

**SECTION 404(B)(L) EVALUATION**  
**USACE Maintenance Dredging of Agat Small Boat Harbor with Beneficial Use of Dredged Material in Navigable Waters at Nimitz Beach Park, Agat, Guam**

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**I. Project Description**

1. Location: Agat Small Boat Harbor (SBH), Nimitz Beach Park, Agat, Guam
2. General Description: USACE Honolulu District, Civil and Public Works Branch, is proposing to maintenance dredge Agat SBH to restore the authorized project depths and opportunistically beneficially use the dredged material to reclaim the beach at Nimitz Beach Park in Agat, Guam (See Figure 1)
3. Authority and Purpose: Under Section 107, USACE is funded and authorized to maintain the general navigation features of Agat SBH at full federal expense. Shoaling has reduced depths in the entrance channel to -9 ft MLLW (authorized -14 ft; up to 5 ft delta), in the turning basin to -9 ft MLLW (authorized -11 ft; 2 ft delta), and in the access channel to -5 ft MLLW (authorized -9 ft; 4 ft delta). Maintenance dredging is required to restore authorized depths and ensure safe navigation of the completed Corps project. With support from the Government of Guam and the U.S. Environmental Protection Agency, USACE proposes beneficial use of dredged material (BUDM) at Nimitz Beach Park to preserve native sediment and provide coastal storm risk management benefits at the eroding shoreline.
4. Description of Dredged or Fill Material
  - a. General Characteristics of Material (grain size or sand, silt, clay, etc., soil type): USACE has sampled and analyzed the dredged material throughout the harbor and determined the material to be 98% coarse, calcareous sand. 2021 Sediment Characterization Report was previously provided to GEPA for reference.
  - b. Quantity of Material (cubic yards): Based on the design dredge depths for Agat SBH, approximately 5,850 cubic yards of material require removal in order to restore authorized project depths (Figure 9). With a 1-foot industry-standard overdredge allowance, a total of 8,300 cubic yards (up to 9,000 cy when factoring in "fluff"/aeration of sediment) of dredged material will be removed. The beach reclamation area spans 792 feet along the shoreline. The beach fill will match the elevation of the existing beach crest and will extend 50 feet seaward at a uniform height, with no constructed slope. Approximately 1 acre of the 1.5 acre fill footprint will occur below the High Tide Line (Mean High Water Mark). Material will be placed at Nimitz Beach as a slurry (approx. 20% solids) into contained cells to percolate and stabilize.
  - c. Source of Material: Sand originates from Agat SBH.



Figure 1 Site Plan - Proposed Action and Action Area, Agat SBH and Nimitz Beach Park (ERDC 2025) Maintenance dredging footprint to right (cross hatch gray polygon), dredged material conveyance pipeline (green line), beach reclamation fill footprint to left (red outline polygon)

## 5. Description of the Proposed Discharge Site(s)

### a. Location (map):



Figure 1 Site Plan at Nimitz Beach Park (ERDC 2026)

b. Size (acres): 1.5 acres of which 1.0 acres occurs in navigable waters (below Mean High Water Mark).

c. Type of Site (confined, unconfined, open water): open water

d. Depth of Water: shallow, intertidal, up to  $\leq$  3ft

e. Current velocity, direction, and variability: Coastal processes in Agat Bay are influenced by localized circulation cells that move sediment along short, discrete pathways rather than a single dominant alongshore drift (USACE, 2020). North of Agat SBH, sediment generally moves from north to south, while at Nimitz Beach Park the transport direction is reversed, moving from south to north following harbor construction (USACE, 2020). These patterns are consistent with the accumulation of sand within the federal navigation channels documented in recent hydrographic surveys (USACE, 2024).

The RSA describes seasonal swell regimes, storm-driven wave conditions, and elevated water levels that affect sediment mobility and shoreline change along the western coast of Guam (USACE, 2020). These processes have contributed to long-term accretion along the northern portion of Nimitz Beach, where uplands have gradually built seaward, and erosion along the

southern portion, where wave action and sediment deficits have produced a steep shoreline escarpment and caused the vegetation line to recede landward. Similar storm-driven erosion patterns, including episodic overwash and exposure of the coastal terrace along adjacent segments of the Agat shoreline, are described in the Agat Section 14 Draft IFR-EA (USACE, 2024).

Nearshore wave action and wave runup along the shoreline fronting Nimitz Beach Park regularly suspend sand and fine material, producing naturally elevated turbidity in the shallow nearshore zone (USACE, 2020). Tidal fluctuations and water-level anomalies further influence nearshore hydrodynamics, affecting the depth and extent of wave interaction with the shoreline and adjacent reef flats (USACE, 2020).

Together, these processes define the prevailing sediment movement, shoreline evolution, and turbidity conditions within the action area.

