



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OR 97232-1274

Refer to NMFS No:
WCRO-2020-01579

December 16, 2020

Chris Page
Branch Chief, Environmental Resources
U.S. Army Corps of Engineers
333 Southwest 1st Avenue
Portland, Oregon 97204

Re: Endangered Species Act Section 7 Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Portland Metro Levee System Feasibility Study (HUC 170800), Multnomah County, Oregon

Dear Mr. Page:

This letter responds to your June 15, 2020, request for initiation of consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) on the effects of the proposed action to rehabilitate the Portland Metro Levees System (PMLS) as described in the above titled Biological Assessment (BA) (USACE 2020).

Your request qualified for our expedited review and analysis because it met our screening criteria and contained all required information on, and analysis of, your proposed action and its potential effects to listed species and designated critical habitat.

We reviewed the U.S. Army Corps of Engineers, Portland District's (Corps) consultation request and related initiation package, including the BA and additional supplemental information, which is available on file at the NMFS Oregon Washington Coastal Office in Portland, Oregon. Where relevant, we adopted the information and analyses provided in the BA, but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. We adopt by reference here the following sections of the BA:

- Section 1 for the description of the action area, and status of species and critical habitat;
- Section 2 for the environmental baseline;
- Section 3 for the description of the proposed action, including the purpose and need;
- Section 4 for the effects of the proposed action and cumulative effects.

The Corps notified the National Marine Fisheries Service (NMFS) of the impending study and proposed action during a regulatory agency meeting on December 10, 2018 at the Corps' offices in downtown Portland. A follow-up meeting was held with NMFS on February 28, 2019, in the Corps' offices. NMFS met and toured the PMLS project area with the Corps and Multnomah County Drainage District #1 on June 13, 2019. The Corps met with NMFS to discuss the environmental assessment for the proposed plan on February 10, 2020.



The Corps submitted the BA for this proposed action on June 15, 2020. NMFS requested additional information on the proposed management of stormwater and stormwater impacts in an email dated July 29, 2020, and received supplemental information from the Corps on July 30, 2020, and August 14, 2020. NMFS determined the supplemental information provided was sufficient to initiate consultation on August 14, 2020.

The Corps is proposing to improve the current functionality of the PMLS as described in Section 3 of the BA. Specifically, the Corps would widen levees, lengthen and raise floodwalls, and add a new levee. All work would occur on the land side of the levees, and no in-water work is proposed. Other system improvement measures include pump and gate system rehabilitation, debris removal, system automation, flood-management improvements, and non-structural measures such as flood education and preparation. The overall construction duration would be 42 months. The tentative project schedule shows construction beginning in spring 2022 and concluding in fall 2025 at the earliest.

“Action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Section 1.5 of the BA describes the action area as follows (see also, BA, Figure 1.1—Action Area Vicinity):

- The project footprint of proposed construction actions such as levee widening, levee setbacks, construction of new internal levees, construction staging areas;
- An additional approximately 1000 feet beyond the project footprint for construction equipment activities that would result in new or continuing permanent increases in dust, terrestrial noise, light, water quality, or human presence, and areas of permanent loss of habitat due to expansion of facilities;
- An unspecified distance for underwater pile driving impacts that would vary depending on the presence of natural buffers; and
- A 300-foot mixing zone downstream for the water quality effects of construction and post-construction activities based on turbidity levels specified in a Section 401 Water Quality Certification.

Reaching agreement on the description of the action area is desirable, but ultimately NMFS is responsible for this biological determination. In this case, NMFS does not concur with the Corps’ description of the action area for two reasons. Post-construction stormwater discharged from the PMLS will contain a variety of pollutants and contaminants with lethal and sublethal effects on ESA-listed species that go far beyond turbidity. Moreover, the volume of those constituents can be reduced but not eliminated by water quality treatment, and many of them will persist in the water column or sediments, in combination with pollutants and contaminants from surrounding watersheds, until that water and sediment are eventually discharged downstream in the coastal ocean (NMFS 2013; 2014; and 2018).

