UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

September 26, 2011

Mr. Kenneth Murphy
Regional Administrator
FEMA Region X
130 - 228th Street, Southwest
Bothell, Washington 98021-8627

Re: Implementation Standards for the NFIP Biological Opinion's Reasonable and Prudent Alternative

Dear Mr. Murphy:

The purpose of this letter is to clarify the intentions and perspectives of the National Marine Fisheries Service (NMFS) in its recommendations to the Federal Emergency Management Agency (FEMA) in our 2008 biological opinion on the administration of the National Flood Insurance Program in Puget Sound, in order to assist in the orderly and successful implementation of those recommendations. At the outset, please also allow me to express our appreciation at NMFS for all of the constructive and collaborative work that the FEMA professionals have brought and continue to bring to this most challenging effort. We appreciate it greatly.

By way of background, in 2008, NMFS released a biological opinion on the effects of the FEMA's National Flood Insurance Program (NFIP) on listed species in Puget Sound. The biological opinion found that the minimum requirements of the NFIP jeopardized the continued existence of Puget Sound Chinook salmon, Puget Sound steelhead, Hood Canal summer-run chum salmon, and Southern Resident killer whales, all of which are protected under the Endangered Species Act. The opinion also found that NFIP implementation under the FEMA minimum standards was likely to adversely modify critical habitat for several of these species. Based on these findings, NMFS developed a Reasonable and Prudent Alternative (RPA), which included revisions to NFIP implementation, so that future floodplain development would not impair critical habitat or listed species. Since this time, NMFS and FEMA have been working with local Puget Sound jurisdictions to modify NFIP implementation.

The RPA was written as a programmatic consultation that applies to the entire geographic region, and the applicability of each element of the RPA may vary from place to place since differing jurisdictions have differing floodplain conditions and requirements. If all jurisdictions adopted all components of the RPA, NMFS believes that NFIP implementation would avoid jeopardy to listed species. However, some components of the RPA may not apply to every jurisdiction, because in some jurisdictions the floodplain no longer contains essential habitat features. The NMFS believes it is contingent upon local governments to determine which

functions are present in their floodplains, and how they will maintain and restore floodplain functions.

Recently, working with FEMA and local governments, it has become apparent that some jurisdictions would like increased specificity concerning the RPA implementation standards. Jim Kramer's technical team identified specific items that were troublesome to some jurisdictions. FEMA and NMFS staff have worked together to develop joint guidance to address common concerns. We appreciate that FEMA Region X will provide the guidance at: http://www.fema.gov/regionx/nfipesa.shtm. This letter summarizes that detailed guidance, and clarifies NMFS' intentions on selected components of the RPA.

At the outset, a fundamental underpinning of the RPA is that local land use ordinances and plans need to be sufficient to ***protect current habitat functions in all stream reaches within the mapped floodplain***. The information below explains by subject area, NMFS' expectations for meeting the RPA, reflecting this fundamental element of the RPA.

***Achieving "No Adverse Effect" in the Protected Area***

One reoccurring question associated with the RPA has been "Are adverse effects ever permitted in the "Protected Area"[1]. Adverse effects are changes in habitat that decrease the value of the habitat for listed species. The RPA states that there should be *no adverse effect* to fish habitat from future development in the Protected Area. Several jurisdictions have indicated that they can provide a more fish-friendly submittal if they commit to restoration activities on a larger floodplain scale that offset unavoidable adverse effects on a local or parcel-by-parcel scale. NMFS endorses local submittals that clearly and demonstrably enhance floodplain functions and contribute to recovery of listed species. The RPA contemplates that the conservation standard of "no adverse effect" may be applied at multiple scales so long as the net cumulative effect of no adverse effect on function is achieved,

Fish use of the Protected Area varies with floodplain elevation, accessibility during high-water events, the presence of habitat features, the life-stage of migrating fish, and the length of time floodwaters provide habitat before receding. To determine if an action has adverse affects to listed species at a specific location, it is necessary to evaluate how the project will alter habitat and how those alterations will affect listed species. Existing habitat features and conditions influence the effects of an action. This means that the same action, conducted in different landscape conditions, may have different effects on fish and fish habitat. The technical workshops that NMFS and FEMA presented last spring were designed to help staff at local jurisdictions determine when projects have adverse effects. Although the precise effects are site specific, activities that are generally expected to have adverse effects include vegetation removal, bank armoring, placement of fill, creation of impervious surfaces that may degrade water quality, straightening of stream channels, and isolation of functioning habitat. These actions should always be assumed to have adverse effects and require a habitat assessment.

