UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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Refer to NMFS No:
WCRO-2019-04086

November 22, 2024

Todd Tillinger
Chief Regulatory Branch
U.S. Army Corps of Engineers, Seattle District
4735 East Marginal Way South, Bldg. 1202
Seattle, Washington 98134-2388

Re: Revised ITS for the Endangered Species Act Section 7(a)(2) Biological Opinion for the Salish Sea Nearshore Programmatic Consultation (SSNP)

Dear Mr. Tillinger:

The Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Salish Sea Nearshore Programmatic Consultation (SNNP), signed on June 29, 2022, and includes several categories of work within the proposed action, among which are maintenance dredging and pile repair and replacement.

The proposed action for the SNNP was developed in cooperation with the Corps, describing categories of work, design criteria, best management practices, and the need for offsetting elements for several work categories, to ensure that long term habitat values are not eroded incrementally, so that recovery objectives for ESA protected resources in Puget Sound may remain achievable. In the opinion, NMFS evaluated the effects, both short term and long term, of the several activities, plus the proposed actions offsetting activities elements, to determine no jeopardy and no adverse modification of critical habitat for Puget Sound (PS) Chinook salmon (*Oncorhynchus tshawytscha*), Hood Canal summer-run (HCSR) chum (*O. keta*), PS steelhead (*O. mykiss*), Puget Sound/Georgia Basin (PSGB) yelloweye rockfish (*Sebastes ruberrimus*), PSGB bocaccio (*S. paucispinis*), or Southern Resident killer whales (SRKW) (*Orcinus orca*). Based on the effects analysis in the biological opinion, in the incidental take statement, NMFS described the amount or extent of incidental take reasonably certain to occur for each of the activity types. Because it was not practicable or measurable to describe the anticipated incidental take as a number of individuals, NMFS used surrogates to express the amount or extent of anticipated take.

The proposed action did not include projected work levels with numeric values, which would typically be used as incidental take surrogates, but rather focused on describing the covered activity categories and the design criteria that would limit their effects. Therefore, as described in our biological opinion, NMFS developed some annual numeric estimates about projected activity levels based on past and pending project numbers. Of particular relevance, we estimated pile replacement at 2,800 piles per annum for the first two years, 1,400 piles per annum after that, and maintenance dredging at a volume of 68,000 cubic yards per annum for the first two years, 34,000 cubic yards per annum after that.

Since the biological opinion was issued, implementation of the SSNP proposed action has shown that NMFS' numeric estimates did not do a good job of reflecting the ebbs and flows in activity from year to year, and were influenced by some unrepresentative past and present annual project numbers. Since the estimates were intended to predict actual activity levels, we believe it is appropriate to revise the estimates to reflect the better data we now have. Specifically, current data supports estimates of 2,800 piles per annum and 70,000 cubic yards per annum on an ongoing basis. We have analyzed whether these revised estimates alter the effects of the action in a way not considered in the Opinion and have determined that they do not; our rationale is set out below. Because the original estimates were transferred through into the Incidental Take Statement as incidental take surrogates, it is appropriate to now revise the ITS to include surrogates for pile replacement and maintenance dredging that reflect our revised estimates for these two activities.

Rationale

The revised estimated levels of activity for dredging and pile replacement and do not trigger reinitiation of consultation. As mentioned, the proposed action did not include projected work levels with numeric values and, while NMFS did the best it could to develop some numeric estimates about projected activity levels, an increase in the projected level of activity for pile replacement and dredging does not alter the effects of the action in a way not considered in the Opinion. Rather, as explained in more detail below, our analysis and conclusions were primarily based on the nature of the activities, the expected temporal and geographic distribution of the activities, the limits and restrictions represented by the best management practices (BMPs), and the conservation offsets built into the proposed action.

