

Responses to Comments

Draft Guidance on Wetland Mitigation in Washington State

Part 1: Laws, Rules, Policies, and Guidance Related to Wetland Mitigation

Part 2: Guidelines for Developing Wetland Mitigation Plans and Proposals



Washington State Department of Ecology
U.S. Army Corps of Engineers, Seattle District
U.S. Environmental Protection Agency, Region 10

February 2006
Ecology Publication # 06-06-012

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Refer to Publication #06-06-012.

Draft documents

For the Draft *Guidance on Wetland Mitigation in Washington State – Part 1: Laws, Rules, Policies, and Guidance Related to Wetland Mitigation* refer to Publication #04-06-013a.

For the Draft *Guidance on Wetland Mitigation in Washington State – Part 2: Guidelines for Developing Wetland Mitigation Plans and Proposals* refer to Publication #04-06-013b.

Final documents (Version 1)

For *Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance* (Version 1), which replaces Part 1 above, refer to Publication #06-06-011a.

For *Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans* (Version 1), which replaces Part 2 above, refer to Publication #06-06-011b.

All of the documents can be found on-line at <http://www.ecy.wa.gov/programs/sea/wet-updatedocs.htm>.

Published by the Department of Ecology's Shorelands and Environmental Assistance Program, P.O. Box 47600, Olympia, WA 98504-7600. If you have special accommodation needs or require this publication in an alternate format, please contact Tim Schlender at 360-407-6096 (Voice) or TTY (for the speech or hearing impaired) at 711 or 800-833-6388. For more information contact Dana L. Mock at 360-407-6947, e-mail: dmoc461@ecy.wa.gov.

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Introduction

This document contains all of the comments that the agencies received during the public review period (see Appendix B, *Special Public Notices*). Anyone who wanted to review the document was encouraged to do so. During the public review of the draft of *Guidance on Wetland Mitigation in Washington State* (Parts 1 and 2) thirteen individuals and organizations provided comments, suggestions, and materials. A list of the reviewers is provided in Appendix A. An additional twelve individuals and organizations provided written input during pre-draft focus group meetings, an on-line comment form, etc. Their comments do not appear in this document.

The comments received are provided in the following pages and are organized first by general comments (G.1, G.2, etc.) then sequentially by page (P.1, P.2, P.3, etc.). Comments that were made by several reviewers from the same organization are denoted with a double asterisk (**). Comments that a reviewer wanted to emphasize are underlined. For each comment submitted, the agencies prepared the response that follows each comment.

Comments and responses on Part 1 - *Laws, Rules, Policies, and Guidance Related to Wetland Mitigation* (Publication #04-06-013a) appear first, followed by comments and responses on Part 2 - *Guidelines for Developing Wetland Mitigation Plans and Proposals* (Publication #04-06-013b).

Revised documents

Note that the updated documents have different titles than the draft documents. The updated documents are as follows:

Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (Version 1, Publication #06-06-011a)

Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Version 1, Publication #06-06-011b).

All documents can be found on-line at <http://www.ecy.wa.gov/programs/sea/wet-updatedocs.htm>.

Comments and Responses on Part 1

General Comments

G.1 Comment: I suggest a numbered format be used for the major headings in this document. Numbered headings would improve the end-users ability to find information and use the document as a reference.

Response: Agreed. The document has been reorganized using a numbered format for the chapters (1, 1.1, 1.2, 1.1.1, 2). Also see Comments G.18 and G.22.

G.2 Comment: One of the key changes in mitigation policy that has occurred in recent years is the adoption of a MOA signed by key federal agencies involved in natural resource protection. The agencies, USEPA, USACOE, USDA, USF&WS, FAA and USAF, have agreed to reduce wetlands around airports that could attract hazardous species of wildlife. To facilitate a clear understanding of the intent of the MOA and the change in federal wetland policy for airports, three additions should be considered:

- a. At a minimum, the link below should be referenced in your documents and the committee should add a section on the current policy and changes for facilities associated with aviation. We have attached a hard copy of the MOA for your convenience. http://wildlife-mitigation.tc.faa.gov/public_html/moa.pdf
- b. The entire MOA should be an official appendix for this guidance document.
- c. A local (state) version of this MOA should be implemented. The local (Seattle) district offices of USACOE, USF&WS, USEPA, and FAA along with WDOE, & WDFW should enter into a statewide MOA that mimics the National policy document.