---

[1] The riparian area, the channel migration zone plus 50 feet, and the floodway are all components of the "Protected Area."

FEMA has proposed three alternatives for complying with the RPA which they termed Door 1 (Implementing the Model Ordinance that was developed by FEMA), Door 2 (Confirming that local ordinances and regulations comply with the FEMA checklist), and Door 3 (Evaluating applications including habitat assessments on a permit-by-permit basis).

NMFS observes important differences between Doors 2 and 3. A parcel-by-parcel approach (Door 3) raises the challenge of addressing cumulative effects adequately. If any adverse effects were allowed at the site level it would be difficult to avoid adverse effects at the reach scale. In order to avoid unaccounted for incremental impacts, NMFS anticipates that habitat assessments will be *necessary for all* floodplain development permits in Door 3 communities and all individual permits in the protected area must specify how they avoid adverse effects. Because of the difficulties of addressing cumulative effects on a parcel-by-parcel basis, NMFS encourages FEMA to promote the use of the larger scale approaches contemplated by "Door 2".

Jurisdictions that adopt Door 2 may include prescribed habitat restoration activities to compensate for lost habitat function in the protected area, but must also evaluate effects of anticipated development at a landscape (reach) scale. Using this landscape approach to future development, it may be possible for a jurisdiction to prescribe actions that maintain, or enhance, fish functions, even while allowing limited development in the Protected Area. NMFS encourages FEMA to work with local jurisdictions to develop floodplain management programs that contribute to recovery of listed species; we are eager to assist FEMA with the evaluation of these proposals. A jurisdiction's submittal for Door 2 should address the anticipated impaired functions, as well as identified limiting factors, and describe how it intends to achieve the overall no adverse effect objectives, utilizing a technically credible system for assessing and quantifying habitat functions and values across the differing scales. The actions should be consistent with the elements and goals of the jurisdiction's recovery plan, designed to enhance juvenile to adult survival of affected listed populations, improve listed fish carrying capacity within the affected landscape, and/or improve productivity of affected listed fish populations.

***Riparian Buffers***

Riparian buffers provide numerous ecological functions along freshwater and marine shorelines. However, the appropriate width of a buffer to provide those functions has been controversial. The RPA's Riparian Buffer Zone (RBZ) corresponds to Washington State guidelines[2] and stream-type classifications. Appropriate RBZs can range from 150 to 250 feet on each side of a stream. In many jurisdictions, the currently prescribed riparian buffers are adopted under the Growth Management Act or Shoreline Management Act standards, and often are smaller buffers than specified by the RPA (i.e., the 150 to 250 ft. zone). Additionally, in many jurisdictions habitat features are degraded or absent in some or all of the landscape that the RBZ covers.

The RPA *does not* mandate a specific regulatory approach for protecting these habitat features, or even require a jurisdiction to expand its existing riparian buffer. Nor does the RPA require the removal of existing development in this zone. Rather, *the RPA standard is that any new floodplain development in the RBZ not cause adverse effects to existing habitat functions.*

---

[2] Knutson and Naef. 1997. Management Recommendations for Washington's Priority Habitats – Riparian. WDFW. Available: http://wdfw.wa.gov/publications/00029/wdfw00029.pdf

In a jurisdiction with a high level of urbanization, the remaining functions in a jurisdiction's RBZ may be only fish passage, flood storage, and the current water quality and water quantity levels. In this example, to meet the no adverse effect standard, the local jurisdiction may devise a locally tailored regulatory approach that (1) prevents further water quality and quantity impacts from stormwater runoff caused by new development, and (2) that retains flood storage and fish passage. Under the RPA, a local jurisdiction *does not* need to remove development that exists in the RBZ and replace it with vegetated buffers.