The pathways of exposure to pile replacement and dredging effects (noise, turbid conditions, temporarily reduced prey availability) will remain consistent regardless of the increased level of activity estimates for these activities. The suite of responses among exposed listed species will also remain consistent (ranging from startle to injury from pile driving among fish; avoidance behavior when encountering turbidity; seeking out alternative forage areas when encountering areas of reduced prey). The protective value of BMPs (e.g. work within identified protective work windows, to monitor for turbidity, when to apply a sediment curtain, when to vibratory drive, when to apply bubble curtain, when to employ marine mammal monitoring and stop-work protocols) also remain fully applicable regardless of the increased estimates of level of activity, which will effectively minimize the short-term effects such that they remain consistent with the effects described in the Opinion. Further, the temporal and geographic spread of the activities will remain consistent with those assumed in the Opinion, i.e., occurring at locations throughout the Salish Sea ensuring a broad distribution of the short-term effects of these activities and still only affect a tiny proportion of the nearshore and estuary habitat in the Salish Sea. In addition, the long-term effects on habitat will continue to be fully offset pursuant to the offset requirements built into the proposed action, thereby avoiding per-project chronic and additive habitat diminishments that result in harm, reduced survival, and lower productivity of listed species, and reduce the conservation potential of designated critical habitat. A key element of the proposed action is offsetting measures to balance impacts associated with maintenance work and here both pile replacements and maintenance dredging are work categories that must have

associated offsets; thus no increase in long term impact would result by the increased estimates in activity level for either category.

For all these reasons, increasing the activity estimates for pile driving and dredging as proposed does not alter the effects of the action in a way not considered in the Opinion and thus reinitiation is not required.

The original incidental take surrogates reflected NMFS' numeric estimates of expected pile replacement and dredging and because those estimates are now being increased, it is appropriate to revise the incidental take surrogates for those activities as well. The analysis above concludes that these increased estimates do not undermine the effects analysis and thus do not cause jeopardy. Accordingly, NMFS provides below a revised Incidental Take Statement to reflect more accurately the anticipated amount of work to occur annually for pile replacement - adjusting the number to 2800 piles per annum, and the amount of dredging – adjusting the number to 70,000 cubic yards.

Finally, NMFS wishes to clarify how the extent of take was intended to be interpreted for the duration of the Salish Sea Nearshore Program. NMFS's annual extent of take should be interpreted as a rolling average, such that any amount not utilized in any given year may be applied to the following year. Relying on the Corp's tracking of dredge per calendar year, and based on the doubled extent of take allowed in each of the first two years of SSNP, 66,800 cubic yards from year one, would have rolled to year two, for a total of 134,800 cubic yards available in the second year. The Corp's record shows that in the second calendar year, only 19,837 cubic yards were authorized under SSNP, leaving 114,963 cubic yards to roll to year three (Jan 1, 2024 – Dec 31, 2204). When the standard amount for three, applying the original extent of take of 34,000 cubic yards, plus the rollover amounts from years one and two, the total volume available within the extent of take for dredge would be 148,963 cubic yards.

2.9 Incidental Take Statement

Section 9 of the ESA and federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Harass" is further defined by interim guidance as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or permittee (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

2.9.1 Amount or Extent of Take

Projects authorized under SSNP will take place beside and within aquatic habitats that are reasonably certain to be occupied by individuals of the ESA-listed species considered in this opinion. As explained in 1.2.1, we considered information from the Corps' consultation request, information from completed consultations, and information from consultation requests to project the future level of activity expected under SSNP. In developing indicators or surrogates to express the extent of incidental take, the values of the metrics used to project levels of activity were round up or down to a relevant whole number (e.g., 23,699 linear was rounded to 24,000 linear feet). As described below, the proposed action is reasonably certain to cause incidental take of one or more of those species.