- f. Type(s) of Habitat: Intertidal and shallow subtidal sandy bottom (per dive survey 2025)
  - g. Timing and Duration of Discharge: Permanent. USACE anticipates that sediment migration would occur slowly, on the order of decades, and that transported material would likely settle within the harbor, in accordance with prevailing longshore sediment transport hydrodynamics.
  - h. Rate of Discharge: The sand slurry is approximately 40% solids at the cutterhead, diluted by the pumping system to approximately 15-20% at the discharge end. The resulting fill rate is approximately 125 cy sand/hr or 2 cy/min. The dredge and fill work is scheduled to take up to 30 days to complete, with contingency built in, however, USACE anticipates earlier completion.
  - i. Number of discharge actions per unit of time: The proposed action involves a single discharge completed over the construction duration of up to 30 days.
  - j. Ambient concentration of constituents of interest: The beach fill area is sited in intertidal and shallow subtidal waters, therefore the existing ambient conditions of the wave-washed shoreline that suspends sand into the water column, are naturally turbid.
6. Description of Disposal Method (hydraulic, drag line, etc.): A comprehensive description of the proposed action, including maintenance dredging and BUDM follows:

Maintenance Dredging. Based on the design dredge depths for Agat SBH, approximately 5,850 cubic yards of material require removal in order to restore authorized project depths (Figure 3). With a 1-foot industry-standard overdredge

allowance, a total of 8,300 cubic yards (up to 9,000 cy when factoring in “fluff”/aeration of sediment) of dredged material will be removed.

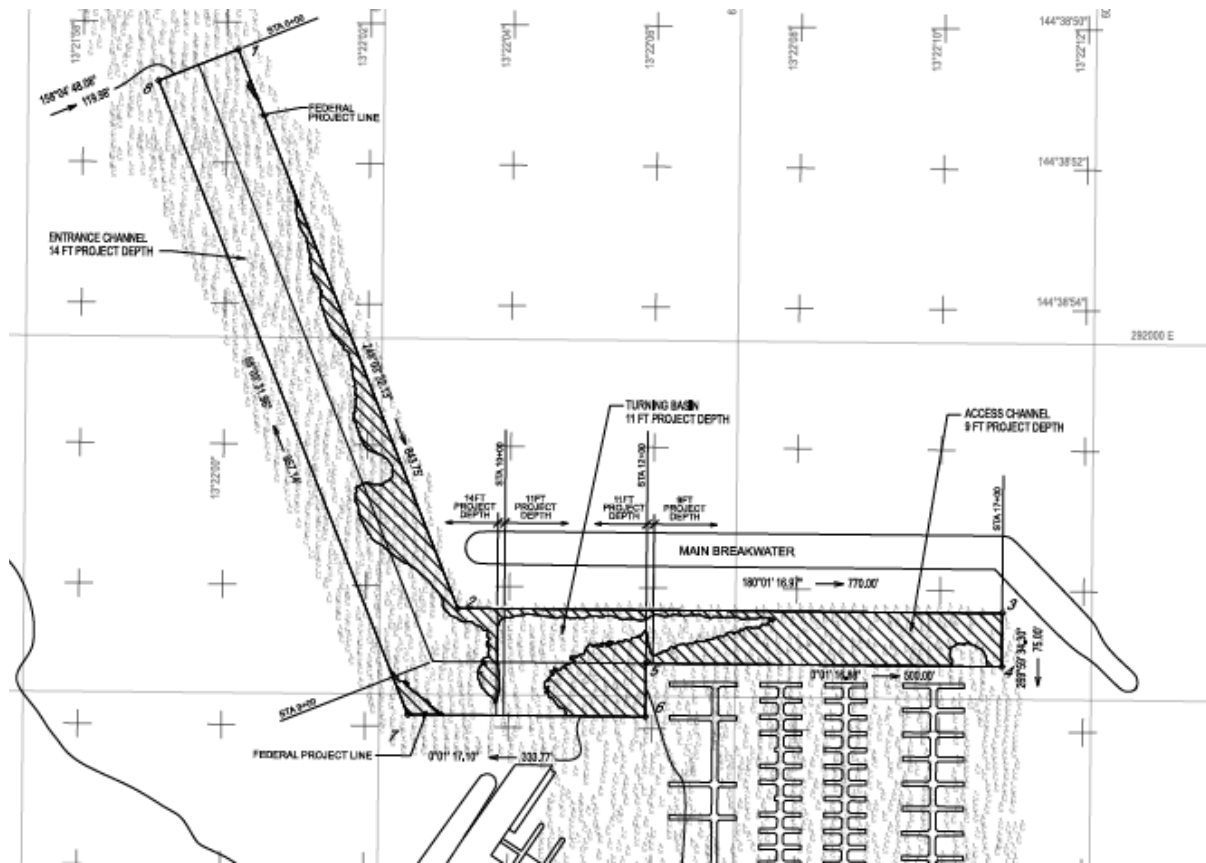


Figure 3 Agat SBH Dredge Footprint (black hatched polygons) (USACE 2024)

USACE has retained the support of the U.S. Army Engineer Research and Development Center (ERDC) to implement novel dredging technology in this region. In coordination with ERDC, USACE proposes to utilize a 20-ton CAT320 long reach excavator staged atop a barge (Figure 4). The excavator will be retrofitted with an EDDY Dredge Head 32-inch diameter cutter head operating at 60-90 rotations per minute that is lowered into the sand (Figure 5). The cutter head agitates the substrate to bring it into suspension, removing 6-inch-deep layers at a time.



Figure 4 Example Excavator Staged atop Barge



Figure 5 Dredge Head to be Attached to Long Reach Excavator

Affixed immediately adjacent to the cutter head is an 8-inch diameter suction intake pipe that draws up the agitated slurry of seawater and sand. The sand slurry is approximately 40% solids at the cutterhead, diluted by the pumping system to approximately 15-20% at the discharge end. The resulting fill rate is approximately 125 cy sand/hr or 2 cy/min. The intake pipe is retrofitted with a 3-inch grate to prevent entrainment of protected marine species.

