of the kind of harm the tourist hotels are doing to Waikiki beach. The tax-payers are asked to fund projects that only benefit the tourist business and not the tax-payers. The general plan to save sand in front of the hotel is flawed and has large implications for the environment, that is the wild like, reef destruction and modification in surf patterns.

The DLNR needs to listen to environmental concerns that the artificial rock structures will damage the shoreline for short term gains for the hotels

We understand the power of money and its influence on government. There is a higher calling that government needs to consider before plowing forward with the project like the T-groins.

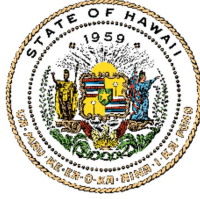
We hope that you will act responsibly for all the people of Hawaii; not just for special Waikiki hotel interests.

Respectfully,

Robert and Jeanine Goldman

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**DAWN N.S. CHANG**  
CHAIRPERSON  
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**RYAN K.P. KANAKA'OLE**  
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LAND  
STATE PARKS

Robert and Jeanine Goldman  
[rjgoldman60@hotmail.com](mailto:rjgoldman60@hotmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Robert and Jeanine Goldman:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

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Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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Robert and Jeanine Goldman  
[rjgoldman60@hotmail.com](mailto:rjgoldman60@hotmail.com)

Sep 5, 2024

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Comment: Leone Downing's editorial in the 7/22/2021 Honolulu Star-Advertiser is an eye-opener and a warning of the kind of harm the tourist hotels are doing to Waikiki beach. The tax-payers are asked to fund projects that only benefit the tourist business and not the tax-payers.

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī Beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these

beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through

implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Sections 2.4 and 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands



## Waikiki

---

**From:** melissa gomez <missy808@gmail.com>  
**Sent:** Friday, July 23, 2021 9:45 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

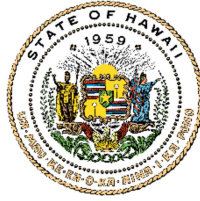
I oppose these plans. This is not a solution. Maybe an alternative would be to allow nature to adjust as it needs. Just like home owners are forced to do with erosion at their homes they live in. Shorelines shouldn't have giant structures on them, rather parks and outdoor recreational areas. Instead of murdering the ocean even more, why not take back kalakaua. Kalakaua should be turned into a park or walk/bike path. That would be plenty of set back and more beach to open up. You can't fight Mother Nature at some point you need to surrender and look at other alternatives.

Aloha

Sent from my iPhone

**JOSH GREEN, M.D.**  
GOVERNOR | KE KIA'ĀINA

**SYLVIA LUKE**  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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Melissa Gomez  
[missy808@gmail.com](mailto:missy808@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Melissa Gomez:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

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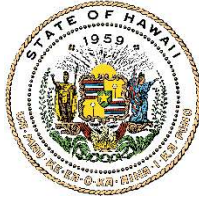
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

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[missy808@gmail.com](mailto:missy808@gmail.com)

Sep 5, 2024

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Comment: I oppose these plans. This is not a solution. Maybe an alternative would be to allow nature to adjust as it needs. Just like home owners are forced to do with erosion at their homes they live in. Shorelines shouldn't have giant structures on them, rather parks and outdoor recreational areas. Instead of murdering the ocean even more, why not take back kalakaua. Kalakaua should be turned into a park or walk/bike path. That would be plenty of set back and more beach to open up. You can't fight Mother Nature at some point you need to surrender and look at other alternatives.

Response: A focused discussion of the managed retreat alternative can be found in Section 3.5.2 of the FPEIS. However, it is important to note that this FPEIS is for a regional beach improvement and maintenance program consisting of incremental and coordinated efforts to address immediate and mid-term problems related to erosion and beach loss. The proposed program consists of a series of projects along the long-term path of sea level rise adaptation. While managed retreat may be necessary at some point in the future, the multi-decadal process of planning for and implementing managed retreat should not preclude the State of Hawai'i from fulfilling its responsibility for overseeing beaches and submerged lands out to the seaward extent of the State's jurisdiction and, where feasible, conserving and enhancing beach resources and shoreline public access.

Coastal management now and into the foreseeable future will rely on a range of design and adaptation options that are best suited to local needs, priorities, and capabilities. The suitability of the various design and adaptation options will continue to evolve based

on the latest scientific projections for sea level rise, observed erosion and flooding impacts, and availability of government programs and policies to support implementation of managed retreat or other adaptation measures. Beach management on an engineered shoreline is an appropriate option for Waikīkī over the course of the next several decades and should not be ruled out in favor of longer-term options, such as managed retreat, which will inevitably be more difficult, costly, and complicated to implement. However, that does not negate the need for parallel investigation and eventual adoption of other long-term management and adaptation options.

Many beach management actions are considered mid-term solutions that are intended to manage and preserve coastal resources while other potential long-term solutions are investigated and implemented. While beach management strategies may not address the entire spectrum of issues and needs that are related to sea level rise adaptation, they provide a means to: manage and mitigate the impacts of erosion; protect, conserve, and enhance our beaches; maintain the economic viability of visitor destinations; and buy much-needed time to determine what managed retreat may consist of in Waikīkī and how it could potentially be accomplished. At a minimum, this will require collaboration with a much broader spectrum of public and private stakeholders and community members, as well as a level of capital investment that far exceeds that which is required to implement the proposed program.

Until appropriate policies, regulations, tools, and programs are in place to implement managed retreat in a heavily developed urban community like Waikīkī, other appropriate solutions should be considered. It is our view that a multi-pronged beach management plan is a legitimate sea level adaptation strategy that can help to maintain the beaches of Waikīkī while simultaneously moving forward with longer term sea-level rise adaptation planning. Considering the scientific projections decades into the future and potential adaptation options, it is clear that sea level rise will require a range of approaches tailored to the specific issues and needs of each community, while remaining consistent with Federal, State, and City and County laws, rules, policies and community plans.

Furthermore, our ability to engage in substantive planning for managed retreat is constrained by the limits of our jurisdiction and authority, which is limited to the area makai (seaward) of the certified shoreline, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules). The DLNR cannot, of its own accord (whether arbitrarily or based on anticipated sea-level rise), certify the shoreline at a more mauka (landward) location. Any flexibility that may exist in using the location of the shoreline or other regulatory mechanisms to expand the mauka (landward) limits of DLNR's jurisdiction, is tempered by various property laws of the State of Hawai'i.

For additional information regarding managed retreat, please see the following section of the FPEIS:

- Section 3.5.2

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

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Sincerely,

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Office of Conservation and Coastal Lands

## Waikiki

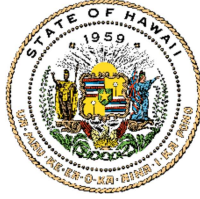
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**From:** amber mira <ambarrassing@gmail.com>  
**Sent:** Friday, July 23, 2021 9:52 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikīkī Beach Improvement and Maintenance Project

A'ole!!! The Department of Land and Natural Resources should know that building these T-Head groins will only further the erosion of our Waikiki beaches. Do not use our tax money to build calm beach bays for tourists at the expense of the natural shoreline ecosystem AND the longevity of the coastline for local families and future generations!! We are tired of this! Reallocate our resources to projects that will improve the lives of the LOCAL population, quit pouring everything we have into sustaining the most unsustainable industry: tourism. I am a 23 year old graduate student pursuing my masters in Energy Systems and have an undergraduate Bachelor of Science in Mechanical Engineering with the goal of one day moving home and applying my knowledge and skills to build a more economically and environmentally sustainable Hawai'i. Hawai'i's young people have been making choices and forging paths that will equip us to improve our home, sustain local and native Hawaiian culture, and protect the 'aina. Please make choices that help us, show us that you care as much as we do. Do not move forward with this project.

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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Amber Mira  
[ambarrassing@gmail.com](mailto:ambarrassing@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
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Dear Amber Mira:

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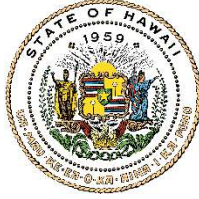
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Amber Mira  
[ambarrassing@gmail.com](mailto:ambarrassing@gmail.com)

Sep 5, 2024

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Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī Beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs



and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Sections 2.4 and 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Savana T. <savanaelena@gmail.com>  
**Sent:** Friday, July 23, 2021 9:53 AM  
**To:** Waikiki  
**Cc:** Savana Torres  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikīkī Beach Improvement and Maintenance Project

Hello,

I am writing in rejection of the Waikiki Beach Improvement and Maintenance Project. This project, like many other changes that have taken place in Honolulu, will only benefit tourism and private land owners. These groins will not foster the health of our reefs or shorelines. It will actually negatively affect the way that the waves break and the overall environment for locals (and tourists) who surf there daily. It will create a lot of chaos for catamaran operations, which is a staple for the Waikiki community and tourism. It does not make sense to completely alter an already flourishing tourist attraction, and make it nearly impossible for locals to use and enjoy. I ask that the perspective of local people is taken into consideration. We know what is best for the health and sustainability of our islands and have witnessed countless changes that have been made at our expense. Tourism is our main economic source, but the local community is Hawai'i's heart and soul. Let's not lose sight of what is actually important.