We expect that the amount or extent of take described below is for a typical year of work that would be authorized under SSNP. This amount and extent of take is not expected to be account for any take caused by the projects currently in the list of pending consultations. NMFS currently has approximately 100 pending consultations[1] in the nearshore of the Salish Sea that could potentially be authorized under SSNP. NMFS and the Corps will endeavor to complete these consultations as expeditiously as possible, but anticipate that it could take up to two years to fully clear all pending consultations that may qualify for coverage under SSNP. As a result, and taking a conservative approach to planning, we anticipate that during the first two years of activity the expected take will be approximately double what is expressed in Table 3 to account for the existing consultations in addition to new projects anticipated to be authorized under SSNP. Since many projects have been delayed due to the amount of existing consultations, the level of impact on nearshore habitat over the past two years (2020 and 2021) has been low. Up to the first two years following the finalization of SSNP will represent a "catch-up" period when pending consultations and new projects are authorized. Essentially, the work authorized under SSNP for up to the first two years will represent four years' worth of work. The amount or extent of incidental take, identified below in Table 18 includes estimates for typical future years It is possible that the pending consultations will be cleared much more quickly than two years, in which case that expected amount of two-years' worth of take may occur sooner.

Harassment, capture, death, injury of juvenile fish at in-water work area construction sites

Juvenile salmon, steelhead, and rockfish would be harassed, injured, captured or killed at in-water construction sites due to dewatering, fish salvage efforts, increased turbidity, decreased dissolved oxygen. Exclusion from preferred habitat areas causes increased energy use and an increased likelihood of predation, competition and disease that is reasonably certain to result in injury or death of some individual fish.

Based on fish salvage efforts carried out under similar programmatic consultations, NMFS anticipates that up to 10, 000 juvenile salmon, steelhead, and rockfish will be captured annually during fish salvage associated with work area isolation (Table 18). Less than 5% of these fish are expected to die during the single-event salvage process.

[1] As used here, this term refers to any consultation request yet to be completed as of May 1st, 2022

Entrainment, increased turbidity, and resuspension of contaminants from dredging.

Salmon, steelhead, and rockfish will be entrained, injured, or killed during dredging operations with a suction dredge. The use of a clamshell or bucket to dredge is less likely to entrain juveniles. Most fish that are entrained will be injured or killed. The exact number of juveniles that would be entrained cannot be determined due to extensive variables. The best available indicator of take is one that best describes the dredging efforts relative to the amount of materials dredged. Fish will also be injured or killed by increased turbidity and resuspension of contaminants. The extent of take for incidental take caused by dredging is the maximum volume of material dredged annually. This indicator is appropriate for this proposed action because it is directly related to the magnitude of incidental take caused by dredging. As explained earlier, to determine the maximum volume amounts of materials dredged, we reviewed implementation records from other programmatic consultation as well as consultation requests received during 2021. Based on this review, we expect the total amount of material dredged for vessel access to not exceed 70,000 cubic yards annually. There was less information available for dredging to maintain water intake structures, culverts, or outfalls. Based on our experience with other programmatic consultations, we expect this activity would result in no more than 500 cubic yards of material dredged annually (Table 18).

Pile driving

Installation or removal of piles will cause underwater sound sufficient to harass, injure, or kill salmon, steelhead, and rockfish. The implementation of marine mammal monitoring pans with stop work provisions will ensure not incidental take of SRKWs from pile driving or removal. NMFS cannot estimate the number of fish harassed, injured, or killed by pile driving or removal because fish presence at project sites will vary depending on time of years, water temperature, forage distribution and many other factors. Additionally, there are limited ways to count or observe the number of fish exposed to the adverse effects of pile driving without causing additional risk of injury or harassment. The number of piles driven annually for projects authorized under SSNP is the valid indicator of the amount of incidental take caused by pile driving. The number of piles driven is proportional to the amount of take because each pile driven creates sound that could harass, injure, or kill fish. The risk and total number of fish likely to be exposed as more piles are driven. As explain earlier, the project number of piles expected to be driven annually for project authorized under SSNP is 2,800 (Table 18).