The slurry is transported via a 6-inch diameter floating pipeline from the dredge area to the placement area at a velocity of 15 feet per second. The slurry is pumped with a series of booster pumps atop the barge and on land at the harbor. ERDC is in the

process of designing energy dissipators for the end of the pipe system to minimize erosion and maximize accretion within the containment area.

The dredge barge will be supported by a push boat for maneuvering within the project area. The dredge plant will have two spuds placed exclusively within the federal channel to anchor the barge during dredging. The dredging sequence prioritizes the turning basin, followed by the access channel. The entrance channel is more exposed to wave energy than the rest of the harbor. Therefore, it will be dredged only as weather and sea conditions allow, and which may occur at any point during the operation.

Dredge and fill operations will occur between the hours of 0700 and 1700 daily over a typical 5-day work week. No nighttime work is proposed. Operations will be actively managed in consideration of daily tides, weather and wave predictions and while minimizing impacts to vessel calling and navigation in and around the harbor.

Beneficial Use of Dredged Material at Nimitz Beach Park. The intake pipeline will require up to two booster pumps located on the barge and in harbor uplands to effectively transport the dredged material slurry the distance from the dredge area to the fill area (Figure 6). The pipeline will be floated along its length using high-density polyethylene collar buoys from the harbor to the north face of the Nimitz Beach shoreline.

Divers will be available on site to assist in determining the most practicable alignment of the floating pipeline that avoids direct impact to corals or seagrasses and minimizes inadvertent impact on other sensitive resources. Additional floats will be available to double up, if necessary, to ensure adequate buoyancy along the pipeline. The shortest pipeline alignment would provide the greatest efficiency for conveying dredged material from the harbor to Nimitz Beach. USACE is also evaluating longer shoreline proximate alignments that optimizes avoidance and minimization of adverse impacts on sensitive benthic resources. If wave conditions or weather compromise the structural integrity of the floating pipeline, ERDC will implement a contingency plan to pause dredging and secure the pipeline. The pipeline located within the harbor will be secured to the jetty, and the segment crossing from the harbor to Nimitz Beach will be retracted and brought back onto land.



Figure 6 Dredged Material Pipeline Conveyance Alternate alignments are presented. Pipeline from entrance channel (dark orange) and Access Channel (light orange) in harbor will feed to submerged pipeline (red) and to harbor booster pump (light orange square) and convey material to floating pipeline (yellow) that will either cross the corridor and land on Nimitz Beach or follow the beach crest of the shoreline. Pipeline on shore will follow beach contour to beach reclamation fill area (green). Access Ingress/Egress path at Nimitz Beach Park in green with preferred alignment to south and contingency alignment to north. Beach reclamation fill area seaward limit (red) and approximate stabilized toe at end of project (light orange).

The pipeline will come ashore on the north face of Nimitz Beach and run along the upper shoreline, following the beach park perimeter to the southern end of the reclamation area. Beach reclamation activities will begin at the south end where the impacts of erosion on the shoreline are the greatest and progress northward. It is possible that there will not be enough volume of dredged material to completely fill the eroded Nimitz Beach shoreline. Reclaiming the beach at the south end will create a sediment supply that will contribute to the gradual infilling of the northern reaches of the eroded Nimitz Beach shoreline in accordance with historic longshore sediment transport

The beach reclamation area spans 792 feet along the shoreline. The beach fill will match the elevation of the existing beach crest and will extend 50 feet seaward at a uniform height, with no constructed slope. Approximately 1 acre of the 1.5 acre fill footprint will occur below the High Tide Line (Mean High Water Mark). See Cross-Section Figure 7.

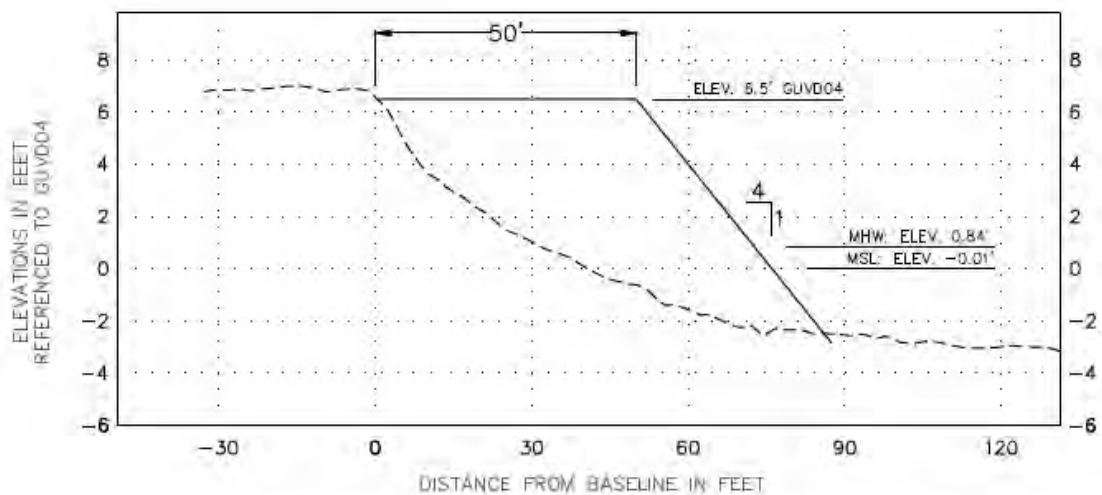
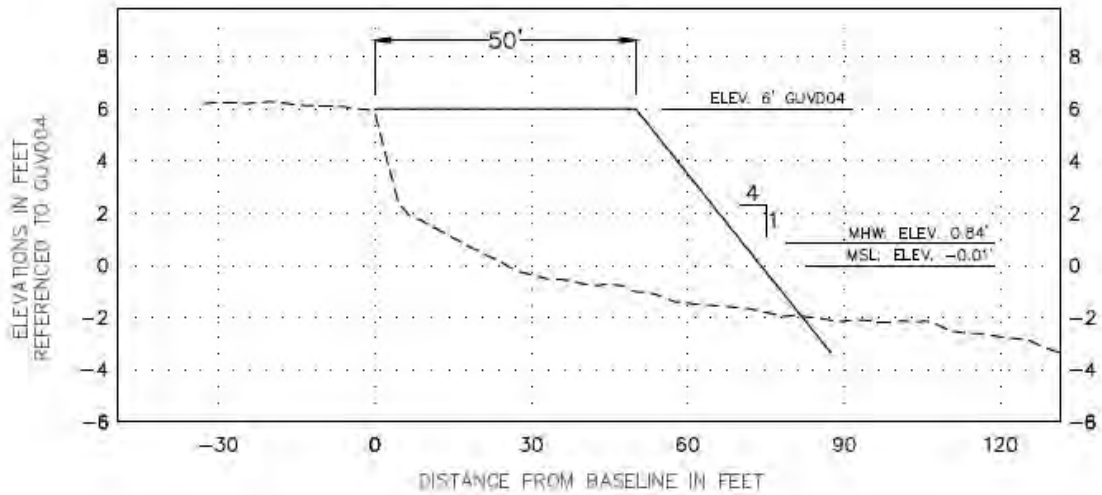