Response: Also see Comment P.38. a. A link to the MOA (and circular) and a description of it have been added to the document. A discussion of the FAA MOA can be found in Chapter 6 (Choosing a Location) and in Appendix E (Laws, Rules, Policies, and Guidance). It will also be discussed in Part 2 (Site selection).

b. We did not provide the entire MOA as an appendix to the document. If this one was included all of the others would have to be included as well. The link has been included so that readers can access the document.

c. Creating a local (state) version of the MOA is beyond the scope of this project.

G.3 Comment: The term “basin” is identified as a factor for siting and evaluating mitigation projects. This term is ambiguous, and not defined in the document. The revised document should define “basin” to be synonymous with “WRIA”, or at a minimum, in a manner that mitigation activities performed in compliance with RCW 90.74 – Aquatic Resources Mitigation Act, RCW 90.84- Mitigation Banking, and RCW 75.46-Salmon Recovery Act are acceptable mitigation per this new mitigation guidance.

Response: The document will define the terms “basin (sub-basin)” and “watershed” to be consistent with *Wetlands in Washington State – Volume 1: A Synthesis of the Science* (Sheldon et al. 2005). We will also note that the appropriate scale for projects will vary based on the purpose, proposed functions and wetlands provided, condition of the watershed, and the types of impacts being compensated. However, for the purposes of this document, watershed will be defined as a geographic area of land bounded by topographic high points in which water drains to a common destination. Sub-basin will be defined as a smaller drainage basin that is part of a larger drainage basin or watershed. For example, the watershed of a large river may be composed of several subbasins, one for each of the river’s tributaries. Definitions for watershed and sub-basin will appear in the text in Section 6.3.1.2, *Considerations for Choosing a Location*, and in the Glossary. See also Comment P.39, P.47, P.48, P.201.

The guidance will be consistent with RCW 90.74, “The departments of ecology and fish and wildlife may not limit the scope of options in a mitigation plan to areas on or near the project site, or to habitat types of the same type as contained on the project site. The departments of ecology and fish and wildlife shall fully review and give due consideration to compensatory mitigation proposals that improve the overall biological functions and values of the watershed or bay and accommodate the mitigation needs of infrastructure development.” In addition, the guidance will be consistent with RCW 90.84 by approving the use of credits from a bank when: (1) The credits represent the creation, restoration, or enhancement of wetlands of like kind and in close proximity when estuarine wetlands are being mitigated; (2) There is no practicable opportunity for on-site compensation; or (3) Use of credits from a bank is environmentally preferable to on-site compensation.

Consistency with the Salmon Recovery Act (RCW 77.85) is beyond the scope of this document (however, we believe that this guidance will not be inconsistent with this act). Impacts to salmonids and their habitat and any impact reduction measures (e.g. mitigation) necessary to protect salmonids and their habitat will be covered under Section 7 of the federal Endangered Species Act (16 USC 1531 et seq.). Projects that will impact salmonids and/or their habitat will be reviewed on a case by case basis, and it is beyond the scope of this document to attempt to provide guidance on what the US Fish and Wildlife Service or NOAA Fisheries will require.

G.4 Comment: **[The commenter] recommends that the Corps and Ecology include in the joint guidance a provision that specifies the circumstances under which the Corps and Ecology might enter into a “special agreement” (i.e., memorandum of agreement) with a public agency pertaining to wetland mitigation. For instance, if a public agency could demonstrate that it possesses a comprehensive and highly competent wetland mitigation program and could show a high level of success in the creation, restoration, and enhancement of wetlands, a special agreement with the Corps and Ecology would allow for lower mitigation ratios than those presented in the draft guidance. This provision in the guidance would provide an important incentive for public agencies to achieve higher levels of success that they otherwise might.

Response: A discussion of this topic is beyond the scope of this project. As currently written, there is nothing in the document that prohibits a “special agreement” (i.e., memorandum of agreement) with a public agency.