Harm caused by shoreline modification

Shoreline armoring restricts natural beach forming processes (natural erosive processes) by disrupting the supply and replenishment of sediment sources that are the base of forage fish spawning habitat (effects described in Section 2.4, above). As forage fish reproduction is restricted or reduced, so is the availability of food for listed fish (salmon and bocaccio), limiting and reducing the numbers of listed fish that the action area can support. In turn, this limits the number of juvenile PS Chinook salmon that will survive and return to the Puget Sound as adults that supply prey for SRKW. This effect on forage levels is a form of harm in that this loss actually kills or injures PS Chinook salmon and SRKWs by significantly impairing the essential behavioral of feeding. The loss of natural sediment deposition along the shoreline north and

south of a structure that supports forage fish and other intertidal and nearshore habitat function are directly proportional to the, length of shoreline armoring and bulkheads. As the length of a bulkhead increases so does impact to sediment inputs. Based on our review of implementation records from other programmatic consultation as well as consultation requests received during 2021, we expect no more than 24,000 feet of shoreline armoring to be repaired, replaced, or constructed (new) annually (Table 18).

Stormwater management

Stormwater runoff from new and repaired/replaced contributing impervious surface would result in delivering a wide variety of pollutants to aquatic ecosystems, such as nutrients, metals, petroleum-related compounds, sediment washed off the road surface, and agricultural chemicals. Stormwater inputs will result in short-term reduction of water quality and an increase in water quantity due to concentrated flows derived from impervious surfaces which are reasonably certain to cause injury to fish depending on the level of exposure. Stormwater contaminants cause a variety of lethal and sublethal effects on fish, including disrupted behavior, reduced olfactory function, immune suppression, reduced growth, disrupted smoltification, hormone disruption, disrupted reproduction, cellular damage, and physical and developmental abnormalities (Fresh et al. 2005; Hecht et al. 2007; Lower Columbia River Estuary Partnership 2007). Stormwater treatment practices and flow control best management practices described in the proposed action will reduce pollution, or other adverse effects of stormwater from occurring up to the design storm level.

This take cannot be accurately quantified as a number of individuals of ESA-listed species because, although the relationship between numerical concentrations of stormwater pollutants are easily demonstrated in the lab, the pollutants in actual runoff come from many small sources that cannot be distinguished after they reach a given waterbody. The distribution of those pollutants also vary widely within that waterbody as a function of surrounding land use, pre-rainfall conditions, rainfall intensity and duration, and mixing from other drainage areas. Stormwater runoff events are often relatively brief, especially in urban streams, so that large inputs of runoff and pollutants can occur and dissipate within a few hours. Moreover, the distribution and abundance of fish that occur within the action area is inconsistent over time, affected by habitat quality, interactions with other species, harvest programs and other influences that cannot be precisely determined by observation or modelling. The best available take indicator reflects the stormwater management requirements and practices that we assumed in analyzing the stormwater effects of the proposed action. The extent of take surrogate for stormwater effects is as follows:

All applicants completing a project to be authorized under this programmatic consultation, that requires post-construction stormwater management, shall complete a post-construction stormwater management plan and receive review and verification from NMFS that the stormwater management plan is adequate in meeting the design criteria found in the SSNP proposed action.

Submission of a stormwater management plan with review and verification by NMFS will not provide a specific measurement of watershed health. However, compliance with the plan

development and review requirements reflects the extent of take because they correlate with the level of stormwater treatment that was assumed in the Opinion; any non-compliance with the stormwater plan requirements will result in take at levels that was not analyzed in the Opinion. Although the surrogate is somewhat coextensive with the proposed action it nevertheless functions as a meaningful reinitiation trigger because the permittees can track them and it will be clear if and when these indicators are exceeded.

If the permittee fails to receive NMFS review and verification of a submitted stormwater management plan before the Corps authorizes a particular project, the extent of take will be exceeded and reinitiation provisions of this opinion will be triggered.

Construction and dredging related disturbance (suspended sediment/turbidity).