Figure 7 Cross Section Concept Drawing of Beach Reclamation Fill Area at Nimitz Beach Shoreline

The seaward limit of the beach reclamation fill area, would be cordoned off using burlap silt fencing anchored into the substrate. Fill activities will occur within manageable “cells” (approximately 4' x 4' x 4', or multiples thereof) bounded by the escarpment on the landside and filter fabric lined HESCO barriers Figure 8. This method is intended to prevent direct discharge into the ocean, facilitate filtration of

the slurry through the filter fabric and retain sediments, reduce turbidity and stabilize the reclaimed beach in manageable cells as the fill activity progresses along the shoreline. Filling will continue until the cell is “full” of slurry. Sequentially the next cell will be filled moving northward and seaward. As the seawater continues to percolate, a cell may be refilled multiple times until it reaches the grade/height of the bordering shoreline. As the filling progresses northward, the distal 20-ft segment of pipeline will be disconnected, as needed. When a cell is deemed full and complete, the cell perimeter will be removed.



Figure 8 Example HESCO Barrier

Once maintenance dredging is complete, dredging equipment will be demobilized and activities to shape and stabilize the beach reclamation fill area will continue. A high-track D3-D6 dozer with 6-way blade will be used atop the reclaimed beach to push sand and grade the shoreline to meet the design specifications (approximately 792-feet long by 50-feet wide). The final beach reclamation activity will be the removal of the perimeter silt fence. If sea conditions allow, and if project observations indicate that additional turbidity control measures are warranted, a secondary silt fence may be installed 20 feet seaward of the original. This additional barrier would further limit turbidity and provide temporary stabilization of the beach reclamation fill area once the initial fence is removed. When the silt fence is removed, the seaward face of the reclamation area will naturally adjust to a stable profile, with the toe extending approximately 20 feet beyond the former fence line. All temporary barriers will be removed at the completion of the project.

Note, the reclaimed beach fill footprint is approximate, contingent upon the volume of dredged material available for beneficial use. It is likely there is not sufficient volume to fill the proposed beach reclamation footprint. USACE is prioritizing addressing the down current south end which has experienced the highest intensity erosion.

## II. Factual Determinations

### 1. Physical Substrate Determinations (*Consider items in sections [230.11\(a\)](#) and [230.20, Substrate](#)*).

Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, on the characteristics of the substrate at the proposed disposal site. Considering the effects on:

- a. Substrate Elevation, Contours and Slope:
- b. Sediment Type.
- c. Dredged/Fill Material Movement
- d. Physical Effects on Benthos (burial, changes in sediment type, etc.)
- e. Other Effects
- f. Actions Taken to Minimize Impacts ([Subpart H](#))

Response: The dredged material consisting of 98% coarse calcareous sand will be beneficially used to reclaim the eroded shoreline at Nimitz Beach. Beach reclamation at Nimitz Beach will result in the permanent conversion of approximately 1 acre of intertidal and shallow subtidal unconsolidated substrate and water column to uplands (approximately 1 acre of the 1.5 acre fill footprint occurs below the High Tide Line/Mean High Water Mark). Sand at Nimitz Beach is substantively the same as in the harbor, but perhaps with slightly higher fines and organic content as a result of the eroding shoreline.

The existing substrate is sandy bottom with no hardbottom, coral, seagrass, or other structured habitats (USACE 2021 benthic survey). The naturally turbid, intertidal and shallow water column is high energy and dynamically influenced by the tide and wave conditions along the shore. The existing intertidal and shallow subtidal nearshore does not provide marine or terrestrial critical habitat as defined in the proposed listings at 88 FR 46572 and 88 FR 46375, respectively. Additionally, the beach fill area as it currently exists provides low value essential fish habitat for the Mariana archipelago bottomfish fishery. USACE concluded that the habitat conversion would not adversely modify proposed critical habitat for green sea turtles and the adverse effect to EFH would not be substantial.