***Compensatory Storage***

Some development activities in the floodplain diminish flood storage capacity, which can have adverse effects to salmon seeking refuge during floods and increase potential flood damage to property. Thus, fill and other development should not occur in the Protected Area *unless* it has no adverse effect on existing habitat functions.

When development occurs in the remainder of the floodplain, the RPA provides for mitigation of adverse effects, including compensatory storage when flood storage is diminished by fill or other development. Many jurisdictions do not have a requirement to provide compensatory flood storage but they should adopt a compensatory storage requirement for both flood hazard management purposes, and to mitigate salmon-refuge impacts. The local compensatory storage requirements should include the following:

- Compensatory flood storage that occurs on-site must be designed to avoid trapping fish as floodwater recedes, and should be planted with native vegetation to provide fish habitat values.
- Off-site compensation is permissible if it is in the same hydraulic reach and provides equal or better habitat features than those being impacted. It is preferable that compensatory storage be provided in a floodplain restoration area identified in the salmon recovery plan.

In some floodplains (such as coastal floodplains) fill has a negligible effect on floodwater storage. In these instances, fill is unlikely to cause adverse effects and compensatory storage is not likely to be necessary.

***Low Density Development***

The RPA proposes maintaining low density of development within the 100-year floodplain (e.g., no denser than one house per 5-acre parcel). Low density development will reduce the potential damage to both property and floodplain habitat features and functions. If done properly, it can also help maintain flood storage and conveyance capacity. However, some jurisdictions already have floodplain development that exceeds this low-density target.

The RPA *does not mandate* that communities downzone where development in the floodplain already exceeds one house per 5 acres. However, to retain good floodplain function, they should refrain from zoning for higher density in the floodplain. Under the Growth Management Act frequently flooded areas are identified as critical areas, and local governments should have

strong protections for these critical areas in place, as they identify or revise their Urban Growth Areas (UGAs). Land use cases have shown that it is sometimes appropriate to maintain low-density zoning even though the landscape falls within a UGA. Maintaining low-density zoning in relatively undeveloped floodplains meets RPA expectations, and is consistent with GMA goals.

***Stormwater Management/Low Impact Development (LID)***

Good water quality is essential for all life stages of salmonids, and use of low impact development methods are critical for maintaining water quality. While infiltration is a preferred method of stormwater management, infiltration may not be feasible in communities where high groundwater levels are present, or soil conditions in the floodplain limit infiltration.

Communities can use other LID practices to maintain water quality where conditions do not support infiltration. These include, for example, rainwater collection and use, vegetation retention, and bioswales. Communities making their RPA compliance submittal should, if necessary, demonstrate that infiltration is impractical and that their stormwater practices are equivalent for achieving water quality goals.

***Channel Migration Zone***

The Channel Migration Zone (CMZ) is land adjacent to a river that can erode quickly, creating new river channels that provide high quality habitat for listed salmon species. Under the RPA, it is important to identify the extent of a river's CMZ because the Protected Area includes the CMZ plus 50 feet. The Washington State Department of Ecology's methodology is a preferred, but not required, approach for mapping the CMZ (Rapp and Abbe). Jurisdictions must use the best available science to identify the CMZ, and justify their mapping methods as scientifically sound.

Many jurisdictions lack the staffing and funding to complete these maps. In this situation, the mapped 100-year floodplain must be assumed to be coextensive with the CMZ until either another delineation of CMZs is conducted (such as site delineations that are recorded by the jurisdiction), or the community can demonstrate that there is no channel migration zone in their jurisdiction. Communities may:

- Use the Washington Department of Ecology's methodology to show that a stream is exempt from mapping a CMZ; or
- Use the Washington Department of Ecology's methodology to show that a channel is prevented from normal or historic migration by human-made or other shoreline modification as defined in WAC 173-26-221(3)(b).