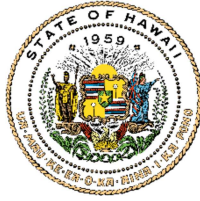
Thank you for your consideration,

Savana Ignacio-Torres

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
OFFICE OF CONSERVATION AND COASTAL LANDS  
P.O. BOX 621  
HONOLULU, HAWAII 96809

DAWN N.S. CHANG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
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RYAN K.P. KANAKA'OLE  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Savana Ignacio-Torres  
[savanaelena@gmail.com](mailto:savanaelena@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Savana Ignacio-Torres:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: I am writing in rejection of the Waikiki Beach Improvement and Maintenance Project. This project, like many other changes that have taken place in Honolulu, will only benefit tourism and private land owners. These groins will not foster the health of our reefs or shorelines. It will actually negatively affect the way that the waves break and the overall environment for locals (and tourists) who surf there daily. It will create a lot of chaos for catamaran operations, which is a staple for the Waikiki community and tourism.

Response: Detailed wave modeling was conducted to evaluate the potential for the proposed beach improvement and maintenance actions to impact surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the deposits, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector. To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to surf sites in Waikīkī are anticipated (see Section 9.4.6 of the FPEIS).

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in

Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information about the wave modeling results and potential impacts to waves, currents, and surf sites, please see the following section of the FPEIS:

- Section 9.4.6

Response: Commercial operations are an important aspect of the Waikīkī Beach experience. Commercial operations include ocean recreation equipment rentals, surfing and paddling lessons, chair and umbrella rentals, food and beverage concessions, and canoe and catamaran rides. The proposed actions could potentially impact these operations during construction. For previous projects, including Waikīkī Beach Maintenance I (2012), Kūhiō Sandbag Groin (2019), Royal Hawaiian Groin Replacement (2020) and Waikīkī Beach Maintenance II (2021), the State has worked collaboratively with the commercial operators and the City and County of Honolulu Department of Enterprise Services to mitigate disruptions to commercial activities. Examples include adjusting working hours, limiting the size of active work hours, establishing corridors for pedestrian access, and temporarily relocating concessions to other parts of the beach so they can continue to operate during construction. Any commercial operations that may be displaced during construction are expected to return immediately following completion of the projects. Thus, no significant impacts to commercial operations are anticipated.

Concern has been expressed about the short- and long-term impacts that the proposed project in the Halekūlani beach sector may have on catamaran operations. The proposed action in the Halekūlani beach sector is not anticipated to have any negative impacts on catamaran operations. The minimum beach crest width at its narrowest point midway between the groins would be about 20 to 30 feet, and the beach slope would be 1V:8H (vertical to horizontal). Maintaining a stable beach with a gentler slope will provide additional space for the catamarans to tie up and safely load and offload guests. The Halekūlani Channel would remain unobstructed to allow for safe navigation. The groin stem length (distance seaward from the shoreline) would be up to about 200 ft and the gaps between the groin heads would be approximately 200 ft wide.

The catamarans are approximately 45 ft long and 25 ft wide, so the gaps between the groin heads should be sufficiently wide to provide safe ingress and egress for catamaran access to/from the shoreline. The new beach and groins would also eliminate the seasonal erosion that forces the catamarans to relocate their operations to the Fort DeRussy beach sector. Thus, no negative impacts to navigation or catamaran operations are anticipated.

For additional information regarding potential impacts to navigation and catamarans, please see the following section of the FPEIS:

- Section 9.4.6

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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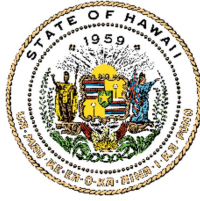
**From:** Jessee Hoge <jesseehoge@gmail.com>  
**Sent:** Friday, July 23, 2021 9:54 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikīkī Beach Improvement and Maintenance Project

I am against the installment of the T- HEAD Groins. Installing these will ruin the ecosystem in the beaches of Waikiki. A vote for these is a vote against the well-being of the Oceans themselves. Think of our future children instead of your wallets.

Best,  
Jessee Hoge Kagawa  
Building Consultant  
Atlanta, GA

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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**DAWN N.S. CHANG**  
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**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Jessee Hoge Kagawa  
[jesseehoge@gmail.com](mailto:jesseehoge@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Jessee Hoge Kagawa:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

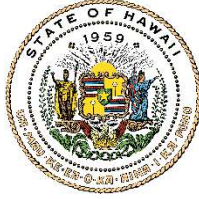
*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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Jessee Hoge Kagawa  
[jesseehoge@gmail.com](mailto:jesseehoge@gmail.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Jessee Hoge Kagawa:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I am against the installment of the T- HEAD Groins. Installing these will ruin the ecosystem in the beaches of Waikiki.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head

groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated,

“Without the groins there would have to be new sand put at Gray’s Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O‘ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Danielle Enright <denright@hawaii.edu>  
**Sent:** Friday, July 23, 2021 10:37 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikī Beach Improvement and Maintenance Project

Aloha,

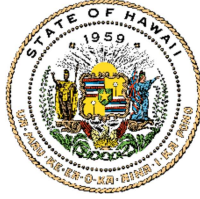
I do not support the plans to alter the beaches in Waikiki and Maui. T- groins and sea walls will remove sand from beaches and affect marine habitat. Please reconsider any drastic changes to our beaches, ocean and comply to the communities requests and input.

Mahalo,  
Danielle Enright

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**DAWN N.S. CHANG**  
CHAIRPERSON  
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COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
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FORESTRY AND WILDLIFE  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Danielle Enright  
[denright@hawaii.edu](mailto:denright@hawaii.edu)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Danielle Enright:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

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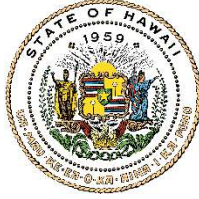
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

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STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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Danielle Enright  
[denright@hawaii.edu](mailto:denright@hawaii.edu)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
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Comment: I do not support the plans to alter the beaches in Waikiki and Maui. T- groins and sea walls will remove sand from beaches and affect marine habitat.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a method for estimating the stable shoreline position for a beach between two T-head



groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O'ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated,

“Without the groins there would have to be new sand put at Gray’s Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

There is a common misconception by the media and the general public that T-head groins are equivalent to “shoreline armoring,” which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as “shore protection structures”. T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as “beach stabilizing structures.” There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai‘i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai‘i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are “squeezed” between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as “flanking erosion,” is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the

terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O'ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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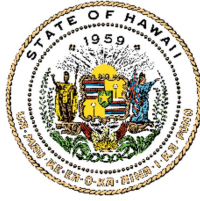
**From:** Melissa usui <aubriusui@icloud.com>  
**Sent:** Friday, July 23, 2021 10:38 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikīkī Beach Improvement and Maintenance Project

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Aubrie Usui

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GOVERNOR | KE KIA'ĀINA

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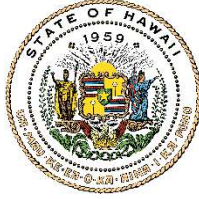
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[aubrieusui@icloud.com](mailto:aubrieusui@icloud.com)

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#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual further explains that "when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches."

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay

beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai'i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are "squeezed" between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as "flanking erosion," is difficult to mitigate because it is caused by wave action. Flanking erosion is

typically more progressive along chronically eroding shorelines that lack sandy beaches. For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubblemound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate

from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to

immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

Concerns regarding impacts to surfing waves in Waikīkī extend well beyond the proposed beach improvement and maintenance actions. The quality of surfing waves in Waikīkī as they exist today is expected to change as sea levels continue to rise. As water depths increase, the fringing reef will be less effective in dissipating wave energy. As a result, waves will break closer to the shoreline and swells will have to be larger to break in the deeper water. This could potentially eliminate some of the surfable waves at certain locations in Hawai'i, including those in Waikīkī. A recent study found that 16% of surf sites in California would be eliminated with 3 ft of sea level rise and 18% would be threatened (Reineman et al., 2017).

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

#### Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O’ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Seaton Tilo <seaton.tilo@icloud.com>  
**Sent:** Friday, July 23, 2021 10:38 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikīkī Beach Improvement and Maintenance Project

Hello,

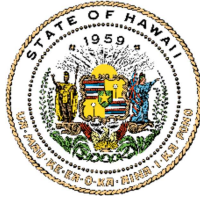
I saw and I think this is so wrong to continue to improve the Hawaiian Islands for tourists who disrespect our island, the people, the environment, and our wildlife. Put our tax dollars towards fixing our home for our benefit not tourists.

Very Respectfully,  
Seaton K.Tilo



JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
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ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Seaton K. Tilo  
[seaton.tilo@icloud.com](mailto:seaton.tilo@icloud.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Seaton Tilo:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

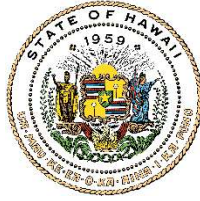
Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
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STATE PARKS

Seaton K. Tilo  
[seaton.tilo@icloud.com](mailto:seaton.tilo@icloud.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Seaton K. Tilo:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: I saw and I think this is so wrong to continue to improve the Hawaiian Islands for tourists who disrespect our island, the people, the environment, and our wildlife. Put our tax dollars towards fixing our home for our benefit not tourists.

Response: We acknowledge respondents' objection to the use of taxpayer dollars for beach management projects in Hawai'i. However, the DLNR is responsible for conservation and restoration of beaches, as well as environmental stewardship of coastal ecosystems. Funding beach restoration projects fits within the scope of the DLNR's management priorities and the objectives of the Conservation District. Due to funding and staffing limitations, the DLNR seeks to strategically fund beach improvement and maintenance projects that have the broadest and most direct positive impacts to the citizens and the economy of the State of Hawai'i.