The intersection of the wash of the waves and the shoreline of the reclaimed beach would be extended seaward by approximately 50 feet over the length of the fill area, 792 feet. The constructed beach buffer would prevent erosion of terrigenous sediments into the ocean currently occurring at Nimitz Beach shoreline. The reclaimed beach would be constructed to the same beach crest of the adjacent shoreline. With removal of the silt fence, the toe of the beach would naturally slope and stabilize as influenced by the prevailing wind, wave and currents that influence longshore sediment transport in a south to north direction. USACE expects that the equilibrium would reflect a stable beach profile that once existed prior to the current eroded state.

## 2. Water Circulation, Fluctuation, and Salinity Determinations

Determine the nature and degree of effect that the proposed discharge will have individually and cumulatively on water, current patterns, circulation including downstream flows, and normal water fluctuation.

- a. Water (Refer to sections [230.11\(b\)](#), [230.22, Water](#), and [230.25, Salinity Gradients](#); test specified in [Subpart G](#) may be required). Consider effects on:
- i. Salinity
  - ii. Water Chemistry (pH, etc.)
  - iii. Clarity
  - iv. Color
  - v. Odor
  - vi. Taste
  - vii. Dissolved Gas Levels
  - viii. Nutrients
  - ix. Eutrophication
  - x. Temperature
  - xi. Other Characteristics as Appropriate

Response: The proposed discharge contains dredged material consisting entirely of 98% coarse, calcareous sand. Coarse grain sediments do not bind to contaminants the way fine grain sediments do and are considered naturally inert. Additionally, based on an analysis of longshore sediment transport in the region, USACE understands that the origin of the shoaled sediments in Agat SBH is likely from Nimitz Beach. Finally, the substrate at the Nimitz Beach shoreline is beach sand, consistent with the dredged material.

Accordingly, USACE anticipates no change to salinity, water chemistry, color, odor, taste, dissolved oxygen and other gas levels, nutrients, eutrophication, or temperature. USACE expects minimal residual turbidity as the shoreline stabilizes and wave runup acts upon the reclaimed beach, however, USACE anticipates the turbidity would be similar and not greater than the current ambient condition.

- b. Current Patterns and Circulation (Consider items in sections [230.11\(b\)](#), and [230.23](#))
- i. Current Patterns and Flow (including diversions and obstructions)
  - ii. Water Circulation
  - iii. Velocity
  - iv. Stratification
  - v. Alteration of Bottom Contours
  - vi. Other Hydrologic Regime Changes

Response: The proposed discharge would reconstruct an eroded beach. The intersection of the reclaimed shoreline with the wash of the waves would be extended seaward from its current location by approximately 50 feet over the length of the fill area, 792 feet. The reclaimed beach would be constructed of unconsolidated sediments and would not introduce any hardened portion or other artificial substrate that may affect longshore sediment transport, or other hydrodynamics such as current, circulation, velocity of wave refraction or transfer of energy, or disrupt ambient stratification. The BUDM does discharge sand onto the eroded shoreline, intertidal and shallow subtidal waters fronting Nimitz Beach, altering the bottom contours and resulting in the permanent conversion of 1 acre of WOTUS to uplands. However, this conversion would provide coastal storm risk benefit to the beach park and park infrastructure.

- c. Normal Water Level Fluctuations (tides, river stage, etc.) (*Consider items in sections [230.11\(b\)](#) and [230.24](#)*)

Response: The proposed discharge would have no effect on the normal water level fluctuations, e.g., tide. However, as described in the preceding section, the intersection of the wash of the waves, and in this context, the intersection with the fluctuating tide with the current shoreline would be extended seaward by approximately 50 feet for the 792 foot length of the reclaimed beach.

- d. Salinity Gradients (*Consider items in sections [230.11\(b\)](#) and [230.25](#)*)

Response: The proposed discharge of sand onto the Kailua Beach shoreline and into navigable waters of the U.S. would have no effect on the salinity gradient of the receiving water.

- e. Actions That Will Be Taken to Minimize Impacts (*Refer to [Subpart H](#)*)

Response: See attached BMPs (Enclosure 1).

### 3. Suspended Particulate/Turbidity Determinations

Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, in terms of potential changes in the kinds and concentrations of suspended particulate/turbidity in the vicinity of the disposal site.

- a. Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site (*Consider items in sections [230.11\(c\)](#) and [230.21](#). List below is not all inclusive.*)

- i. Grain Size of the Material Proposed for Discharge. The dredged material consists of 98% coarse, calcareous sand.
  - ii. Shape and Size of the Plume of Suspended Particulates. Sand settles quickly once suspended and does not easily resuspend once settled. Any turbidity plume generated would settle near the origin, i.e., minimal, localized, and consistent with ambient conditions in the intertidal and shallow subtidal habitat typical of the wave washed shoreline that agitates and suspends sediments into the water column.
  - iii. Duration of the Discharge and Resulting Plume. The entirety of the proposed action is scheduled to take no more than 30 days from mobilization to demobilization. Minimal turbidity may be generated from the beach fill activities, however, filling will occur within filter-lined cells and bounded by silt fencing. This source of turbidity is temporary during construction only. Turbidity is expected at the seaward edge of the reclaimed beach as ambient hydrodynamics act upon the shoreline. Equilibrium will be attained, and any turbidity would mimic current ambient conditions of an intertidal environment.
  - iv. Potential Changes That May Cause Violations of Applicable Water Quality Standards. Through implementation of the design and BMPs that isolate and contain the discharge and the composition of the fill material, sand, USACE does not anticipate any violations of Guam Water Quality Standards.
- b. Effects (degree and duration) on Chemical and Physical Properties of the Water Column (*Consider environmental values in section [230.21](#), as appropriate*)
- i. Light Penetration
  - ii. Dissolved Oxygen
  - iii. Toxic Metals and Organics
  - iv. Pathogens and Viruses
  - v. Aesthetics
  - vi. Others as Appropriate