Similarly, the historic and continued presence of the PMLS contributes to a modern pattern of water control structures that have modified hydraulics and hydrology throughout the lower Columbia River and estuary by increasing in river tides, river flow velocity, flushing time, fine sediment deposition, and the net accumulation of sediment, while also decreasing baseline water levels, freshwater inflow, tidal prism, and mixing (Sherwood et al. 1990, BPA 2016, Helaire et al. 2019). Therefore NMFS concludes that the action area for the proposed PMLS rehabilitation

extends beyond the project footprint downstream to the confluence of the Columbia River with the coastal ocean.

Table 1.2 in the BA lists the following 15 species of ESA-listed fish as likely to occur within the action areas as occurring within the action area, NMFS confirms that the following species are likely to occur in within that action area (BA, Table 1.2), and NMFS concurs with this list:

1. Lower Columbia River Chinook salmon
2. Upper Willamette River Chinook salmon
3. Upper Columbia River spring-run Chinook salmon
4. Snake River spring/summer run Chinook salmon
5. Snake River fall-run Chinook salmon
6. Columbia River chum salmon
7. Lower Columbia River coho salmon
8. Snake River sockeye salmon
9. Lower Columbia River steelhead
10. Upper Willamette River steelhead
11. Middle Columbia River steelhead
12. Upper Columbia River steelhead
13. Snake River Basin steelhead
14. Southern DPS green sturgeon
15. Southern DPS eulachon

The Corps determined the proposed action may affect but would not be likely to adversely affect green sturgeon and Pacific eulachon (BA section 4.2). However, NMFS determined the proposed action is likely to adversely affect green sturgeon and Pacific eulachon, as well as their designated critical habitats as discussed below.

Green sturgeon are long-lived, benthic dwelling species that spend an appreciable amount of their life cycle in bays, estuaries, and lower elevation river systems, southern green sturgeon are vulnerable to the effects of pollutants, particularly in suspended sediments and bioaccumulation of contaminants in their prey, although exposure to pollutants has not been identified as a limiting factor for the species.

Eulachon have a very different life history than Pacific salmon and begin their passive migration to the sea as soon as they emerge from the egg. Wind, river currents, and the tidal ebb and flow necessary to flush water out of the Columbia River estuary may redistribute eulachon larvae between the mainstem and channel margins, and delay their ocean entry for several weeks. Despite this brief freshwater residence time, water quality has been identified as a factor limiting their recovery.

According to the BA, Section 4.3, critical habitat for the Chinook salmon, chum salmon, sockeye, and coho ESUs, and steelhead DPSs, are also likely to be adversely affected by the proposed action due to minor turbidity during construction and operations, and minor adverse post-construction effects to water quality, water temperature, or water quantity. Conversely, the Corps determined critical habitat for Pacific eulachon is not likely to be adversely affected by the

proposed action, and the proposed action would have no effect on green sturgeon critical habitat. Our information confirms the presence of critical habitat in the action area but, contrary to the BA, and as explained above, we conclude that the effects of the proposed action are likely to adversely affect not only salmon and steelhead critical habitat, but also Pacific eulachon and green sturgeon critical habitat.

We used information in Section 1 and 2.4 of the BA to examine the status of each species and the condition of critical habitat throughout the designated area, as described in 50 CFR 402.02, and supplemented that with additional information from NMFS (2020) for species and critical habitats in the lower Columbia River, including the function of the physical or biological features (PBFs) essential to the conservation of the species that create the conservation value of those critical habitats. We also considered information from conservation and recovery plans for those species (NMFS 2020) describing the presence, abundance, density or periodic occurrence of listed species and the condition and location of the species' habitat, including critical habitat, as described in 50 CFR 402.14(c)(1)(iii).