Accordingly, Waikīkī Beach was selected because of its treasured status—both in terms of amenities and cultural resources—that makes it such an attractive destination for both visitors and residents. Coastal management along an engineered shoreline, such as Waikīkī, is a product of ongoing, multi-pronged efforts focused on preserving beaches that are facing ongoing and future sea-level rise stress. By simultaneously addressing the impacts of sea-level rise and beach conservation, this project also benefits a critical component of Hawaii's economy: the Waikīkī tourism sector. The socioeconomic impacts of not maintaining Waikīkī Beach would likely have a negative impact on jobs and tax revenues, and therefore on all citizens of the State of Hawai'i. Therefore, these

beaches are worthy of protecting and maintaining now and into the future for both conservation and socioeconomic purposes.

Beyond Waikīkī, the State is currently funding a beach restoration and berm enhancement project at Kā'anapali Beach on the island of Maui. The State is also currently evaluating options to support beach restoration projects at Hale'iwa and Punalu'u on the Island of O'ahu. These later projects would be conducted in partnerships with the City and County of Honolulu and the Federal government. The DLNR has also invested over \$1 million in funding and in-kind staff support to develop the Small-Scale Beach Nourishment (SSBN) and Small-Scale Beach Restoration (SSBR) programs. These programs are intended to consolidate and streamline the regulatory process to make beach improvement and maintenance projects more feasible and cost effective for individuals, communities, and public agencies that handle beach sand. It is important to note that, while beach restoration is generally a preferred alternative, it may not be practicable or feasible at many locations in Hawai'i.

Funding for the proposed beach improvement and maintenance actions is currently being provided by a combination of public and private funds. Public funds are provided by an appropriation from the Hawai'i State Legislature, and tax revenues generated by the Waikīkī Special Improvement District Association (WBSIDA). The WBSIDA provides a mechanism for coordination of the proposed actions with a broad spectrum of Waikīkī stakeholders and securing private funding to support project implementation. At this time, it is uncertain whether additional funds will be appropriated or provided to support ongoing maintenance efforts and/or additional future projects.

The estimated costs for construction for the proposed beach improvement and maintenance actions have yet to be confirmed. Initial construction costs will depend on a variety of factors including but not limited to the selected offshore sand deposits, sand recovery and transport methodologies, project timing and sequencing, and monitoring requirements. Recurring construction costs will depend on the frequency of beach maintenance activities and unforeseen maintenance costs. For example, an episodic event (e.g., hurricane or tsunami) could result in unpredicted costs for repair and maintenance. Adaptation costs are similarly difficult to project but would be substantially lower than the costs associated with adapting the existing backshore infrastructure. As sea levels continue to rise, there is uncertainty regarding precisely when and the degree to which the structures will need to be adapted. The cumulative costs over the 50-year life of the program will continue to be adjusted to account for inflation/deflation.

Several respondents expressed concern that the design consultant (Sea Engineering, Inc.) would be selected as the Contractor tasked with both designing and constructing the proposed actions. Construction of a project that was designed by the same company has been identified as a potential conflict of interest by the State of Hawai'i. Thus, for the proposed program, the design consultant (Sea Engineering, Inc.) will not be bidding on the construction contracts. Therefore, there is no potential for conflict of interest.

After a thorough review of the funding sources, costs, and benefits, we believe that long-term management of the engineered beach environment in Waikīkī, through

implementation of a suite of mid-term projects, is not only a worthwhile endeavor in terms of conserving the Public Trust beach, shoreline access, and coastal ecosystems but is also an attractive and rewarding investment in and for the community and the public.

For additional information regarding project funding, please see the following sections of the FPEIS:

- Sections 2.4 and 16.3.1

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Lanning Lee <lanninglee@gmail.com>  
**Sent:** Friday, July 23, 2021 10:38 AM  
**To:** Waikiki  
**Subject:** Aloha, I would like to add my voice against building any more T-head groins in Waikīkī

We know from all our experience that these structures do not work. They deplete the shoreline of sand at an alarming rate, and are detrimental not only to beaches but to reefs as well. They are destructive, not constructive.

Dr. Charles Fletcher of the UH Geology and Geophysics Department, the number-one expert in the state on these matters, has already told us repeatedly that these structures are extremely harmful to the environment.

Please help save our shorelines and reefs. No more groins anywhere in Hawai'i. Mahalo for your kind consideration of this matter. Mālama pono. Mālama ka 'aina.

--

Aloha and peace be with you,

Lanning Christophersen Lee, Ph.D.  
Pronouns: He / Him / His

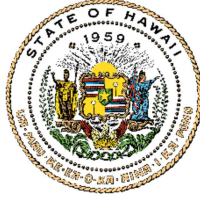
Author Site: [LanningLee.com](http://LanningLee.com)  
Publications: [lanninglee.com/publications/](http://lanninglee.com/publications/)

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National Suicide Prevention Lifeline: 1-800-273-8255  
International Association for Suicide Prevention: [https://www.iasp.info/resources/Crisis\\_Centres/](https://www.iasp.info/resources/Crisis_Centres/)  
Veterans Crisis Hotline: 1-800-273-8255 and Press 1

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Literature & Related: [www2.hawaii.edu/~lanning/welalit.html](http://www2.hawaii.edu/~lanning/welalit.html)  
University High School aka University Laboratory School Alumni Website: [juniorbowshi.com](http://juniorbowshi.com)

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SYLVIA LUKE  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Lanning Christophersen Lee, Ph.D.  
[lanninglee@gmail.com](mailto:lanninglee@gmail.com)

Mar 18, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Lanning Christophersen Lee:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

Comment: We know from all our experience that these structures do not work. They deplete the shoreline of sand at an alarming rate, and are detrimental not only to beaches but to reefs as well. They are destructive, not constructive. Dr. Charles Fletcher of the UH Geology and Geophysics Department, the number-one expert in the state on these matters, has already told us repeatedly that these structures are extremely harmful to the environment. Please help save our shorelines and reefs. No more groins anywhere in Hawai'i.

Response: A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as "engineered headlands."

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as "the most misused and improperly designed of all coastal structures." However, the 2006 manual

further explains that “when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches.”

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, “Without the groins there would have to be new sand put at Gray’s Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time.” (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State’s responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** Dennis Furukawa <rgp.dennis@gmail.com>  
**Sent:** Friday, July 23, 2021 10:42 AM  
**To:** sam.j.lemmo@hawaii.gov; Waikiki  
**Cc:** Moriwaki Sharon; eversole@hawaii.edu  
**Subject:** Re: Comments pertaining to Waikiki Beach Renourishment Plans.pdf  
**Attachments:** Comments pertaining to Waikiki Beach Renourishment Plans 6-26-21.pdf

Mr. Lemmo,

Please find attached comments pertaining to the Waikiki Beach Renourishment Plans.

If there are any questions or comments please do not hesitate to contact me.

Aloha,

Dennis Furukawa  
[rgp.dennis@gmail.com](mailto:rgp.dennis@gmail.com)



July 20, 2021

Comments pertaining to

ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE  
Waikīkī Beach Improvement and Maintenance Program  
December 2020

Hawai‘i Department of Land and Natural Resources  
Office of Conservation and Coastal Lands  
1151 Punchbowl Street, Suite 131  
Honolulu, Hawai‘i 96813

Comments by Dennis Furukawa, Honolulu  
Updated June 26, 2021  
[\[updated comments appended to original document\]](#)

### **PROJECT OBJECTIVES**

According to the EIS Preparation Notice dated December 2020, the primary objectives of the proposed actions are as follows:

- **Restore and improve Waikiki's public beaches.**
- **Increase beach stability through improvement and maintenance of shoreline structures.**

*Comment: In the DeRussy/Halekulai/Sheraton sectors the “restoration” or “improvement” of a “shoreline structure” such as the existing seawalls, is specifically not proposed, only the placement of new structures. PEIS 4.3.1: “The proposed action for the Fort DeRussy beach sector is beach maintenance consisting of sand backpassing with **no improvements or modifications to existing structures.**”*

*Moreover, “Deterioration and potential failure of the existing seawalls” is a primary problem at the Halekulani sector. The report notes the elevations of these seawalls fronting Halekulani as 5.2’-5.6’ MSL, elevations which are already overtopped by waves. The proposers failed to provide a site cross-section drawing through the Halekulani and Sheraton sand/seawall interface and hotel terraces. It is necessary to show the hotel terraces in the section, and not only a section through the sand, as with the sections at the DeRussy sector.*

- **Provide safe access to and along the shoreline.**

*Comment: Regarding the Halekulani portion of the project, proposers state in 5.2 Purpose and Need for the Proposed Action, that existing lateral access walkways are dangerous and obsolete:*

*“Walkways on top of the seawalls fronting the Halekūlani and Sheraton Waikiki hotels provide limited and discontinuous lateral access along the shoreline. The walkways are very narrow, are not ADA-accessible, and are subject to wave overtopping during high tides and high surf events. Structural damage has repeatedly resulted in closure of the walkways, which effectively prohibits lateral shoreline access between the Fort DeRussy and Royal Hawaiian beach sectors. There are no walkways across the small pocket beaches between the Halekūlani*

*and Sheraton Waikiki hotels making access extremely challenging for those with limited mobility. Lateral access is currently accomplished by walking around the landward portion of the intertidal beach which, given its low elevation, is frequently flooded and often submerged during high tides and high surf events.”,*

The PEIS does make mention of establishing an accessible walkway fronting the Halekulani and Sheraton Hotels, however, only as an optional element of the proposed actions, even though “*improve lateral shoreline access*” is 2<sup>nd</sup> on the list of priorities for the project (pg 77). There is no information given as to the location and foundation of such a walkway, and whether the walkway would add to the amount of additional beach fill the proposers would seek to place, whether it would modify or burden the existing seawall, what path it might take, and how access to Kalia Street would be improved.