Response: Any turbidity plume generated would settle near the origin, i.e., minimal, localized, and consistent with ambient conditions in the intertidal and shallow subtidal habitat typical of the wave washed shoreline that agitates and suspends sediments into the water column. Turbidity, i.e., sediments in suspension, may reduce light irradiation, but only minimally as sand settles quickly relative to fine sediments. The dredged material lacks fines and organic matter that would contribute to algal blooms that may disrupt ambient dissolved oxygen content; therefore, the proposed discharge would have no effect on dissolved oxygen. The sand has minimal fines (<2%) that would normally bind to toxic metals and pathogens; therefore, the proposed discharge would

not introduce any of these pollutants into navigable waters. The proposed discharge would reclaim the beach along the eroded shoreline and is composed of coarse grain calcareous sand, consistent with the existing beach. The proposed discharge would be consistent with beach aesthetics and result in an overall improvement to the existing eroded shoreline that currently exposes terrestrial subgrade.

c. Effects on Biota (*Consider environmental values in sections [230.21](#), as appropriate*)

- vii. Primary Production, Photosynthesis
- viii. Suspension/Filter Feeders
- ix. Sight Feeders

Response: At Nimitz Beach, slurry discharge occurs entirely within engineered containment cells bounded by filter-lined HESCO barriers and silt fencing, which retain sediment and allow water to percolate through filter fabric. Any turbidity that escapes the containment system is expected to be minor, localized, and temporary.

Endangered sea turtles and threatened scalloped hammerhead sharks and other mobile marine organisms are capable of avoiding localized turbidity. Listed corals reproduce in the water column and that both filter feed and symbiotically depend on photosynthetic zooxanthellae for food. As sessile, benthic organisms, listed corals vulnerable to elevated turbidity which can reduce solar irradiance, disrupt reproduction and feeding and if subjected to sedimentation, will divert energy away from vital processes to producing mucus to slough off settled sediments.

At Nimitz Beach, turbidity generating activities are isolated and contained within the engineered fill cells and minimizes potential to enter the nearshore environment. Any turbidity generated and consequent sedimentation is expected to be minor, localized, and temporary, and is not anticipated to reach levels that would cause physiological stress or behavioral disruption in ESA listed species and other marine organisms.

d. Actions taken to Minimize Impacts ([Subpart H](#)). See BMPs annotated for turbidity and sedimentation (Enclosure 1).

4. Contaminant Determinations (*Consider requirements in section [230.11\(d\)](#)*)

Determine the degree to which the material proposed for discharge will introduce, relocate, or increase contaminants. This determination shall consider the material to be discharged, the aquatic environment at the proposed disposal site, and the availability of contaminants.

Response: Based on sampling and analysis of the dredged material, USACE understands that the sand is free of fines that normally bind to contaminants and organic matter that may affect the physical, biological or chemical properties of receiving navigable waters. Accordingly, USACE has determined that the proposed discharge of dredged material that is comprised of 98% coarse grain, calcareous sand does not have the potential to introduce relocate or increase contaminants at the proposed discharge site located in navigable waters of the U.S.

5. Aquatic Ecosystem and Organism Determinations (*Use evaluation and testing Procedures in [Subpart G](#), as appropriate*)

Determine the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem and organisms. Consideration shall be given to the effect at the proposed disposal site of potential changes in substrate characteristics and elevation, water or substrate chemistry, nutrients; currents, circulation, fluctuation, and salinity, on the recolonization and existence of indigenous aquatic organisms or communities.

- d. Effects on the aquatic food web (*Consider environmental values in sections [230.31](#), as appropriate*). Mobile species would be unaffected by the proposed discharge as they can temporarily avoid the disturbance. Benthic infaunal communities in the discharge area would be unavoidably lost. However, benthic infaunal communities adjacent to the fill area will become the “new” shoreline’s intertidal and shallow subtidal environment. The “new” benthic infaunal community would provide for the local food web and would result in only temporary impacts to the local food web, as mobile species return to the nearshore environment.
- e. *Effects on Special Aquatic Sites (*Discuss only those found in project area or disposal site*)*
  - i. Sanctuaries and Refuges (*Refer to section [230.40](#)*)
  - ii. Wetlands (*Refer to section [230.41](#)*)
  - iii. Mud Flats (*Refer to section [230.42](#)*)
  - iv. Vegetated Shallows (*Refer to section [230.43](#)*)
  - v. Coral Reefs (*Refer to Section [230.44](#)*)
  - vi. Riffle and Pool Complexes (*Refer to section [230.45](#)*)
  - vii. Threatened and Endangered Species (*Refer to section [230.30](#)*)

Response: The proposed discharge site is absent of any special aquatic sites. Coral reefs occur further offshore and will be unaffected by the proposed action. The proposed discharge of dredged material into navigable waters for the purpose of BUDM will have no effect on special aquatic sites. USACE has completed a biological assessment documenting evaluation of the proposed discharge on threatened and endangered species and critical habitat and determined that the proposed action may

affect but is not likely to adversely affect listed species and would not destroy or adversely modify critical habitat.