G.5 Comment: Page 89 & throughout Part 1: There still remains some internal contradiction between in-kind and landscape/watershed approach that is not effectively resolved by this document. It remains unclear when one should select a site using the landscape/watershed approach. For example Page 89 of Part I of the Guidance includes a statement that out-of-kind mitigation may

be allowed when “It is not possible to replace the wetland type in-kind.” Restricting the use of out-of-kind mitigation (landscape/watershed approach) only when in-kind is not possible. However, on the same page under “Guidance for deciding on whether to mitigate in-kind or out-of-kind,” the Guidance document favors out-of-kind mitigation if it is determined that in-kind replacement is not necessary. “Is not possible” is distinctly different than “is not necessary.” In addition, in Part II, the Mitigation Plan contents do not include important sections necessary for the landscape/watershed approach, such as sections on limiting habitats in the watershed.

Response: One should select a site using the landscape approach whenever possible. This is discussed in the section on choosing a location in Chapter 6. We encourage applicants to use available information on the landscape and larger-scale environmental processes when selecting and designing mitigation sites. However, selecting a site using the landscape/watershed approach is a somewhat different issue from determining whether in-kind or out-of-kind compensation is preferable (i.e., out-of-kind mitigation does not equal landscape/watershed approach). When determining if in-kind or out-of-kind mitigation is appropriate the agencies consider what will provide the greatest ecological benefit for the landscape/watershed.

The section on in-kind/out-of-kind mitigation has been reorganized and revised. Text has been added to clarify what the agencies mean by “is not necessary” and “not possible.” In-kind replacement is not “necessary” if the affected wetland type and its associated functions are relatively abundant in the watershed, whereas other types/functions are relatively rare or limited due to historic losses. Therefore, out-of-kind compensation would be considered if the affected functions were not limited in the watershed.

It would not be “possible” to replace certain wetland types in-kind (in this case avoidance would be preferred first). For example, coastal lagoons and bogs are considered irreplaceable wetlands because they perform some special functions that have not proven to be successfully replaced through compensatory mitigation. Impacts to such wetlands would therefore result in a net loss of some functions no matter what kind of compensation is proposed. It is recommended that compensation for unavoidable impacts to these types of wetlands should involve rehabilitation of degraded wetlands of a similar type. Where rehabilitation is not an available option out-of-kind compensation may be considered.

G.6 Comment: Overall, the guidance is very well constructed and shows careful consideration to address many of the challenges faced by traditional mitigation in the past. It is our hope that Ecology’s efforts are successful in providing clearer instructions and expectations for both the regulatory and regulated communities.

It is for the purpose of providing clarity for both regulatory agencies, as well as applicants, that we offer our comments to the proposed guidance. While we appreciate that many of the “non-traditional tools in the mitigation toolbox” (such as mitigation banks and in-lieu-fee arrangements) are still evolving within a regulatory context, we encourage you to remain flexible in your application of these methods and consider the comments contained herein as you finalize the subject guidance. It is our hope that Ecology will address these comments by either incorporating additional language into the final guidance document to account for applications for use of these methods and/or that Ecology will issue equally clear guidance on an applicant’s ability to propose use of non-traditional mitigation practices as programs become finalized and are implemented. Our comments are as follows:

There is a great deal of concern on the part of mitigation bankers about “competing programs” like in-lieu-fees, and Programmatic Mitigation Area programs (see pages 100-102).

Specifically, given the fact that entrepreneurial mitigation banks, by their “advance compensatory” nature, require substantial financial commitments long before mitigation credits are able to be sold for use, the existence of “competing programs” that may be both sponsored and operated by regulatory agencies which also have discretion and authority to direct permit applicants to a particular program (like an in-lieu-fee or Programmatic Mitigation Area program) have the potential to constitute unfair competition. In fact, in 2000 the National Mitigation Banking Association lobbied and worked with the Army Corps of Engineers to issue a Regulatory Guidance Letter on the use of in-lieu-fee arrangements; and, in particular, to prioritize the use of mitigation banks over in-lieu-fee arrangements given the potential for an “un-level playing field.” (See: “Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation Under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act: 65 Fed. Reg. 66914-17, November 7, 2000).

Response: Comment noted. The revised document discusses mitigation banks and in-lieu fees in Section 4.2, *Programmatic Compensatory Mitigation*. The section on mitigation banking, 4.2.2, has been expanded. It is consistent with the 1995 federal guidance on wetland mitigation banking (described in Appendix E) and the state law (RCW 90.84) and pilot rule (also described in Appendix E).