- **Increase resilience to coastal hazards and sea level rise.**

Comment : 6/26/21 6:00pm Waikiki , 2.5 ft high tide, with a moderate swell from the south, wave run-up reached the terrace wall at the newly replenished beach fronting the Diamond Head wing of the Moana Surfrider Hotel and stretching beyond Dukes, and cleared the beach of seated visitors ahead of the sunset on a Friday evening: see Figure 1. To locals who observe the beach daily, the loss of sand due to the high tides at the Moana hotel was visible, however, the size of the sandbar in front of the Royal hotel was increased noticeably. The width of beach from face of the Moana’s bar terrace wall to crest of sandbank was reduced to less than 30’ due to the high tides and wave action since reopening of the beach.



**Figure 1 6/26 afternoon beach cleared due to 2.5' high tide**

A sandy beach fronting the Halekulani section is not specifically necessary for protection against coastal hazards, nor is placement of sand in the face of rising seas “resilient.” By definition, a resilient solution would reduce the need for repairs or renourishment, and not create a situation that required repeated interventions, as would likely be the case at the Halekulani sector. The proposed project could have similar recurring needs as the DeRussy sector:

*“The proposed sand backpassing could be performed as a single project but is intended to be implemented as an ongoing maintenance program...Over a period of 50 yrs, this will result in a total of 17 individual sand backpassing events and a total of 170 days of construction.” [comment: do estimates assume*

the rate of sea level rise occurs as predicted, and there are no intervening hurricanes or tidal surges that increase erosion?]

In addition, in light of the nature of the permit requested, if coastal erosion forces accelerate, would the permit allow for more frequent or eventually semi-permanent backpassing or dredging? Is there any environmental monitoring as part of this permit? It would be prudent to require environmental assessments of impacts to water quality associated with sand pumping and placement. The cloudiness of waters off of the Royal and Moana Surfrider hotels due to the recent placement of sand made visibility extremely poor for several weeks, and uninviting for many locals.

An alternative to the proposed DeRussy sector design: move the existing walkway further inland (makua), and allow the sand to gradually spread onto the shoreline, naturally adding beach. Relocation of existing amenities would be necessary, but in reality, the amenities are already at risk and compromised by the low site elevations.

Comment: The materials under consideration in the PEIS for adorning the groins are less appropriate than natural rocks, which quickly cover with sea flora.

**Prior Comments, revised with comments:**

1. Regarding the portion fronting Halekulani and Sheraton hotels (Halekulani Beach Sector) referred to herein in this document as the “subject shoreline”:
  - a. That portion of subject waterfront has never had a significant sandy beach, except that portion known as Grays Beach, and is currently fronted by seawalls (see Exhibit A-2). Therefore any placement of beach sand, boulders etc would not constitute “replenishment” but rather be new fill, and be subject to The Clean Water Act Section 404, and be subject environmental review.
  - b. Likely significant environmental impacts of placing new fill:
    - i. The nearshore waters (those within 50 yards of the existing seawalls) directly fronting the subject properties are known to be habitat for a large number of sea turtles, who can be observed feeding and swimming in that area in particular, as it is not currently popular as a surfing or swimming area. In contrast, the nearshore waters directly in front of the Royal Hawaiian and Moana Surfrider hotels are largely devoid of turtles or fish, as the water quality is poor due to the large numbers of swimmers and surfers causing turbulence, walking on coral and disturbing sand, and introducing waterborne pollutants (urine, sunscreen, rubbish, fragrances, hormones, noise etc.).

Comment: The objectives of DeRussy beach sector by WBCAC note “Lack of amenities” as a priority, and yet no amenities are proposed in any part of the proposal, in particular the Halekulani sector, even as a mitigation to the obvious

environmental harms that will result from crowds of people without public restrooms and workers at hand to remove garbage.

Comment 6/26/21: Since the post-Covid reopening of Waikiki Beach, the mismanagement of the rubbish problem has become a public hazard. At the walkway between the Royal Hawaiian Hotel and the Outrigger, the problem is in full view. People rummage through the rubbish and it spreads over a wider area such that approaching the rubbish cans is hazardous.



**Figure 2 Daily rubbish problem at Outrigger Hotel beach.**

The amount of pollutants on the beach and in the waters off of the Royal and Moana Surfrider hotels has gotten out of hand. Plastic, glass and metal litter is everywhere on the sand and there seems to be no provision made for the disposal of rubbish. A pair of ugly steel barrels were placed at the walkway next to The Royal Hawaiian/Outrigger, which attract piles of bags and boxes crammed with food wastes, used facemasks, bottles and diapers. Due the significant impacts that resulted from reopening the Moana/Outrigger beach sector, the proposers should be required to perform periodic environmental assessments of impacts to water quality associated with the proposed projects, particularly tests that measure pathogens and quantities of litter.

Many plastic cups and bottles and beach toys end up in the ocean on a daily basis, and drift into the surf and beyond. It is common among beachgoers to urinate in the ocean or in the bushes rather than to seek restrooms because there are no convenient options on offer, and it seems the responsibility of the visitors industry to mitigate the problems that will certainly result if no basic amenities are provided. Having beach cleanup crews on the sand would prevent significant amounts of plastic, towels, shoes, bags, cans, bottles, and beach toys from entering the ocean and littering the beach.

Comment: Periodic machine raking of the beach was performed during nights along the Royal / Moana beaches (perhaps at Ft. DeRussy as well but I had no occasion to witness it happening since reopening the beach). Is cleaning of the beach still performed, and if so, how and by whom?

Comments regarding *Unavoidable Impacts section 10*: There is no discussion of the migration of renourishment sands that have been placed on the beach that are washed into the ocean, due to wave and tidal action, a process that is ongoing, and due to sea level rise, is accelerating. Planned repetitive renourishment operations have the real potential for lasting cumulative impacts to corals and marine fauna.

- ii. The proposed T-shaped groins (see Exhibit A-1) will alter the flow of water and sand, and will likely adversely affect the popular surf spots (Popular's, Paradise, and Three's) by establishing new structures that will reflect wave energy, and alter the seafloor contours through sand migration and the smothering of coral reefs.
  - iii. The establishment of beach where people will congregate will increase the amount of waterborne pollutants (urine, sunscreen, rubbish, fragrances, hormones, noise etc.), resulting in the loss of suitable habitat for the aquatic life.
  - iv. No facilities are planned for the subject shoreline, namely any restrooms, showers, rubbish cans, or lifeguard towers. These are essential facilities, as the beach users can be expected to try using facilities in the Sheraton or Halekulani hotels, which is almost certain to create problems with hotel management and guests. Note that beach showers are a significant source of pollutants, and should not be located where they drain directly into the ocean or groundwater.
- c. Pedestrian access issues
- i. The proposed design (Exhibit A-1) makes no mention of how pedestrians will be accommodated between Ft. DeRussy and Royal Hawaiian beaches. Sand is not an accessible pathway, and T-groins themselves are barriers.
  - ii. Prior to the closure of the walkways fronting the Halekulani and the Sheraton hotels, pedestrians were afforded views directly down into the water, where many locals and visitors alike were able to view turtles and fish, even the occasional shark. That walkway was the only spot in along the main Waikiki waterfront where such viewing was possible, especially for disabled persons (the groins and rock jetties are not accessible and are subject to overtopping by waves). Placing a beach there would eliminate that unique resource.
  - iii. Accessible pathways:

1. The existing walkways are too narrow to permit two-way pedestrian traffic, and should be increased in width to a minimum of 10' clear width to meet the spirit of accessible pathways laws and allow groups of pedestrians the ability to pass one another.
  2. Access to the waterfront does not currently meet the American Disability Act, and must be provided, as the improvements are public in nature, using public funds.
- d. Sea level rise:
- i. As oceans rise, the proposed beaches will erode more rapidly each year. The beaches will require increasing amounts of sand to be placed in order to maintain dry sand. In order for that to happen a foundation of sand will need to be maintained and expanded, each time increasing the environmental impacts of placing the sand there in the first place.
  - ii. The seawalls that currently front the Halekulani and Sheraton hotels are not subjects of the proposed projects, however they are in a degraded condition, and are integral to the objective of providing pedestrian access between the Ft. DeRussy and Royal Hawaiian beaches. At some point those seawalls will be too low to prevent overtopping of waves, as is already apparent at Grays Beach, where the sand is already piling 3'-4' above the Hau Tree Terrace lawn and patio elevations.
  - iii. Sandbags have been placed at the Sheraton's beach services concessions to allow the sand to build up higher than the paved areas and walkways leading to Kalia St. Therefore it would be better to rebuild the seawalls as a more practical response to rising sea levels.
  - iv. The design of the T-groins was proposed years ago (draft April 2000) as part of recommendations for beach improvements. As part of that proposal hydrodynamic modeling was not done, and so far the only information that has been presented appears to be based upon the opinions of the project proposers. Considering that the subject waterfront is such a critical resource for the State and the County's economy, physical modeling the proposed designs is essential to prevent unintended consequences, especially as sea levels rise.
2. Regarding the portion of the shoreline between Halekulani and Ft. DeRussy, which is referred to herein as the "Outrigger shoreline", and differs from the subject shoreline in the following respects:
- i. Sandy beach has been present for many decades;
  - ii. Shoreline properties are not fronted by seawalls;
  - iii. Paved shoreline pathways have never been in place.
  - iv. Buildings are closer to the shoreline

- a. Because of the above points it may make more sense to treat the Outrigger shoreline as a part of the Ft. DeRussy shoreline than the subject shoreline.