- f. Effects on Other Wildlife (Refer to section [230.32](#)). USACE has completed consultation with U.S. Fish and Wildlife Service under the Fish and Wildlife Coordination Act to evaluate and consider effects of the proposed action on fish and wildlife resources. All USFWS recommendations were considered and adopted as either design modifications or BMPs to avoid and minimize adverse effects on sensitive resources.
- g. Actions to Minimize Impacts (Refer to [Subpart H](#)). See BMPs (Enclosure 1)

## 6. Proposed Disposal Site Determinations

- d. Mixing Zone Determination (Consider factors in section 230.11(f)). Minimal mixing will occur during fill operations as fill activities will occur within filter-lined containment cells constructed of HESCO barriers. Upon removal of the cells, the seaward edge would be susceptible to mixing with navigable waters. Localized turbidity is anticipated, comprised of sand in suspension, that is expected to settle rapidly and may be resuspended due to the wash of the waves at the intersection of the water's edge with the reclaimed shoreline.
- e. Potential Effects on Human Use Characteristics
  - i. Municipal and Private Water Supply (Refer to section [230.50](#)). No effect.
  - ii. Recreational and Commercial Fisheries (Refer to section [230.51](#)). The proposed discharge has been evaluated pursuant to Section 305(b)(2) of the Magnuson Stevens Fishery Management and Conservation Act and determined that the proposed action may adversely affect but would not cause substantial adverse effects to essential fish habitat designated for Pelagic and Mariana Archipelago Bottomfish fisheries. (See Enclosure 2, Combined Biological Assessment and EFH Assessment).
  - iii. Water Related Recreation (Refer to section [230.52](#)). The proposed discharge would beneficially use dredged material to reclaim the beach at the eroded shoreline of Nimitz Beach Park. The reclaimed beach would provide shoreline access for public recreation and subsistence and recreational fishing. The proposed discharges would not inhibit or otherwise affect other water related recreation such as swimming, snorkeling or diving.
  - iv. Aesthetics (Refer to section [230.53](#)). The proposed BUDM at Nimitz Beach Park shoreline would reclaim the eroded beach and improve overall aesthetics of the coastal beach environment. The proposed

beach profile constructed of coarse grain calcareous sands would be consistent with Guam beaches.

- v. Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves (Refer to section 230.54). The proposed beach reclamation would improve the beach component of Nimitz Beach Park. The project area is absent of, and the proposed action would have no effect on National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves.

7. Determination of Cumulative Effects on the Aquatic Ecosystem (Consider requirements in section 230.11(g)). The action area includes the federal navigation features of Agat SBH, the nearshore marine corridor between the harbor and Nimitz Beach, and the upland and intertidal portions of Nimitz Beach Park. This area is characterized by recreational shoreline use, small boat harbor operations, and periodic coastal maintenance conducted by local agencies.

Future non Federal actions reasonably certain to occur within the action area are limited. The Government of Guam has voluntarily committed to two actions associated with the project area: (1) planting native vegetation along the reclaimed beach crest, and (2) conducting short and mid-term monitoring of shoreline migration and dredged material movement following project completion. These actions are not funded, implemented, or required by USACE, and are not interrelated or interdependent with the proposed action. As non-Federal actions are reasonably certain to occur within the action area, they must be considered as cumulative effects. Both actions are beneficial or neutral and do not introduce new stressors that would elevate the risk of effects to navigable waters and the associated aquatic ecosystem.

Future non Federal actions reasonably certain to occur in the action area are limited to routine recreational use of Nimitz Beach (e.g., swimming, shoreline access, fishing), small scale park maintenance by the Government of Guam, and recreational boating within Agat SBH. Regional socioeconomic trends—including population decline in Hågat (Agat), tourism growth centered in northern Guam, and delayed military relocation—do not indicate any foreseeable non Federal development or construction within the action area. No other future State, territorial, or private actions are identified in available planning documents or socioeconomic analyses. (USACE, 2024) These activities are ongoing components of the environmental baseline and are not expected to increase in intensity or geographic extent, and would not interact cumulatively with the short term, localized effects of the proposed action.

### **III. Findings of Compliance or Non-Compliance With the Restrictions on Discharge**

1. Include a brief explanation of any adaptation of these Guidelines to the activity under consideration. None.
2. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem (*Briefly discuss alternatives considered and that are available and practical and explain (provide a more thorough analysis) why the one selected would result in the least amount of significant impacts. The proposed alternative must be the “least environmentally damaging practicable alternative” (LEDPA) to be consistent with the 404(b)(1) guidelines. Reference should be made to other appropriate sections on alternatives in EIS or Main Reports when the 404 Evaluation is contained in these documents.*)
  - a. Alternatives that must be considered: (1) activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters; (2) discharges at other locations in waters of the United States or ocean waters.

Response: USACE considered dredged material disposal alternatives prior to identifying the proposed action. Alternatives were evaluated based on site conditions, the environmental baseline, the project's purpose and need, operational feasibility and safety, and potential effects on fish and wildlife resources, ESA-listed species and critical habitat, and EFH.

Ocean Disposal (Retained as Contingency Only). This alternative would involve transporting dredged material by tug and scow to the USEPA-designated Guam Deep Ocean Disposal Site (GDODS), located approximately 20 miles offshore (Figure 16). Due to the distance, USACE anticipates no more than one load per scow per day. Sediment characterization conducted under the Ocean Testing Manual indicates the material is 98% coarse sand and suitable for ocean disposal under federal criteria. Typical scow capacity ranges from 2,000 to 3,000 cubic yards, though scows are often loaded below full capacity to account for ocean conditions during transit.