Section 4.2.3, In-lieu Fees, is consistent with the 2000 federal guidance on the use of in-lieu fee arrangements (described in Appendix E). In Section 4.2.3.2 there is a list of factors used to determine when ILF mitigation may be appropriate, and the second bullet states, “practicable opportunities to conduct appropriate project-specific mitigation or purchase credits from an approved mitigation are not available.” In addition, a discussion of the difference between mitigation banking and in-lieu fees has been added to Section 4.2.3.2, which concluded with, “Because of these differences between mitigation banking and ILFs, the agencies prefer the use of mitigation banks.”

G.7 Comment: The first issue relates to WDNR’s authority and management responsibility. While WDNR does not have a regulatory role in compensatory mitigation, its proprietary interests and management authority must be considered when the impacting project or the compensation is proposed on, or affects, state-owned aquatic lands. Acknowledgement of this management role throughout the Draft Guidance will allow WDNR to participate in such projects in a timely manner and will also make tremendous strides toward developing a cooperative approach to the management of the state’s natural resources.

Response: WDNR’s authority and management responsibility have been added throughout the document, where appropriate. In addition, the need for authorization to use state-owned aquatic lands has been added to Part 2 in Section 3.3.2.2, *Site Ownership and Legal Mechanisms for Long-term Protection*. See responses to Comments P.2, P.23 and P.59 for specifics.

G.8 Comment: The second issue relates to the emphasis on “freshwater wetlands” rather than aquatic resources. The Draft Guidance presents the caveat that although the focus of the guidance is intended for freshwater wetlands it applies equally to other aquatic resources. Unfortunately the caveat and later references to freshwater wetlands de-emphasizes the role of other aquatic resources in compensatory mitigation. In a time when significant development impacts riverine, estuarine, and lentic environments, the Draft Guidance should offer equal emphasis on all aquatic resources. Please consider replacing, where appropriate, the terms “wetlands” and “freshwater wetlands” with “aquatic resources.” This relatively minor change will assist the state in applying forward thinking guidance to benefit the state’s aquatic resources.

Response: It is beyond the scope of this project to replace the terms "wetlands" and "freshwater wetlands" with "aquatic resources." This would require a discussion of numerous other issues. In the Section 1.3, *Purpose of the Document*, a text box has been added which states, "While both parts of this guidance focus on freshwater wetlands, some of the topics (such as the basic requirements for a mitigation project, mitigation sequencing, and compensating for area and functions) are relevant to estuarine and tidal wetlands. The guidance can apply generally to federal regulation of other aquatic resources, such as streams and upland buffers associated with these resources." The document concepts are still relevant to other aquatic resources; however, the purpose of the document is to focus on wetland permitting. Section 7.1, *Compensatory Mitigation and Other Aquatic Resources*, has also been added to provide links and references to information on other aquatic resources. See also Comments P.3 and P.4.

G.9 Comment: The *National Wetlands Mitigation Action Plan* (December 24, 2002) (cited on p. 21-22) clarifies mitigation policy regarding the use of preservation and vegetated buffers as mitigation.

Response: No change to text required. Yes, in the revised text a link to the *Federal Guidance on the Use of Preservation as Compensatory Mitigation Under Section 404 of the Clean Water Act* is located in a text box at the end of Section 6.4.2.2. See the National Wetlands Mitigation Action Plan for the status of other action items (<http://www.mitigationactionplan.gov/index.html>).

G.10 Comment: *The Guidelines for Implementation of Compensatory Mitigation Requirements for Conversion of Wetlands to Cranberry Bogs* (1998) allows for the preservation of mature forested and scrub shrub wetlands as compensation for the conversion of bogs to cranberry production.

Response: No change to text required. The comment is just reiterating text from the document.

G.11 Comment: We do think that the guidance as is will be confusing, especially to the regulated community, because the document is largely written from an insider's point of view. The text presumes that that reader already knows the policy debates that came before and will therefore see this document in that light. One such debate is on-site versus off-site mitigation. Much of the background discussion could be dealt with in an Appendix.

Response: To summarize all of the policy debates of the past is beyond the scope of this project. The goal of this document is to outline and explain the current regulatory requirements on compensatory mitigation. It is the culmination of all of the past debates. However, a brief background Section (6.3.1.1) has been added to the revised document.

G. 12 Comment: A suggestion would be to highlight up front the important planning and policy issues such as those briefly mentioned on Page 20 Federal Guidance for the Establishment, Use and Operation of Mitigation banks as well as the key changes or new ideas set forth in this document. In this way, some of the implicit ideas will become explicit and more easily understood.