Comment added: extending the walkway from Ft. DeRussy across to Gray's beach may provide protection against wave energy and rising seas if properly designed.

- b. Likely environmental impacts of placing new fill:
  - i. The top of pavement elevation of the walkway dividing Ft. DeRussy and the Aston Waikiki Shore was measured at 40" above the water level at the storm drain grates in that walkway. The existing beach sand at the makai edge of pavement is higher than the walkway by over one foot currently. Waves already overtop the sand and wash down the walkway during high tides and moderately large swells. As the beach fill responds to currents and waves, the slope of the resulting beach will steepen (as evidences by the steep slopes at the Moana shoreline), and increase backwash towards the Three's surfbreak.
- c. Pedestrian access issues:
  - i. in order to provide ADA accessible travel in front of the Outrigger, a concrete sidewalk supported by a retaining wall foundation would be ideal, thus providing both access and protection. Therefore it would seem that it is an opportunity to construct the pathway as part of protecting the Outrigger's shoreline.
  - ii. Walkways leading from Saratoga St. to the shoreline are ADA accessible, so making the shoreline pathway accessible is a simple matter.
- d. Sea level rise:
  - i. Due to the location of Outrigger, waves already break against the makai exterior walls of the hotel. As sea levels rise, sand placed in front of the hotel will not stop wave action from washing the sand away, as evidenced by sandbags placed at the Moana Surfrider's Banyan Tree Terrace, and at Grays Beach access walkway. The seaward wall of the Outrigger will reflect wave energy back towards the sea taking the sand with it.
  - ii. In recognition of the fact that waves already wash down the walkways leading to Kalia St, pushing sand inland, alternatives to beach renourishment should be prioritized.

### 3. Alternative proposal

- a. In the Project Objectives in this paper's introduction, objective #3 is "Providing safe access to and along the shoreline." As this access is not discussed in the EIS Preparation Notice, I am proposing an alternative design that seeks to address that objective. In addition, my

proposed alternative design is intended to address all of the Project Objectives 1-4.

- b. Alternative Project Description (see Exhibits B-1 through B-5)  
(comment: exhibits omitted for brevity)
  - i. Access
    - 1. The project would focus on reestablishing public access to the shoreline by creating an ADA accessible pathway by improving the existing pathways fronting the Halekulani and Sheraton hotels. A new 10' walkway would cantilever over the water at the same elevation of that fronting the Sheraton (approx. +7' MSL) supported by new stone buttresses placed perpendicular to the existing seawall (see Exhibit B-1). The walkway structure would span between the existing Royal Hawaiian groin to Grays beach, and from Gray's beach to the Outrigger shoreline.



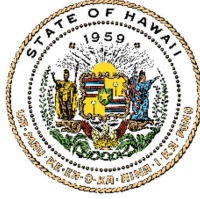
End of document

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JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
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COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
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Mar 18, 2024

**SUBJECT:** Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Dennis Furukawa:

Thank you for your letter dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your letter you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We appreciated your comments on the EISPN and hope that our responses to your comments were satisfactory. The following responses are limited to the additional comments you provided specifically for the DPEIS.

**Comment:** In the DeRussy/Halekulani/Sheraton sectors the “restoration” or “improvement” of a “shoreline structure” such as the existing seawalls, is specifically not proposed, only the placement of new structures.

**Response:** Waikīkī is a predominantly engineered shoreline. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. Currently, almost the entire length of the Waikīkī shoreline (approximately 1.95 miles) is armored by seawalls, most of which were constructed in the early 1900s. Generally, the DLNR does not regulate land uses mauka (landward) of the shoreline in Waikīkī. Responsibility for regulation and permitting typically rests with the City and County of Honolulu. The majority of the existing seawalls are privately-owned structures. As a result, the Program does not propose to repair, modify, replace, or remove any of the existing seawalls.

For information about existing structures, please see the following section of the FPEIS:

- Section 2.1

**Comment:** Deterioration and potential failure of the existing seawalls is a primary problem at the Halekulani sector. The report notes the elevations of these seawalls fronting Halekulani as 5.2'-5.6' MSL, elevations which are already overtopped by waves. The proposers failed to

provide a site cross-section drawing through the Halekulani and Sheraton sand/seawall interface and hotel terraces. It is necessary to show the hotel terraces in the section, and not only a section through the sand, as with the sections at Fort DeRussy.

Response: We agree that the current condition of the seawalls and walkways in the Halekulani beach sector are concerning from both an aesthetic and public health and safety perspective. Generally, the DLNR does not regulate land uses mauka (landward) of the certified shoreline in Waikīkī. Responsibility for regulation and permitting typically rests with the City and County of Honolulu. The majority of the existing seawalls are privately-owned structures. As a result, the Program does not propose to repair, modify, replace, or remove any of the existing seawalls.

We acknowledge that the proposed action may exceed the crest elevation of the existing seawalls. The topographic data presented in the DPEIS was based on existing data (e.g., LiDAR), which we feel was sufficient to develop conceptual plans and evaluate potential impacts. A topographic survey of the Ft. DeRussy and Halekulani beach sectors was performed after the DPEIS was published. Additional topographic surveys will be completed as needed during the final design phase. If necessary, the proposed action will be modified to accommodate the existing seawalls. This may require modification of the existing structure or the addition of new structures to stabilize the beach fill and prevent wave overtopping.

For information about the proposed action in the Halekulani beach sector, please see the following section of the FPEIS:

- Section 5.3

Comment: Regarding the Halekulani portion of the project, proposers state in *Section 5.2 Purpose and Need for the Proposed Action*, that existing lateral access walkways are dangerous and obsolete. The PEIS does make mention of establishing an accessible walkway fronting the Halekulani and Sheraton Hotels, however, only as an optional element of the proposed actions, even though “improve lateral shoreline access” is 2nd on the list of priorities for the project (pg 77). There is no information given as to the location and foundation of such a walkway, and whether the walkway would add to the amount of additional beach fill the proposers would seek to place, whether it would modify or burden the existing seawall, what path it might take, and how access to Kalia Street would be improved. Extending the walkway from Ft. DeRussy across to Gray’s beach may provide protection against wave energy and rising seas if properly designed.

Response: We acknowledge that lateral shoreline access is currently limited in the Halekulani beach sector and agree that improved access in this area is desirable. The proposed actions will increase dry beach area, which will help to improve lateral shoreline access. While we acknowledge that access via the sandy beach may not be ADA-compliant, it will be safer and more passable than the current conditions. We also agree that a continuous walkway across the Halekulani beach sector is a desirable amenity. We will continue to explore potential design alternatives and may seek to incorporate a walkway at a later phase in the Program, at which time we may need to submit a Supplemental EIS.

For information about the proposed action in the Halekūlani beach sector, please see the following section of the FPEIS:

- Section 5.3

Comment: A sandy beach fronting the Halekulani section is not specifically necessary for protection against coastal hazards, nor is placement of sand in the face of rising seas “resilient.” By definition, a resilient solution would reduce the need for repairs or renourishment, and not create a situation that required repeated interventions, as would likely be the case at the Halekulani sector. The proposed project could have similar recurring needs as the DeRussy sector.

Response: The primary objectives of the Program are to increase dry beach area and improve lateral shoreline access. While the proposed groins will provide a natural buffer that will decrease exposure of buildings and infrastructure to coastal hazards, protection of such physical assets is not a primary objective of the Program. The groins are designed to produce stable beach cells that will be less susceptible to erosion, which will reduce the need for periodic maintenance and renourishment. *Resilience* is defined as the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events (National Academies of Science, 2021). The groins are designed to absorb wave action and reduce hazard exposure and can also be adapted as sea levels continue to rise, which is consistent with the definition of *resilience*.

Comment: The DPEIS states that “*The proposed sand backpassing [in the Fort DeRussy beach sector] could be performed as a single project but is intended to be implemented as an ongoing maintenance program...Over a period of 50 yrs, this will result in a total of 17 individual sand backpassing events and a total of 170 days of construction.*” Do estimates assume the rate of sea level rise occurs as predicted, and there are no intervening hurricanes or tidal surges that increase erosion? In addition, in light of the nature of the permit requested, if coastal erosion forces accelerate, would the permit allow for more frequent or eventually semi-permanent backpassing or dredging?

Response: For discussion purposes, *beach improvements* refer to actions that involve adding new sand, constructing new structures, and/or modifying existing structures. *Beach improvement* options include beach nourishment with stabilizing groins, segmented breakwaters, and modifications to existing structures. *Beach maintenance* refers to actions that involve using existing sand or adding sand with no new structures or modifications to existing structures. Beach maintenance options include beach nourishment, sand backpassing, sand pushing, and sand pumping. Here, the proposed beach improvements actions are designed to account for 1.5 ft of sea level rise and may be adapted as sea levels continue to rise. The proposed beach maintenance actions are not designed to account for sea level rise or episodic hazard events, such as hurricanes or tsunamis. These actions are intended to be conducted on a periodic basis and may be adapted as sea levels continue to rise. What would be permitted would be at the authorizing agency’s discretion. If the frequency of beach maintenance is determined not to be sustainable in the long-term, alternative approaches may be

considered in the future. Permitting requirements are still being determined and will be finalized once the design phase is completed.