The best available indicator for the extent of take caused due to temporary water quality impacts of construction and dredging is an increase in visible suspended sediment in the water column. This variable is proportional to the water quality impairment construction and dredging will cause, including increased sediment, temperature, and contaminants, and reduced dissolved oxygen. NMFS assumes that an increase in turbidity will be visible in the immediate vicinity of project areas and for a distance downstream or downcurrent, and the distance that increased sediment will be visible is proportional both to the size of the disturbance and therefore the amount of take that will occur. Also, a turbidity flux may be greater at project sites that are subject to tidal or coastal scour. The extent of take will be exceeded if the turbidity plume generated by construction activities is visible above background levels, above a 10 percent increase in natural turbidity

<u>For non-dredging activities</u>
The levels of suspended sediments and contaminants are expected to be proportional to the amount of injury that the proposed action is likely to cause through physiological stress from elevated suspended sediments and contaminants throughout the duration of the projects' in-water activities. In estuaries, state water quality regulations (WAC173-201A-400) establish a mixing zone of 200 feet plus the depth of water over the discharge port(s) as measured during mean lower low water. As such, NMFS expects that for projects with sediment disturbing activities, that elevated levels of suspended sediment and re-suspended contaminants resulting from construction actions will reach background levels within a 200-foot buffer from the point of suspended sediment generation. Listed fish and their prey resources can be harmed from a wide range of elevated sediment levels and expect that at the point where sediment levels return to background levels that the harm will cease. Thus, the maximum extent of take caused by turbidity levels shall not exceed 5 nephelometric turbidity units (NTUs) more than background turbidity when the background turbidity is 50 NTUs or less, or there shall not be more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTUs.

<u>For dredging activities</u>
The levels and amounts of suspended sediments and contaminants are expected to be proportional to the amount of injury that the proposed action is likely to cause through physiological stress from elevated suspended sediments. For dredging activities that occur in estuary environments, Washington state water quality regulations (WAC173-201A-400)

establish mixing zones not to extend to a downstream direction for a distance from the discharge port(s) greater than three hundred feet plus the depth of water over the discharge port(s), or extend upstream for a distance of over one hundred feet. As such, NMFS expects that for projects with dredging, that elevated levels of suspended sediment and re-suspended contaminants resulting from dredging actions will reach background levels within a 300-foot buffer from the point of suspended sediment generation. Listed fish and their prey resources can be harmed from a wide range of elevated sediment levels and expect that at the point where sediment levels return to background levels that the harm will cease. Thus, the maximum extent of take for turbidity levels caused by dredging shall not exceed 5 nephelometric turbidity units (NTUs) more than background turbidity when the background turbidity is 50 NTUs or less, or there shall not be more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTUs.

Harm due to the presence of in-water and over-water structures and vessel impacts

The physical size (square feet) of an in- or over-water structure is the best available surrogate for the extent of take from exposure to the structure itself and also the accompanying impacts caused by vessels accommodated by the structure. This is because the likelihood of avoidance and the distance required to swim around the structure (migration delay) would both increase as the size of a structure and the intensity of its shadow increase, which would increase the number of juveniles that enter deeper water where forage efficiency would be reduced and vulnerability to predators would be increased. The amount of overwater structure directly determines the amount of shaded area, migration obstruction, reduced benthic productivity and submerged aquatic vegetation (SAV) distrusting and limiting feeding opportunities available at the project sites (effects further described in Section 2.4). The extent of these impacts would increase and decrease depending directly on structure size.

Also, as the size of a structure increases, the number of individual vessels that could moor there generally increases; mooring buoys only allow for one vessel to moor at a time and structure and slip sizes within marinas would dictate the number of individual vessels that could use these facilities. As the number of mooring buoys increases the number of vessels using it will be expected to increase. As size and slip number increase, the number of vessels using a marina could also increase. As the number of vessels increase, boating activity would likely increase, and the potential for ESA-listed species to be exposed to the related noise effects (as described in Sections 2.3, 2.4.1 and 2.4.2) also increases. Based on our review of implementation records from other programmatic consultation as well as consultation requests received during 2021, we expect no more than 220,000 square feet to be repaired, replaced, or constructed (new) annually (Table 18).