Response: We agree. The revised document begins with *Key Messages* (p.ix), which explicitly states both the new ideas (e.g., considering the landscape position of the wetland, focusing on restoration of environmental processes) and critical information (e.g., need for mitigation sequencing, consulting with agencies early in the process). In addition, Section 1.4, *Changes in Wetland Mitigation*, discusses some of the advances and policy changes that have occurred since the publication of the 1994 mitigation guidance.

G.13 Comment: There is a general lack of discussing the connection between the hydrology and wetland: establishment, re-establishment, rehabilitation, or enhancement in this document. We have all been working for the past five or more years towards getting people to evaluate the past, current, and projected hydrologic regime in order to better match their designs to the hydrology and this document is the very best opportunity we have to get practitioners to do this crucial step. Not only should this be mentioned more prominently in the document, but it should be incorporated in emphasis so people understand how crucial it is to evaluate hydrology in any (even the smallest) mitigation designs. Please, if you consider any comments at all in your revision, include this. Sarah Cooke is willing to help develop this part of the document.

Response: We agree. The importance of an adequate and sustainable water source has been incorporated throughout the revised document, beginning with the “Key Messages” (p.x). Section 2.2, *The Importance of Water*, has been added to provide a brief introduction. Also, a box has been added to Section 5.2.2, Creation (Establishment) emphasizing, “Landscape position and proximity to a reliable water source are critical for the successful creation of wetlands.” In addition, discussion of an appropriate landscape position and focusing on environmental processes, which are related to a sustainable water source, have been added throughout the revised document. See *Wetland Mitigation in Washington State Part 2*, for a more extensive discussion of hydrologic considerations involved in selecting and designing a mitigation site.

G.14 Comment: We also find a permissive tone that could lead the regulated community to think that certain directives are optional when they are not. In our view clarity is more important than a misplaced effort to soften the blow of wetland regulations with words such as “may” and “encouraged”. In some instances, ambiguous statements are made and then clarified with caveats in following sentences.

Response: No change to text required. This document is guidance (not rule or requirement) and therefore, flexibility is necessary because so many decisions are project and site specific, reflecting the diversity of landscapes and functions.

We cannot address the last part of the comment without more specific examples of what ambiguous statements were made.

G.15 Comment: The document is long and it is clear that it was authored by multiple people. There is a considerable amount of redundancy. A technical editor familiar with mitigation concepts could likely put the document in one voice and tighten it up. There are also many blank or half-empty pages (iv, vi, 1, 2, 3, 8, 18, 24, 26, 32, 34, 40, 86, 105, 106, 109, 110, that can be deleted and tightened up.

Response: The document has been substantially revised, and we believe it is more understandable and reader friendly. However, white space and section breaks remain. White space throughout a document promotes easier readability and less eye fatigue. The goal of this document is to be readable and understandable, not as short as possible.

G.16 Comment: Generally, use of a landscape-based approach to replace both wetland area loss (sq. ft.) and appropriate wetland functions are a viable alternative to traditional in-kind wetland compensatory mitigation. Application of this alternative should be applied on a case-by-case basis. [The commenter] does not support application of this approach when it can result in the net loss of wetlands area (sq. ft.).

Response: No change to text required. In general, permit decisions are made on a case-by-case basis, thereby providing agencies the flexibility needed to allow for compensation that results in the most ecological benefit. There may be instances where permit decisions do not meet the “no overall net loss of wetlands” goal because compensatory mitigation would be impracticable, or would only achieve inconsequential reductions in impacts, or where wetland functions can clearly be replaced without the corresponding acreage. For example, impacts to a small Category IV wetland that is providing minimal habitat and water quality functions may be compensated for through over-engineering the stormwater treatment system to replace the water quality functions and the enhancement of vegetation structure in an existing degraded wetland to replace the habitat functions.