For information about the proposed action in the Fort DeRussy beach sector, please see the following section of the FPEIS:

- Section 4.3

Comment: Is there any environmental monitoring as part of this permit? It would be prudent to require environmental assessments of impacts to water quality associated with sand pumping and placement. The cloudiness of waters off of the Royal and Moana Surfrider hotels due to the recent placement of sand made visibility extremely poor for several weeks, and uninviting for many locals.

Response: Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality and turbidity, please see the following section of the FPEIS:

- Section 8.7

For information about water quality monitoring, please see the following section of the FPEIS:

- Section 8.7

Comment: An alternative to the proposed DeRussy sector design: move the existing walkway further inland (mauka) and allow the sand to gradually spread onto the shoreline, naturally adding beach. Relocation of existing amenities would be necessary, but in reality, the amenities are already at risk and compromised by the low site elevations.

Response: Generally, the DLNR does not regulate land uses mauka (landward) of the certified shoreline in Waikīkī. Responsibility for regulation and permitting typically rests with the City and County of Honolulu. The existing seawall in the Fort DeRussy beach sector is a privately-owned structure. As a result, the Program does not propose to repair, modify, replace, or remove the existing seawall. The proposed actions will

increase dry beach width and improve lateral access and would not preclude private landowners from proceeding with any structural repairs that may be necessary now or in the future.

For information about the proposed action in the Fort DeRussy beach sector, please see the following section of the FPEIS:

- Section 4.3

Comment: The materials under consideration in the PEIS for adorning the groins are less appropriate than natural rocks, which quickly cover with sea flora.

Response: We agree that natural stone is the preferred material for groin and breakwater construction as these materials are naturally occurring, inert, and can be locally sourced. The proposed groins in the Halekulani beach sector will be constructed of natural stone (e.g., basalt). We evaluated potential alternative armor units (see Section 3.8 of the FPEIS). At this time, a nominal amount of EConcrete is proposed in the 'Ewa (west) basin of the Kūhiō beach sector. When compared to standard concrete used in other armor units, EConcrete reportedly provides higher compressive strength and lower pH levels. The low pH levels reportedly promote better coral growth. Each of the products has unique textured surfaces that reportedly improve marine life and coral structure growth. Production of calcium carbonate from higher levels of marine life provides an additional bond between concrete armoring units, strengthening and stabilizing the structure. The EConcrete material will be placed along the inshore side of the segmented breakwater in the 'Ewa (west) basin of the Kūhiō beach sector. The primary purpose for incorporating EConcrete is to evaluate the performance of these materials in the marine environment. The proposed location is ideally suited for material experimentation due to the low amount of wave energy and increased likelihood of stability.

For information about alternative armor units, please see the following section of the FPEIS:

- Section 3.8

Comment: The objectives of DeRussy beach sector by WBCAC note “Lack of amenities” as a priority, and yet no amenities are proposed in any part of the proposal, in particular the Halekulani sector, even as a mitigation to the obvious environmental harms that will result from crowds of people without public restrooms and workers at hand to remove garbage.

Response: The mission of the DLNR is to enhance, protect, and conserve natural, cultural, and historic resources. The primary objectives of the Program are to increase dry beach area and improve lateral shoreline access. While we agree that additional beach amenities (e.g., restrooms, showers, rubbish cans) are desirable in Waikīkī, the addition of such amenities is not a primary objective or a necessary component of the Program. The project area is considered submerged land and is not ideal to site amenities as these features may be affected by coastal processes or inclement weather. The land is unencumbered public land and not under Park management. Furthermore, existing beach amenities in Waikīkī are typically either public amenities or services (e.g.,

restrooms, showers, rubbish cans) that are managed by the City and County of Honolulu, or private amenities or services (e.g., umbrella and chair rentals, ocean recreational equipment rentals, surfing lessons, catamaran rides, etc.) that are managed by private hotels/resorts and commercial beach concessions.

Comment: Since the post-Covid reopening of Waikiki Beach, the mismanagement of the rubbish problem has become a public hazard. At the walkway between the Royal Hawaiian Hotel and the Outrigger, the problem is in full view. People rummage through the rubbish and it spreads over a wider area such that approaching the rubbish cans is hazardous. The number of pollutants on the beach and in the waters off of the Royal and Moana Surfrider hotels has gotten out of hand. Plastic, glass and metal litter is everywhere on the sand and there seems to be no provision made for the disposal of rubbish. A pair of ugly steel barrels were placed at the walkway next to The Royal Hawaiian/Outrigger, which attract piles of bags and boxes crammed with food wastes, used facemasks, bottles and diapers. Due the significant impacts that resulted from reopening the Moana/Outrigger beach sector, the proposers should be required to perform periodic environmental assessments of impacts to water quality associated with the proposed projects, particularly tests that measure pathogens and quantities of litter. Many plastic cups and bottles and beach toys end up in the ocean daily, and drift into the surf and beyond. It is common among beachgoers to urinate in the ocean or in the bushes rather than to seek restrooms because there are no convenient options on offer, and it seems the responsibility of the visitor's industry to mitigate the problems that will certainly result if no basic amenities are provided. Having beach cleanup crews on the sand would prevent significant amounts of plastic, towels, shoes, bags, cans, bottles, and beach toys from entering the ocean and littering the beach.

Response: We acknowledge and agree with your concerns regarding the abundance of rubbish in Waikīkī. The primary responsibility for managing waste collection and disposal in Waikīkī rests with the City and County of Honolulu, Department of Environmental Services, Refuse Division. The DLNR does not have the jurisdiction or authority to address this matter. Our jurisdiction and authority is generally limited to the area makai (seaward) of the certified shoreline, which is established by law (Chapter 205A, Hawai'i Revised Statutes) and confirmed through a regulatory process (Chapter 13-222, Hawai'i Administrative Rules).

Comment: Periodic machine raking of the beach was performed during nights along the Royal / Moana beaches (perhaps at Ft. DeRussy as well but I had no occasion to witness it happening since reopening the beach). Is cleaning of the beach still performed, and if so, how and by whom?

Response: We agree that routine beach cleaning would be beneficial in Waikīkī. Previous beach cleaning efforts have been conducted by the City and County of Honolulu and private hotels/resorts. While we are not aware of any existing programs or dedicated funds to support routine beach cleaning in Waikīkī, we understand that the Waikīkī Special Improvement District Association (WBSIDA) has engaged the City and County of Honolulu, Department of Parks and Recreation to discuss potential options to establish such a program through a joint public-private partnership.

Comment: *Section 10: Unavoidable Impacts:* There is no discussion of the migration of renourishment sands that have been placed on the beach that are washed into the ocean, due to wave and tidal action, a process that is ongoing, and due to sea level rise, is accelerating. Planned repetitive renourishment operations have the real potential for lasting cumulative impacts to corals and marine fauna.

Response: We acknowledge your concerns regarding the potential loss of beach fill via cross-shore sediment transport and the associated potential impacts to the marine environment. Sediment transport in the Fort DeRussy beach sector is primarily alongshore (east to west), so we anticipate that any beach fill that is mobilized by wave action will be transported along the shoreline and deposited at the accreted area adjacent to the Hilton Pier and groin.

Sediment transport in the Halekūlani beach sector is primarily cross-shore. The proposed groins are designed to produce stable beach cells that will be less susceptible to erosion, which will limit the loss of sand via cross-shore transport. Any nominal volume of sand that may be lost to erosion would likely be deposited in the Halekūlani Channel where the seafloor primarily consists of sandy substrate that is largely devoid of marine habitat.

Periodic renourishment is only proposed in the Royal Hawaiian Beach sector where sediment transport is both alongshore (east to west) and cross-shore. We conducted wave and circulation modeling to identify sediment transport pathways. The modeling confirmed that sediment (sand) is primarily transported via a channel that extends between the central portion of the beach and the material is deposited at the *Canoes/Queens* offshore sand deposit. The proposed action involves recovery of sand from the *Canoes/Queens* deposit and placing it back on the shoreline. The proposed action will utilize existing sand and will not increase the volume of sand in the littoral system.

Sediment transport in the Kūhiō beach sector 'Ewa Basin is both alongshore (east to west) and cross-shore. The 'Ewa basin is semi-enclosed, and the proposed segmented breakwater is designed to produce a stable beach cell, which will limit the loss of sand via cross-shore transport. Based on the current and circulation model results, any nominal volume of sand that may be lost to erosion would likely be deposited in the *Canoes/Queens* deposit. The proposed action in the Kūhiō beach sector Diamond Head Basin will utilize existing sand and will not increase the volume of sand in the littoral system. The Diamond Head basin is separated from the ocean by the existing breakwater, so no loss of sediment via cross-shore transport is anticipated.

For information about currents and circulation, please see the following section of the FPEIS:

- Section 9.4.6

Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.



Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

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**From:** Sebastian Kevany <sebastian.kevany@gmail.com>  
**Sent:** Friday, July 23, 2021 10:52 AM  
**To:** Waikiki  
**Cc:** zacharyhitchcock1963@gmail.com  
**Subject:** Waikiki Beach Improvements EIS

Dear Sir or Madam,

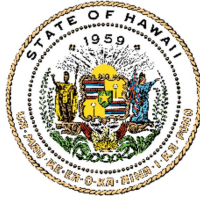
In regards the above, my consideration is that it, in 2021, is rarely advisable to engage in further human construction or encroachment on the ocean, no matter what the economic or other rationale. Any form of construction can be bad construction, when viewed from a certain perspective, particularly when it comes to marine life and coral health.