We used information in Section 2 of the BA to examine the "environmental baseline," including the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal actions in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

This environmental baseline includes impacts of the existing PMLS infrastructure that will also be analyzed as "effects of the action" due to the continued presence of the PMLS in the environment after the proposed rehabilitation is complete (see Thom 2018). The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are also part of the environmental baseline.

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b). Because the proposed action will extend the useful life of the PMLS in a meaningful way, we also considered the future impacts associated with the presence of the PMLS in the environment separate from consideration of the impacts of construction necessary to rehabilitate the PMLS (see Thom 2018).

Sections 4.2 and 4.3 of the BA provide a detailed discussion and comprehensive assessment of the effects of the proposed action, and are adopted here pursuant to 50 CFR 402.14(h)(3)(i). NMFS evaluated these Sections of the BA and after our independent, science-based evaluation determined that it meets our regulatory and scientific standards. A detailed discussion of the proposed action's potential impact on critical habitat is included in Section 4.3 of the BA.

“Cumulative effects” are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02 and 402.17(a)). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. Section 4.4 of the BA describes cumulative effects in the immediate project area, and NMFS relied on information in NMFS 2014 and NMFS 2020 for cumulative effect information for the lower Columbia River and estuary part of the action area.

Integration and synthesis of information for the status of species, environmental baseline, effects of the action, and cumulative effects is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. Here, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate our biological opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

As described in the BA, Sections 1.6 and 2.4, information cited therein, individual UWR Chinook salmon, LCR Chinook salmon, UCR Chinook salmon, SR fall run Chinook salmon, SR spring run Chinook salmon, LCR steelhead, Middle Columbia River steelhead, UCR steelhead, UWR steelhead, and SR steelhead, SR sockeye salmon, LCR coho salmon, Columbia River chum salmon, green sturgeon, and Pacific eulachon use the action area to complete part of their life history requirements. Some salmon and steelhead migrate and rear in the action area, while others only migrate through, once as out-migrating juveniles and then again as adult fish on upstream spawning migration.

The status of each salmon and steelhead species, as well as Pacific eulachon and green sturgeon, addressed by this consultation varies considerably from very high risk of extinction (UWR and LCR Chinook salmon, SR Sockeye salmon), moderate to high risk (LCR coho salmon) to moderate risk (UWR and LCR steelhead). Similarly, the many individual populations affected by the proposed program vary considerably in their biological status. The species addressed in this opinion have declined due to numerous factors. A factor for decline that all these species share is degradation of freshwater and estuarine habitat. Human development of the Pacific Northwest has caused significant negative changes to stream and estuary habitat across the range of these species. Climate change is likely to exacerbate several of the ongoing habitat issues, in particular, increased summer temperatures, and decreased summer flows in the freshwater environment, ocean acidification, and sea level rise in the marine environment.

As described in Section 2 of the BA, the environmental baseline for critical habitat within the action area in the immediate vicinity of the PMLS offers little in terms of conservation value to listed fish species under current conditions. Due to construction of levees and other types of water control structures that are part of the PMLS, historic riparian areas and adjacent floodplains are hydrologically disconnected from the mainstem Columbia and Willamette Rivers, or too narrow to adequately provide the essential ecosystem functions associated with their natural or relatively undisturbed conditions, such as less extreme flooding, flood water

retention, reduced erosion and sedimentation, reduced impacts from waves and storm surges, maintenance of water quality, ground water recharge, and provision of other physical and biological features necessary for ESA-listed fish to grow and thrive. Similarly, the PMLS largely excludes ESA-listed fish from any remaining habitat on the land side of the PMLS, and limits their shallow water habitat options on the water side of the PMLS to the highly simplified, degraded, and unfavorable conditions where the affected rivers face the levees.