Harm caused by resuspension of contaminants during sediment remediation

Sediment remediation would cause harm to listed species through the resuspension of toxic compounds found in contaminated sediments. The amount of disturbed area is directly related to the amount of incidental take caused by resuspension because the level of contaminants resuspended increases with the area disturbed. This indicator can be reasonably and reliably measured and monitored by applicants. The Corps has not proposed to authorize this activity in

recent requests for consultation. To determine the likely size of future sediment remediation projects, NMFS consider recent consultation requests on this activity from the Environmental Protection Agency. Their requests are typically for less than 50 acres of remediation. Assuming projects would not exceed this size, the extent of take caused by resuspension of contaminants during sediment remediation would be exceeded if more than 50 acres are remediated annually.

The surrogate measures of incidental take identified in this section can be reasonably and reliably measured and monitored by applicants. Additionally, these surrogates can be tracked by the Corps in real time and the Corps will know when the surrogates are exceeded or being approached.

Table 18. Incidental take pathways and associated indicators of the amount or extent of incidental take.

Incidental Take Pathway	**Amount or Extent of Incidental Take**
Listed ESA Salmonids captured annually (number salvaged)	10,000 juvenile salmon, steelhead, and rockfish (capture of rockfish is likely to be uncommon) annually.
Pile Driving	Annually 2,800 piles would be repaired, replaced, installed. In addition, in the first two years of SSNP implementation, we expect 2,800 piles to be repaired, replaced, or installed annually. In total, we expected no more than 5,600 piles to be repaired, replaced, installed during the first two years of SSNP implementation.
Entrainment, injury, or death from dredging operations (cubic yards)	≤ 70,000 cubic yards of volume of material dredged for vessel access and ≤ 500 cubic yards of volume material dredged for functionality of culverts, intakes, and outfalls annually In the first two years of SSNP implementation, we expect up to 68, 000 cubic yards of volume of material to be dredged for vessel access and ≤ 1,000 cubic yards of volume material dredged for functionality annually. In total, we expect no more than 136,000 cubic yards of volume of material to be dredged for vessel access and ≤ 2,000 cubic yards of volume material dredged for functionality during the first two years of SSNP implementation.
Harm caused by shoreline modification (bulkhead, etc.)	24,000 linear feet repair, replaced, installed (new) annually Up to 48, 000 linear feet repair, replaced, installed (new) annually during the first two years of SSNP implementation. In total, we expect no more than 98,000 linear feet of shoreline modification will be repaired, replaced, installed during the first two years of SSNP implementation.

Incidental Take Pathway	Amount or Extent of Incidental Take
Visible suspended sediment (turbidity) and small amounts of contaminants released during in-water construction and dredging	turbidity levels shall not exceed 5 nephelometric turbidity units (NTUs) more than background turbidity when the background turbidity is 50 NTUs (monitored and reported to NMFS and the Corps) or less, or there shall not be more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTUs
Stormwater management	NMFS review and verification of stormwater management plan and stormwater information provided prior to the Corps authorizing or carrying out a project
Harm due to the presence of in-water and over-water structures and vessel impacts	220,000 square feet of in-or over-water structure from new, repair, or replacement annually Up to 440,000 square feet of in-or over-water structure from new, repair, or replacement annually during the first two years of SSNP implementation. In those first two years, we expect a total of no more than 880,000 square feet of in-or over-water structure will be repaired, replaced, or constructed (new).
Harm caused by resuspension of contaminants during sediment remediation	50 acres of area remediated annually There are no sediment remediation projects in the group of pending consultations, so no additional extent of take is predicted

Sincerely,

Kim W. Kratz. Ph.D
Assistant Regional Administrator
Oregon Washington Coastal Office

cc: Kristin Mahen, USACE