There is also a guaranteed element of unpredictability and unintended consequences which wil arise from such constriction, in my opinion, that no EIA can adequately predict. Therefore, unless this is for the good of the ocean, the coral reef, and marine life, I would prefer to prioritize nature over human and / or commercial needs. Thank you!

Sebastian

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**KA 'OIHANA KUMUWAIWAI 'ĀINA**  
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CHAIRPERSON  
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**RYAN K.P. KANAKA'OLE**  
FIRST DEPUTY

**DEAN D. UYENO**  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Sebastian Kevany  
[sebastian.kevany@gmail.com](mailto:sebastian.kevany@gmail.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Sebastian Kevany:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

## Waikiki

---

**From:** claireshearman@live.com  
**Sent:** Friday, July 23, 2021 10:59 AM  
**To:** Waikiki  
**Subject:** Draft Environmental Impact Statement (DEIS) for the Waikiki Beach Improvement and Maintenance Project

Aloha

I am writing to you about this proposal.

As a person who has visited Waikiki for over 10yrs id like to share that no tourist wants this. Wevwant the beach to stay pristine and untouched, let mother nature do the sand movement and not humans.

It's a waste of money and the impact you could have on already dwindling numbers of turtles is horrifying.

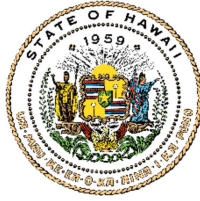
Please don't do this

Mahalo

Sent from my iPhone

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



**KA MOKU'ĀINA 'O HAWAI'I**  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Claire Shearman  
[claireshearman@live.com](mailto:claireshearman@live.com)

Mar 18, 2024

**SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program**

Dear Claire Shearman:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) is pleased to provide the following responses to your comments.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0377.

Sincerely,

*S Michael Cain*

S. Michael Cain, Administrator  
Office of Conservation and Coastal Lands

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Claire Shearman  
[claireshearman@live.com](mailto:claireshearman@live.com)

Sep 5, 2024

SUBJECT: Response to Draft Programmatic Environmental Impact Statement (DPEIS)  
Comments on the Waikīkī Beach Improvement and Maintenance Program

Dear Claire Shearman:

Thank you for your email dated July 23, 2021, regarding the Waikīkī Beach Improvement and Maintenance Program Draft Programmatic Environmental Impact Statement (DPEIS). In your email you summarized your consideration of and comments for the proposed actions. As the Applicant, the Department of Land and Natural Resources (DLNR) provided a response letter dated March 18, 2024, acknowledging that you are opposed to the proposed program. The DLNR is pleased to provide the following additional responses to your specific comments.

Comment: We want the beach to stay pristine and untouched, let mother nature do the sand movement and not humans. It's a waste of money and the impact you could have on already dwindling numbers of turtles is horrifying.

Response: While some coastlines have natural features such as headlands, embayments, or reefs that naturally disrupt sediment transport and stabilize the sand, exposed coastlines are more prone to erosion. Accordingly, erosion limits the effectiveness of beach nourishment projects, particularly along shorelines that are subject to chronic, seasonal, and/or episodic erosion. Thus, without additional mitigative measures, rates of pre-project beach erosion should be expected to continue following a beach nourishment project. However, in some cases, engineered beach stabilizing structures that mimic these natural features, such as T-head groins (engineered headlands), can be constructed to maintain a stable beach. In particular, T-head groins decrease and reorient wave energy approaching the shoreline and create artificial littoral cells to stabilize the sand.

There are numerous examples around the world of arc-shaped shorelines adjacent to headlands, both natural and manmade. The knowledge gained from studying natural headland-bay beaches provides a design tool for coastal engineers to produce stable sandy shorelines. Hsu and Evans (1989), Silvester and Hsu (1993), and Klein et. al (2003) present methods for determining the stable beach planform adjacent to rocky headlands, thus facilitating the use of engineered artificial headlands as beach stabilizing structures. Bodge (1998, 2003) furthered these studies by presenting a

method for estimating the stable shoreline position for a beach between two T-head groins. This approach has been implemented successfully in numerous locations in Florida and the Caribbean (Bodge, 1998), and more recently at Iroquois Point on O‘ahu (2013).

To be most effective, the groin layout and head angles should be oriented such that the gap opening is approximately parallel with the average prevailing wave crest. The heads of the T-groins can be aligned (tuned) according to the prevailing wave crest orientation to produce the desired beach configuration. The groin head lengths should be such that a minimum ratio of gap width to head width of about 60:40 is maintained so that the groins do not dominate viewplanes toward and along the shoreline. Rubblemound T-head groins are recommended to reduce rip currents, wave reflection, and the loss of sand via cross-shore transport. The beach should be nourished with sand immediately following groin construction to achieve the predicted shoreline shape.

#### Straight Groins vs. T-head Groins

A straight groin is a structure built perpendicular to the shoreline for the purpose of interrupting longshore sand transport. These structures are very common along sandy shorelines with extensive sand transport rates. The groins work by blocking the longshore transport of sand, resulting in the groin trapping sand on its updrift side, while the downdrift side generally experiences erosion. These structures are therefore typically part of a system known as a groin field.

T-head groins are also perpendicular to the shoreline; however, their purpose is different from straight groins. T-head groins are designed to change the wave shape as it approaches the shoreline to produce a diffracted, or curved, wave. This curved wave is what produces a stable beach cell between the groins. T-head groins are more appropriately referred to as “engineered headlands.”

It is critical to point out that straight groins and T-head groins are not interchangeable and do not have the same impacts. Several respondents noted that the U.S. Army Corps of Engineers Coastal Engineering Manual (2006) describes groins as “the most misused and improperly designed of all coastal structures.” However, the 2006 manual further explains that “when properly designed, constructed and combined with beach nourishment, groins can function effectively under certain conditions, particularly for increasing the fill life (longevity) of renourished beaches.”

Here, T-head groins are proposed for implementation at the Halekūlani beach sector. The Halekūlani beach sector is bounded by the Royal Hawaiian Groin (to the east) and the Fort DeRussy outfall/groin (to the west). The proposed improvements in the Halekūlani beach sector include adding a head to the Royal Hawaiian Groin and building a new groin adjacent to the Fort DeRussy outfall/groin. The proposed action is not anticipated to exacerbate any downdrift erosion that may already be occurring in the adjacent beach sectors because the design team used proven design guidance based on existing natural shorelines to produce the designs for the Halekūlani beach sector. The proposed T-head groins are designed to produce a series of stable headland-bay beach cells that mimic nature and are necessary to stabilize the sand fill. As renowned

coastal geologist and University of Hawai'i Professor Charles Fletcher recently stated, "Without the groins there would have to be new sand put at Gray's Beach in a couple of years...The groins will allow that sand to be stable for a longer period of time." (<https://www.staradvertiser.com/2021/03/08/hawaii-news/as-rising-seas-invade-waikiki-resorts-the-state-proposes-adding-more-groins/>).

There is a common misconception by the media and the general public that T-head groins are equivalent to "shoreline armoring," which typically refers to seawalls, revetments, bulkheads, and other structures that are oriented along and parallel to the shoreline. Shoreline armoring is typically intended to mitigate erosion and loss of land, retain soil loads, and reduce or mitigate wave overtopping and flooding. These structures are therefore appropriately referred to as "shore protection structures". T-head groins (or engineered headlands) consist of stems that are oriented perpendicular to the shoreline, and heads which are approximately parallel to the shoreline but located further offshore. T-head groins are a component of a sand/structure system that is designed to create stable beaches. These structures are therefore appropriately referred to as "beach stabilizing structures." There are fundamental differences between beach stabilizing structures and shore protection structures as their design characteristics, intended uses, and potential impacts are substantially different.

Shore protection structures are designed to mitigate erosion and loss of land by creating a hard barrier between the land and the ocean, thereby preventing the loss of sediment in the cross-shore direction. While shore protection structures can be very effective in stabilizing the shoreline and protecting land and infrastructure, they are not designed to maintain a stable beach. In some cases, the presence of an armored shoreline can exacerbate beach erosion, particularly along chronically eroding shorelines. In contrast, beach nourishment combined with beach stabilizing structures is designed to stabilize sandy shorelines by inhibiting the movement of sand along the shoreline. In Hawai'i, all lands below the shoreline (including beaches) are held in Public Trust by the State for the people of Hawai'i. As such, the primary function of beach stabilizing structures is to protect and preserve sandy beaches for the use and enjoyment of the public.

Almost the entire length of the Waikīkī shoreline is armored by seawalls, most of which were constructed in the early 1900s. While in some cases erosion may occur landward of a shore protection structure, this is typically the result of a structural deficiency such as undermining. However, if a shore protection structure is properly maintained, it is unlikely that erosion would extend landward of the structure. The presence of a sandy beach seaward of the existing shore protection structures in Waikīkī will further reduce the potential for erosion. Without the proposed Program, it is likely that sea level rise will result in total beach loss in many areas of Waikīkī within this century as the beaches are "squeezed" between rising water levels and the existing shore protection structures.

Both shore protection structures and beach stabilizing structures have the potential to exacerbate erosion. For shore protection structures, erosion is typically localized near the ends of the structure. This process, which is commonly referred to as "flanking erosion," is difficult to mitigate because it is caused by wave action. Flanking erosion is typically more progressive along chronically eroding shorelines that lack sandy beaches.