The environmental baseline for the action area farther downstream of the PMLS includes an increased likelihood of flooding, and an increased danger that pollutants and contaminants from developed areas will be flushed into the river. As described in NMFS (2020), the environmental baseline in the lower Columbia River is not meeting all biological requirements of individual fish of listed species, and critical habitat is not fulfilling its full conservation potential due to one or more impaired aquatic habitat functions related PBFs for water quality, substrate, off-channel habitat, channel conditions and dynamics, stream hydrology, and other habitat factors limiting the recovery of the species in that area. Similar to their impacts on species, current trends in climate and marine conditions are likely to place additional stress on the conservation value of critical habitats.

The design of the PMLS rehabilitation as described in Section 3 of the BA is a key factor in our assessment of the construction impacts associated with the proposed action, and the management of post-construction stormwater discharge. As described in Section 4.2 of the BA, no in-water work is proposed. The effects of the upland construction will be relatively short term, including increased turbidity caused by erosion, stormwater run-off, and use of heavy machinery near a major waterbody; all of which will be minimized using construction BMPs intended to isolate the construction areas. These effects will also be relatively minor, and are expected to result in a small, temporary reduction in the use of the action area for feeding, resting, and refuge from predators by ESA-listed species, and in the conservation value of their critical habitats to support of those behaviors.

Post-construction operation and maintenance will result in increased stormwater runoff that will be managed through stormwater management facilities that will be designed, built, and maintained as described in NMFS (2014). However, despite being treated, post-construction stormwater runoff still contains a wide variety of pollutants and contaminants, including sediment, nutrients, metals, petroleum-related compounds, pesticides, particles of tire tread, and other chemical compounds. Some of those contaminants are persistent and can travel long distances in aquatic systems. Some are also likely to accumulate in species as they pass from one species to the next through the food web. Those constituents have been observed to harm fish that come into contact with them far downstream when they enter fish tissues at levels high enough to modify behavior, disrupt endocrine functions, or cause immunotoxic disease effects, either by themselves or through additive, interactive, and synergistic interactions with other contaminants in the river.

The volume of stormwater that would be discharged from the PMLS is small in comparison to the volume of streamflow downstream, and the impact of pollutants and contaminants in that discharge are also small when compared to the adverse effects caused by the contaminants in all historical or existing stormwater discharges. Nonetheless, this discharge will have an incremental

effect on the pollutant levels at the watershed scale due to the sustained, long-term, and chronic nature of stormwater discharges, and due to the compounding effects of environmental processes that affect the fate and transport of those pollutants.

Commensurate with the relatively small amount of treated runoff that will be produced by the PMLS, the intensity and severity of this additional increment of adverse effect on species and critical habitats in the action area will be very low. Moreover, any runoff from impervious surfaces adjacent to the PMLS that had previously been discharged into the footprint of the PMLS, and that was either untreated or under-treated relative to the methods prescribed in SLOPES, will now achieve the same level of stormwater treatment as the new impervious area itself, further minimizing the overall adverse effects of this action. Thus, the impacts of the proposed action on species and critical habitat is not expected to reduce the abundance, productivity, or genetic or spatial diversity of any affected population of Pacific salmon, southern green sturgeon, or eulachon, or reduce the conservation value of any of critical habitat PBFs considered here, at either the site, watershed or designation scale.

The effects of the continued existence of PMLS infrastructure into the foreseeable future are likely to be similar to those described as environmental baseline conditions, including disconnection of the floodplain in the project area and continued hydraulic and hydrologic impacts on the lower Columbia River and estuary. The proximity of those effects to ESA-listed species and critical habitats will remain the same, as will the distribution, timing, nature, duration, frequency, intensity, and severity of the effects.

Cumulative effects will include actions by the City of Portland, watershed councils, the State of Oregon, and other entities that are likely to continue to undertake projects to improve habitat for listed anadromous species in the lower Columbia Slough and the lower reaches of the Columbia River that are likely to have a beneficial effect on listed species and their critical habitats. Conversely, as the human population grows, new residential and industrial growth will likely occur in the action area. We used additional information from NMFS (2020) to complete this part of our analysis and conclude that overall, urban areas are likely to experience continued population growth while redevelopment and private restoration actions will begin to improve negative baseline conditions and, in rural areas, agricultural and forestry practices are also likely to continue at a scale similar to that in the past.