The Corps RGL 02-02 also states that “no overall net loss of wetlands goal” may not be achieved for each and every permit action, although all Districts will strive to achieve this goal on a cumulative basis, and the Corps will achieve the goal programmatically. It also states, “For wetlands, the objective is to provide, at a minimum, one-to-one functional replacement, i.e., no net loss of functions, with an adequate margin of safety to reflect anticipated success. Focusing on the replacement of the functions provided by a wetland, rather than only calculation of acreage impacted or restored, will in most cases provide a more accurate and effective way to achieve the environmental performance objectives of the no net loss policy. In some cases, replacing the functions provided by one wetland area can be achieved by another, smaller wetland; in other cases, a larger replacement wetland may be needed to replace the functions of the wetland impacted by development. Thus, for example, on an acreage basis, the ratio should be greater than one-to-one where the impacted functions are demonstrably high and the replacement wetlands are of lower function. Conversely, the ratio may be less than one-to-one where the functions associated with the area being impacted are demonstrably low and the replacement wetlands are of higher function.”

While Corps districts are not required to provide a one-for-one replacement for impacted acreage for each individual project, they must meet or exceed that goal for their entire program. This allows districts to make more flexible decisions to issue timely permits while ensuring protection of the aquatic ecosystem on a watershed basis (from News Release for NWP 2002).

Also, the Conservation Foundation (1988) stated that the interim goal to achieve no overall net loss of the nation’s remaining wetlands base and the long-term goal to increase the quantity and quality of the nation’s wetland base does not imply that the no-net-loss standard should be applied on an individual permit basis.

G.17a Comment: The discussion of wetlands as part of the landscape should include an explanation of why certain wetlands are irreplaceable. For example on Page 27 you state “individual decision-making focused on the site level often conflicts with the landscape approach to resource management.”

Response: The section on landscape-based approach to mitigation has been removed. A text box has been added to the revised document at the end of Section 3.5.1, *Mitigation Sequencing*, with links to the *Federal Guidance on Protection and Mitigation of Difficult to Replace Aquatic Resources Under Section 404 of the Clean Water Act*. In Washington “irreplaceable wetlands” are identified in Table 1a and 1b (see footnotes 23 and 25).

G.17b Comment: Also, place additional importance on the final statement about the NRC report (page 29) “the most ecologically beneficial alternative should be given preference.”

Response: The section on landscape-based approach to mitigation has been removed. In the revised document, the statement above is in a paragraph, *On-Site Mitigation Isn't Always the Best Choice*, in the *Key Messages* section. In addition, Section 6.3.1.1 discusses some of the finding of the 2001 National Research Council study regarding location of mitigation sites.

G.17c Comment: More links to the watershed planning efforts through the state would be helpful especially a list of watershed coordinators.

Response: Providing more links to watershed planning efforts is beyond the scope of this project. In addition watershed coordinators are likely to change over time and would need to be frequently updated. See the response to Comment P.214.

G.17d Comment: It appears that elsewhere it is suggested that out of watershed compensation is a good option. How does this recommendation comport with the watershed, which is losing wetland resources?

Response: In the revised document, Section 6.3.1.2, *Considerations for Choosing a Location*, discusses the preference for where wetland compensation should be located. The revised guidance document does not suggest that out-of-watershed-compensation is a “good option.” The revised document does provide the following guidance, “Off-site compensation must usually be located in the same watershed as the site experiencing the impact. However, occasionally the agencies may agree to compensation outside of the watershed for minor impacts. Considerations include: whether the impact site is located near the boundary of the watershed and suitable sites for compensation are not located in the watershed; whether the geology, topography, plant communities, and climate are similar between watersheds.”

G.18 Comment: Don't forget to renumber pages with chapter number and page number for updates.

Response: The document has been reorganized using a numbered format for the chapters (1, 1.1, 1.2, 1.1.1, 2). Also, see Comments G.1 and G.22.

G.19 Comment: Just a comment on your wetlands policy. I would hope that as you are creating a policy for wetlands that you would take into consideration ways to prevent mosquito breeding. You will need a source of water for your wetland, but it needs to be flushed often or moving. Stagnant water will create a mosquito problem that could cause an undo problem. The American Mosquito Control Association has information on creating Wetlands with regards to mosquitoes that could be helpful.

Response: An appendix has been added to Part 2, *Mosquitoes and Wetlands*. This appendix contains the latest information on mosquito control and the effect of hydroperiod on mosquito populations. The appendix also contains links to other information on mosquitoes.