For beach stabilizing structures, erosion typically occurs on the downdrift side of the terminal groin based on the predominant direction of sediment transport. This process, which is commonly referred to as “downdrift erosion,” can be mitigated by conducting beach nourishment and groin construction concurrently. Downdrift impacts can also be mitigated by designing and locating the structures in a manner that minimizes the potential for downdrift erosion to occur, such as at an existing groin or a littoral cell boundary. In Waikīkī, the shoreline is compartmentalized into discrete “sectors” that are bounded by structures. The proposed groins are located in areas where the shoreline is already compartmentalized by structures, thereby reducing the potential for downdrift impacts. Shore protection structures can also reflect a substantial amount of wave energy, whereas beach stabilizing structures are designed to dissipate and absorb wave energy. The proposed groins will provide superior stability for the beach, and the sand fill will mitigate wave energy reflection from the existing seawalls. The heads of the new groins will help prevent the formation of offshore rip currents along the groin stems, and thus reduce cross-shore sediment transport.

#### Potential Impacts to Reefs and Marine Habitat

The proposed action would result in 3.8 acres of hard bottom being covered by rocks and sand. The area within the project footprint is regularly scoured by wave action and is characterized as a barren reef flat (see Section 8.10 and Appendix C of the FPEIS). Ecological services of reef flat habitat will be lost under the project footprints (sand and groins) but are anticipated to recover over time as the benthic community re-establishes. The scoured hard bottom will be partially replaced with rock rubble mound groins that offer relief for marine creatures and were shown at Iroquois Point to result in a significant increase in fish biodiversity and biomass (see Section 8.10 and Appendix C of the FPEIS). Similar results are anticipated in Waikīkī.

We acknowledge that the proposed action in the Halekūlani beach sector has the potential to affect marine habitat and protected species. While a certain amount of turtle foraging area that extends close to shore and would be displaced, the majority of the foraging area extends well beyond the construction zone. Sea turtle disturbance would be limited to within about a 130-ft radius of the sand recovery areas. Turtles are expected to move away from the disturbance, and as the impact areas are relatively small and the seafloor is primarily sandy, dredging is not anticipated to have any significant effect on turtle foraging. AECOS (2021) reported that turtles are expected to occupy a new foraging area outside of the construction zone (see Section 8.12.1 and Appendix C of the FPEIS). The groins and sand fill will bury a portion of the existing subtidal environment of primarily low relief sand, rubble, and limestone.

Best Management Practices (BMPs), as typically recommended by the National Marine Fisheries Service (NMFS), will be adhered to during construction of the proposed actions to avoid or minimize impacts to marine habitat protected species (see Section 8.11.1 and Appendix C of the FPEIS). A biological and water quality monitoring program will be implemented to enhance control over potential construction impacts (see Section 8.12.1 and Appendix C of the FPEIS). We anticipate that marine species will repopulate from surrounding habitat after construction is completed and sessile organisms will colonize new hard surfaces.

We also acknowledge that the proposed action in the Halekūlani beach sector has the potential to cause minor impacts to a limited population of coral colonies. AECOS (2021) found that coral assemblages in Waikīkī are limited by availability of stable hard bottom, silt cover, competition with algae, and freshwater influence among other factors. At the Halekūlani beach sector, overall coral cover at the proposed groin locations is very low (mean of 0.1 colony/m<sup>2</sup>) (see Section 8.10 of the FPEIS). In general, coral colonies here are small, with 64% being less than 10 cm in diameter. The lack of large coral heads is evidence that this area is not particularly favorable to coral growth (see Section 8.10 of the FPEIS).

We anticipate that the proposed structures will provide stable, hard bottom for coral settlement and possibly calmer waters for coral development; however, coral assemblage development may be compromised by competition for space, freshwater influence, sediment transport, and heavy utilization of the nearshore by the human population.

Based on the limited amount of coral in the Halekūlani beach sector, the proposed actions are not anticipated to significantly impact corals. Measures proposed to be exercised to protect corals during construction include:

- Locating and marking significant corals in the vicinity of the sand recovery areas;
- Identifying pipeline route corridors to minimize the potential for damage to coral and other benthic fauna; and
- Transplanting corals, as necessary and where practicable, to relocate them from the construction site, particularly along the pipeline route.

For additional information regarding the potential impacts of T-head groins to reefs and marine habitat, please see the following sections of the FPEIS:

- Sections 8.10, 8.11.1, 8.12.1, and 10.2
- Appendix C

#### Potential Impacts to Water Quality

Pursuant to Section 401 of the Clean Water Act, the proposed beach improvement and maintenance actions will require a Water Quality Certification (WQC) from the Hawai'i Department of Health, Clean Water Branch. The WQC will include an Applicable Monitoring and Assessment Plan (AMAP) and Data Quality Objectives (DQO), which will specify the means and methods for water quality monitoring before, during, and after construction. A hydraulic suction dredge will be used to minimize turbidity and associated water quality impacts during dredging operations. The sand will be pumped to a dewatering basin on shore to reduce the percentage of fine material prior to placement. A Best Management Practices Plan (BMPP) will be prepared during the final design and permitting phase. The BMPP will require the Contractor to implement appropriate and effective water quality protection measures (e.g., biosocks, turbidity curtains) during construction. The BMPP will include instructions for the Contractor to immediately contact the Hawai'i Department of Health, Clean Water Branch in the event that any negative impacts to water quality are observed during construction.

For information about water quality, turbidity, and water quality monitoring please see the following section of the FPEIS:

- Section 8.7

#### Potential Impacts to Waves, Currents, Sediment Transport, and Erosion

Sea Engineering, Inc. conducted detailed wave modeling to evaluate the potential for the proposed actions to impact waves, currents, and surf sites in Waikīkī. Dredging of offshore sand deposits involves removing sand from the seafloor, resulting in a lowering of the bottom elevation or changing the bathymetry. Wave modeling was used to assess the potential impacts of dredging on nearby surf sites (see Section 9.4.6 of the FPEIS).

A wave reflection analysis was also conducted to evaluate the potential for the proposed structures in the Halekūlani and Kūhiō beach sectors to reflect waves that could negatively impact surf sites, primarily in the Halekūlani beach sector based on DPEIS comments received (see Section 9.4.6 of the FPEIS). To evaluate potential impacts, wave modeling of the existing conditions and with the proposed structures was performed. Based on the results of the wave modeling, the dredge analysis, and the wave reflection analysis, no significant impacts to waves, currents, or surf sites in Waikīkī are anticipated.

For additional information regarding the potential impacts of T-head groins to waves, currents, sediment transport, and erosion, please see the following section of the FPEIS:

- Section 9.4.6

#### Potential Impacts to Viewplanes and the Aesthetics of the Shoreline.

Waikīkī is predominantly an engineered shoreline. Almost the entire length of Waikīkī is armored by seawalls. A total of 37 seawalls were constructed in Waikīkī, and by about 1920 seawalls lined most of Waikīkī Beach. In response to ongoing beach erosion, a total of 42 groins or groin-like structures have been constructed in Waikīkī. Only the larger groins have been effective in stabilizing the beaches. As a result, many of the existing viewplanes toward and along the shoreline in Waikīkī are dominated by structures.

T-head groin heads are designed to occupy only 40% of the viewplane, with the remaining 60% consisting of open gaps between the groin heads. The entire shoreline in these “beach cells” consists of sand, with a minimum design width of 20 to 30 feet. Over two thirds of the Halekūlani beach sector, where T-head groins are being proposed, currently consists of 70% exposed vertical seawalls with no dry beach fronting them. The proposed action in the Halekūlani beach sector would consist of 40% shore-parallel groins with a continuous 1,450-foot-long sandy beach (see Section 5.4.1 of the FPEIS). The existing seawalls in the Halekūlani beach sector are in a deteriorated condition and the walkways on top of the seawalls are often closed due to risks to public health, safety, and welfare. The groins would provide a natural buffer between the ocean and the seawalls. This would improve lateral access along the shoreline.

For additional information regarding the potential impacts of T-head groins to viewplanes and aesthetics of the shoreline, please see the following section of the FPEIS:

- Section 5.4.1

Monitoring the Long-term Impacts of T-head Groins

Engineered headland-bay beaches are designed to be stable, reducing the need for frequent or extensive maintenance. The Department of the Army required long-term monitoring (10 years) for the T-head groins that were constructed at Iroquois Point, O'ahu in 2013. Periodic monitoring indicates that overall beach sand loss has been negligible at 1% over the 8 years post-construction. The beach crest elevation in each of the groin cells has also steadily increased over time, likely as a result of wave runup pushing sand higher. We expect that the Department of the Army will require similar long-term monitoring for the proposed actions. Specific monitoring requirements will be confirmed during the final design and permitting phase.

We understand and acknowledge that you are opposed to the proposed program. Resource restoration along our coastlines is an important goal that benefits all. Moreover, the proposed project fulfills the State's responsibility to manage, conserve, and protect coastal resources, including sand beaches, which are public trust lands.

Thank you again for your input on this project. As the project develops, the latest information and ways to contact us will be posted on the Department of Land and Natural Resources website at: <https://dlnr.hawaii.gov/occl/waikiki/>.

Should you have any questions regarding this matter, please contact Michael Cain of our Office at (808) 587-0375.

Sincerely,

*S Michael Cain*

Michael Cain, Administrator  
Office of Conservation and Coastal Lands