A CMZ that extends outside the mapped 100-year floodplain exceeds the regulatory reach of the RPA and the NFIP. In this circumstance, a jurisdiction may choose not to regulate that portion of the CMZ and still be in compliance with the RPA.

***Choosing a Compliance Doorway***

Although some jurisdictions have chosen Doors 1 or 2, most jurisdictions are currently defaulting to Door 3. As noted above, NMFS strongly encourages FEMA to work with jurisdictions to develop a comprehensive Door 2 approach for RPA compliance rather than a project-by-project Door 3 compliance strategy. The traditional project-by-project strategy often fails to capture the full range of effects, allowing incremental, systemic loss of essential ecosystem features to occur. To avoid the slow and incremental cumulative losses, NMFS urges that among jurisdictions choosing Door 3 for compliance, that FEMA hold them to a strict standard, and that the jurisdictions demonstrate that each individual project will retain the full level of existing baseline function.

Where jurisdictions are defaulting to Door 3 as an interim status, we recommend that FEMA continue to encourage local governments work toward compliance through Door 2 as an approach that offers greater flexibility. Based on a jurisdiction-wide evaluation of habitat features, functions, and salmon habitat needs, Door 2 can incorporate recovery plan implementation and watershed-based determinations of impact avoidance, accommodating development, while retaining and improving habitat values for listed species.

***Monitoring and Mitigation to Meet the No Jeopardy Standard***

The RPA expects FEMA to document impacts to floodplain habitat that result from floodplain development activities. NMFS also recognizes the vital role of technically credible tracking, monitoring and evaluation methodologies to ensure that the implementation of the RPA is achieving the biological outcomes contemplated by it. Tracking and evaluating the effect on habitat functions when development occurs helps to ascertain which development types pose the greatest risk to salmon, and will suggest how to revise floodplain management standards for better protection of floodplain habitat functions. Unfortunately, the reporting from local governments has provided little information to inform FEMA's annual reporting.

A few changes to the Community Floodplain Development Permit Form and additional guidance to local governments would elicit much more accurate and useful information for determining RPA compliance. Helpful form changes include:

- A table that lists minor project types that don't affect listed species (e.g., interior or exterior alterations to existing structures that do not expand footprint or impervious surface),
- A brief description of the existing habitat conditions at the site (e.g., "undeveloped lot in new suburban neighborhood, cleared of trees"),
- A brief project description with adequate detail to determine the likely project effects (e.g., "add new bay to existing garage, plus driveway pad, plus sidewalk"),
- Specifying whether/what mitigation was included (for ESA or for other purposes).

Further guidance to the NFIP participating communities could be a brief fact sheet on natural and beneficial floodplain functions. It should include the following basic information:

- An undeveloped floodplain, when inundated, is likely to provide refuge for fish,

- An undeveloped floodplain when not inundated, is likely to provide hyporrheic recharge to streams,
- Removing native vegetation from floodplains typically reduces detrital food source for salmonids, alters stormwater flow and recharge patterns, and reduces long term sources of large woody debris,
- New development (e.g., buildings) in floodplains reduces available fish refugia, likely increases stormwater effects on the adjacent stream, and likely becomes a new source of pollutants (e.g., lawn chemicals, stored chemicals, road runoff, etc.).

NMFS was disappointed to note that in the 2010 annual report, the number of participating jurisdictions that provided information on floodplain development was very low. Several reporting jurisdictions indicated that they had issued no permits in the floodplain, which is valuable information for gauging preservation/loss of floodplain habitat. We urge you to encourage other jurisdictions to re-engage in this reporting component so that the future reports will provide more complete, and more useful, information.

We hope this letter provides the necessary clarifications to support communities as they strive to comply with the RPA. We will continue to work together with you and local governments to find practical approaches that will ensure necessary stewardship of listed species and their habitats. Your partnership in promoting safe and healthy floodplains in all of our Puget Sound NFIP communities is critical and we appreciate your steadfast work as we move forward with implementation.

Sincerely,

William W. Stelle, Jr.
Regional Administrator