After reviewing and analyzing the current status of the 15 ESA-listed species and their designated critical habitats considered in this opinion, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of the fifteen species considered in this opinion, or destroy or adversely modify their designated critical habitats.

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). "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 (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.

Amount or Extent of Take

In the biological opinion, NMFS determined that harm to juveniles and adults of all ESA-listed salmon and steelhead considered in this opinion will be caused by:

- Decreased water quality and increased dust, noise, light, and human presence during construction of the PMLS; and,
- Adverse effects associated with the presence of the PMLS in the environment, separate from effects caused by its construction, including, but not limited to, the impact of post-construction stormwater discharge and a range of hydraulic and hydrological impacts.

The distribution and abundance of fish that occur within an action area are affected by habitat quality, competition, predation, and the interaction of processes that influence genetic, population, and environmental characteristics. These biotic and environmental processes interact in ways that may be random or directional, and may operate across far broader temporal and spatial scales than are affected by the proposed action. Thus, the distribution and abundance of fish within the action area cannot be attributed entirely to habitat conditions, nor can NMFS precisely predict the number of fish that are reasonably certain to be injured or killed if their habitat is modified or degraded by the proposed action. In such circumstances, NMFS cannot provide an amount of take that would be caused by the proposed action.

1. The best available indicator for the extent of take associated with harm due to impaired feeding, resting, and refuge from predators caused by decreased water quality and increased dust, noise, light, and human presence during construction of the PMLS, is the extent of suspended sediment plumes.

Specifically, the anticipated take will be exceeded if increased suspended sediment from construction activities that take place near a water body causes a suspended sediment plume 300 feet from the boundary of such activities to cause turbidity, as measured in nephelometric turbidity units (NTUs), to exceed 5 NTU over the background level.

The extent of a suspended sediment plume is an effective reinitiation trigger because it is a leading indicator for the most critical type of off-site damage caused by construction practices, turbidity monitoring is consistent with National Pollutant Discharge Elimination System (NPDES) requirements and Section 401 water quality certification requirements by the Oregon Department of Environmental Quality for construction activities will take place in or near water bodies, and the Corps has contractual authority to take actions to address non-compliance.

2. The best available indicator for harm associated with the continuing presence of the PMLS in the environment is the as-built footprint for construction actions related to: (a) the total and increased width of widened levees; (b) the total and increased length and height of levees that are lengthened or raised; (c) the length and height of new internal levees; and (d) the area affected by any levee setback.

Specifically, the anticipated take for harm associated with the continued existence of the rehabilitated PMLS will be exceeded if the proposed action is completed in a way that results in an as-built footprint for any action described in (a) through (d) above that does not concur with alignment or grade tolerances shown by maps and drawings in section 3.7 of the BA.

The as-built footprint of the PMLS rehabilitation project is extent an effective reinitiation trigger because it is directly correlated to the area over which harm due to floodplain disconnection and altered hydraulic and hydrological conditions is likely to occur, as well as the level of impacts to species (the more area enclosed by the PMLS, the greater the loss of access to floodplain and estuarine resources). Such drawings are required by the Corps as part of the close-out process for completed work to identify whether actual conditions deviate from plans and specification documents, and the Corps has authority to modify contracts or issue other directions as necessary to ensure that all contract terms have been met.

3. The best available indicator for harm associated with the impact of post-construction stormwater discharge are a combination of stormwater facility design, construction, and maintenance, and operations as described in NMFS (2014) because they will determine whether the stormwater treatment system is operated and maintained in way that continues to minimize the concentration of pollutants in stormwater runoff as designed, and thus reflect the amount of incidental take analyzed in the opinion.

Exceeding either of the indicators for extent of take will trigger the reinitiation provisions of this opinion.