USEPA Designated GDODS Ocean Disposal Site

Pending site-use approval from USEPA, USACE anticipates ocean disposal would be technically feasible and represent the lowest-cost disposal option. However, this method would permanently remove beach-quality sand from the littoral system, eliminating the opportunity to support shoreline restoration at Nimitz Beach Park. Ocean disposal also requires offshore transit, additional vessel operations, and a longer overall construction duration compared to hydraulic dredging with BUDM.

While ocean disposal meets the purpose and need, hydraulic dredging with beneficial use placement provides greater overall environmental benefit. Accordingly, ocean disposal is retained only as a contingency alternative.

Upland Disposal (Eliminated). This alternative would require mechanical dredging and trucking the wet material to Nimitz Beach Park for dewatering. Additional sediment testing would be required prior to landfill acceptance, followed by hauling the dewatered dredged material to an existing landfill permitted to accept dredged material. USACE has identified Northern Hardfill in Yigo, approximately 25 miles north of Agat, as a potential disposal facility (Figure 17). The disposal process would require an estimated 800 truckloads on public roadways and approximately 6 months to complete.



Alternative Upland Disposal Location

Upland disposal would remove beach-quality sand from the littoral system and forego the opportunity to restore the eroded shoreline at Nimitz Beach Park. This alternative requires double-handling (Agat SBH to Nimitz Beach Park; Nimitz Beach Park to landfill) which would significantly draw out the construction duration, substantially increase traffic, emissions, and construction-related disturbance. In coordination with the Government of Guam and USEPA, USACE determined that upland disposal is not environmentally preferable and does not support the project's purpose and need.

This alternative was eliminated from further consideration because it is impracticable relative to hydraulic dredging with beneficial use placement and would result in greater environmental and operational impacts.

BUDM at Agat Mayor's Complex (Eliminated). The Agat Mayor identified both Nimitz Beach Park and the shoreline fronting the Agat Mayor's Complex (AMC) as potential receptor sites for beneficial use of the clean, beach-quality dredged material. Similar to Section 2.2.1, mechanically dredged sediments would be dewatered at Nimitz Beach Park and then trucked approximately 1.8 miles north along Highway 2 to the shoreline fronting AMC. The material would be placed along the beach in a similar manner to Nimitz Beach Park as necessary to achieve a stable profile (Figure 18).



Dredged Material Placement at Agat Mayor's Complex (Plan View)

Although this alternative continues to preserve the natural resource, AMC is not located within the same littoral cell as the harbor. Placement at AMC would also require double-handling (Agat SBH to Nimitz Beach Park; Nimitz Beach Park to AMC), compared to direct placement at Nimitz Beach Park.

Beneficial use at AMC does not meet the project's purpose and need as effectively as placement at Nimitz Beach Park and is less efficient operationally. Accordingly, this alternative was eliminated from further consideration.

While ocean disposal and upland disposal would not result in discharges of dredged material into waters of the U.S. the overall environmental impact would be greater than the proposed BUDM at Nimitz Beach Park and ultimately eliminated as they were impracticable in comparison. BUDM at Agat Mayor's Complex would have a greater in-water footprint and would require double-handling of material and accordingly was eliminated from further consideration.

- b. Special Aquatic Sites – If the proposed placement site is a special aquatic site (as defined in Subpart E) additional analysis must be undertaken to justify why access, proximity, or siting within a special aquatic site is necessary to achieve the activity's basic purpose *or* it must be demonstrated that there are no practical alternatives that do not involve placement in a special aquatic site. The proposed discharge site is absent of any special aquatic sites. Coral reefs occur further offshore and will be unaffected by the proposed action. The proposed discharge of dredged

material into navigable waters for the purpose of BUDM will have no effect on special aquatic sites.

3. Evaluation of Extent of Degradation of the Waters of the United States to Ensure there will not be Significant Degradation, including consideration of the following:
  - a. Significant Adverse Effects on Human Health and Welfare
  - b. Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems
  - c. Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity and Stability
  - d. Significant Adverse Effects on Recreational, Aesthetic, and Economic Values

Response: The proposed action would not result in significant adverse effects on human health and welfare, the aquatic ecosystem or on recreational, aesthetic and economic values. The proposed impacts would be minimal during and shortly after construction as a result of elevated, localized turbidity, but the overall impact would be beneficial to the ecosystem and public welfare via coastal storm risk reduction.

4. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem. USACE has taken all appropriate and practicable steps to modify the design and incorporate BMPs that would minimize potential adverse impacts of the discharge on the aquatic ecosystem.

5. On the Basis of the Guidelines, the Proposed Disposal Site(s) for the Discharge of Dredged or Fill Material must be (*Select one...a, b, or c*) (Refer to Section 230.12)

~~a. Specified as complying with the requirements of these guidelines; or,~~

**b. Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical discharge conditions to minimize pollution or adverse effects to the affected aquatic ecosystem(s); or,**

~~c. Specified as failing to comply with the requirements of these guidelines where:~~

~~i. There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences; or~~

- ~~ii. The proposed discharge will result in significant degradation of the aquatic ecosystem under § 230.10(b) or (c); or~~
- ~~iii. The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or~~
- ~~iv. There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.~~

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