Effect of the Take

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

“Reasonable and prudent measures” are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02). The Corps shall:

1. Minimize incidental take from design, construction, operation, and maintenance of the PMLS by applying conditions to the proposed construction actions that avoid or minimize adverse effects to water quality and the ecology of aquatic systems.
2. Ensure completion of a monitoring and reporting program to confirm that the take exemption for the proposed action is not exceeded, and that the terms and conditions in this incidental take statement are effective in minimizing incidental take.

Terms and Conditions

The terms and conditions described below are non-discretionary, and the Corps must comply with them in order to implement the RPMs (50 CFR 402.14). The Corps has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. To implement reasonable and prudent measure #1 (design, construction, operation and maintenance of the PMLS), the Corps shall ensure that the PMLS rehabilitation is completed as follows:
 - a. Carry out all relevant conservation measures as described in the BA.
 - b. Turbidity: The Corps must implement appropriate Best Management Practices (BMPs) to minimize turbidity during in-water work. Any activity that causes turbidity to exceed 10% above natural stream turbidity is prohibited except as specifically provided below:
 - i. Monitoring: Turbidity monitoring must be conducted and recorded as described below. Monitoring must occur at two hour intervals each day during daylight hours when in-water work is being conducted on the river side of the project area. A properly calibrated turbidimeter is required unless another monitoring method is proposed and authorized by DEQ.
 1. Representative Background Point: Applicant must take and record a turbidity measurement every two hours during in-water work at an undisturbed area. A background location shall be established at a representative location approximately 100 feet upcurrent of the in water activity unless otherwise authorized by DEQ. The background turbidity, location, date, tidal stage (if applicable) and time must be recorded immediately prior to monitoring downcurrent at the compliance point described below.
 2. Compliance Point: The Applicant must monitor every two hours. A compliance location shall be established at a representative location approximately 100 feet downcurrent from the disturbance at approximately mid-depth of the waterbody and within any visible

plume. The turbidity, location, date, tidal stage (if applicable) and time must be recorded for each measurement.

- ii. Compliance: The Applicant must compare turbidity monitoring results from the compliance points to the representative background levels taken during each two-hour monitoring interval. Pursuant to OAR 340-041-0036, short term exceedances of the turbidity water quality standard are allowed as follows:

| Turbidity Level | Restrictions to Duration of Activity |
|---------------------------------|--|
| 0 to 4 NTU above background | No Restrictions |
| 5 to 29 NTU above background | Work may continue maximum of 4 hours. If turbidity remains 5-29 NTU above background, stop work and modify BMPs. Work may resume when NTU is 0-5 above background. |
| 30 to 49 NTU above background | Work may continue maximum of 2 hours. If turbidity remains 30-49 NTU above background, stop work and modify BMPs. Work may resume when NTU is 0-5 above background |
| 50 NTU or more above background | Stop work immediately and inform NMFS |

- c. When the construction of PMLS is complete, the Corps will ensure that all equipment is removed, temporary buildings and other infrastructure are removed, post-construction cleanup is complete, and that the project was completed with no unintended increase in the length, width, or height of any new or rehabilitated levee, or reduction in the area affected by any levee setback.
 - d. Prepare a post-construction stormwater management plan as described in NMFS (2014), and submit to NMFS for review and approval before beginning work on any new structural stormwater management facilities.
2. Ensure completion of a monitoring and reporting program to confirm that the take exemption for the proposed action is not exceeded, and that the terms and conditions in this incidental take statement are effective in minimizing incidental take.
- a. Turbidity. The Corps must record all turbidity monitoring required by subsection 1.b. above in daily logs. The daily logs must include calibration documentation; background NTUs; compliance point NTUs; comparison of the points in NTUs; location; date; time; and tidal stage (if applicable) for each reading. Additionally, a narrative must be prepared discussing all exceedances with subsequent monitoring, actions taken, and the effectiveness of the actions. The Corps must make available copies of daily logs for turbidity monitoring to DEQ, NMFS, USFWS, and ODFW upon request.
 - b. Project completion report. The Corps must provide a report with the following information within 60 days of completing all construction:

- i. As-built drawings of all levees in the PMLS corresponding to maps and drawings in section 3.7 of the BA., and a table or set of tables as necessary to summarize the final dimensions of the project footprint, including:
 - (1) The total and increased width of widened levees;
 - (2) the total and increased length and height of levees that are lengthened or raised;
 - (3) the length and height of new internal levees; and
 - (4) the area affected by any levee setback.
 - ii. A description of any deviation in those dimensions from alignment or grade tolerances shown by maps and drawings in section 3.7 of the BA.
 - iii. Evidence of compliance with fish screen criteria if any pump is used to withdraw water from the Columbia River for construction purposes, e.g., to wash aggregates, prepare raw concrete, cure concrete, dust suppression, or to wash hard surfaces or equipment.
 - iv. A summary of the results of pollution and erosion control inspections, including any erosion control failure, contaminant release, and correction effort.
- c. Post Construction Stormwater Management. The Corps must record all monitoring required by the Post-Construction Stormwater Management Plan described in subsection 1.c. above in an annual monitoring report for a period of three years after project completion.
- d. Reporting. Submit all monitoring reports to:

National Marine Fisheries Service
Oregon Washington Coastal Office
Attn: WCR-2020-01579
1201 NE Lloyd Boulevard, Suite 1100
Portland, OR 97232-2778

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

NMFS offers the following conservation recommendation:

Identify and implement habitat enhancement or restoration activities in the Columbia River that restore or create off-channel habitat or access to off-channel habitat, side channels, alcoves, wetlands, and floodplains.

Please notify NMFS if the Corps carries out this recommendation so that we will be kept informed of actions that are intended to improve the conservation of listed species or their designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the Corps or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) The amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or if (4) a new species is listed or critical habitat designated that may be affected by the identified action.

ESSENTIAL FISH HABITAT

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation. In this case, the entire action area is designated as EFH for Pacific salmon (PFMC 2014), and the Columbia River estuary is also designated as EFH for groundfish and coastal pelagic species (PFMC 1998, 2005), and as a Habitat Area of Particular Concern (HAPC) for all three types of EFH. NMFS concluded the proposed action would adversely affect EFH as follows:

1. Decreasing water quality and increasing dust, noise, light, and human presence during construction of the PMLS.
2. Adverse effects associated with the presence of the PMLS in the environment, separate from effects caused by its construction, including, but not limited to, the impact of post-construction stormwater discharge and a range of hydraulic and hydrological impacts.

The latter effects, in particular, will include water quality degradation caused by persistent pollutants and contaminants discharged into the Columbia River as constituents of post-construction stormwater, and modified hydraulics and hydrology throughout the action area caused by the historic and continued presence of the PMLS and other modern water control structures within that reach.

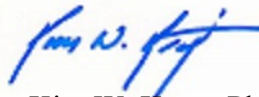
NMFS recommends that the Corps carry out the following conservation recommendations to avoid, mitigate, or offset the impact of the proposed action on EFH:

1. Carry out Terms and Conditions to implement Reasonable and Prudent Measure 1 and 2 from the ESA portion of this document.
2. Identify and implement habitat enhancement or restoration activities in the Columbia River that restore or create off-channel habitat or access to off-channel habitat, side channels, alcoves, wetlands, and floodplains..

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository <https://repository.library.noaa.gov/>. A complete record of this consultation is on file at the Oregon Washington Coastal Office, Portland, Oregon.

Please direct questions regarding this letter to Kate Wells, Kathleen.Wells@NOAA.gov, (503) 230-5437.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kim W. Kratz".

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

cc: Omar Ortiz: NWP Environmental Project Lead
Valerie Ringold: NWP Planning
Laura Hicks: NWP Project Manager
David Griffith: NWP PME-E Section Chief

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