G.20 Comment: BPA occasionally needs to provide compensatory mitigation for its transmission construction and maintenance activities. BPA transmission lines are usually located on easements, not fee-owned land; this leads to some unique problems in conducting on-site wetland mitigation. A list of reasons why on-site mitigation is usually not feasible for impacts resulting from transmission line activities include:

- Landowners are often reluctant to allow BPA to conduct mitigation on-site and often will not agree to allow mitigation, as this is not included in our easement agreements.

- Ongoing maintenance of transmission facilities and requirements to require unwanted vegetation can make it difficult to ensure that mitigation areas will not be affected. Access is needed to transmission towers at all times, but especially during outage emergencies. The outages often occur when the ground is snow-covered, making it difficult to see mitigation area boundaries.
- Line rebuilds and upgrades or emergency maintenance actions are needed periodically and it may be difficult or impossible to position structures and other transmission line components outside of mitigation areas.
- Some of our easements are quite narrow (50 feet or wider) and there are limited opportunities to move transmission line components within the linear right-of-way while maintaining adequate clearance to safely operate transmission lines.
- Shifting transmission line components to avoid mitigation areas could result in impacts to other sensitive natural resources, such as streams or important wildlife habitat.
- Wetlands can attract waterfowl and other birds that can be injured by flying into transmission lines during low visibility conditions."

For these reasons it is usually unacceptable to site wetland mitigation areas within existing transmission line rights of way, except under unusual circumstances. In most cases when mitigation is required, BPA prefers an in-lieu payment option rather than having to acquire, create, restore, or enhance, then monitor, and manage mitigation areas. BPA is not a land management agency. There are other agencies and entities that are better able to do this type of work because they have trained, experienced staff and can provide ongoing management and oversight to lands dedicated to mitigation. [The commenter] believe[s] this approach (allowing and even encouraging mitigation that is not in-kind and not on-site) is consistent with the directive for innovative mitigation provided by the State Aquatic Resources Mitigation Act (Chapter 90.74 RCW)

BPA's transmission line rights-of-way (ROW) are also sometimes viewed by developers and others as potential wetland mitigation sites. This presents many of the same issues listed above. Requests for such type of use on BPA ROWs are normally denied because of conflicts those uses present for safe transmission line operation and maintenance.

Response: Comment noted. No change to text required. Refer to Chapter 4, *Approaches to Compensatory Mitigation*, in the revised document for discussions of compensation options other than concurrent and on-site.

G.21 Comment: Overall the document presents a very good accumulation of information on wetlands, their values, regulations, existing policies, wetland permitting, considerations for mitigating, and so on. There is a wealth of relevant guidance on mitigating wetland losses. However, because of its broad extent of information provided in this draft, we believe it may be very helpful to the reader if a synthesis of the information were also prepared that would assist the reader/practitioner to utilize the guidance more effectively. We suggest that the principle agencies consider developing some kind of visual summary of the key steps and points.

Response: We agree. The revised guidance contains a summary of the key points at the beginning of the document (*Key Messages*). A visual summary (flow chart), however, proved impossible for three main reasons: 1) because the regulatory process is frequently being revised (streamlining); 2) encompassing all the elements resulted in a flowchart that was too complicated to follow; 3) a simplified, easy to read flowchart omitted so many specifics that it

was not helpful. Chapter 3 of the revised document provides an overview of the wetland regulatory process, and at the end of Section 3.4.1, *Applying for Permits*, is a text box with a description of and links to the Office of Regulatory Assistance. Also see Comment P.57.

G.22 Comment: Relative to document organization, we suggest numbering the major headings and subheadings, which would improve tracking and referencing of relevant titles and headings.

Response: The document has been reorganized using a numbered format for the chapters (1, 1.1, 1.2, 1.1.1, 2). Also, see Comments G.1 and G.18.

G. 23 Comment: In Part I you mention that rehabilitation and enhancement are not separated by a distinct line. For this reason, we believe that creating a distinction between the two will just lead to confusion and possibly be contentious. An effort to simplify the process to retaining a single category, restoration, would be helpful. The lower of the two mitigation ratios should be used.

Response: No change to text required. We agree that there will be some confusion as agency staff and applicants get used to the new terminology. However, for consistency, Ecology has started using the Corps of Engineers definitions of the types of compensatory mitigation, as defined in RGL 02-02. In the letter the Corps redefined the basic types of compensatory mitigation based on the type of activity and whether the compensation will result in net gains in acres and/or functions. As stated in the document, rehabilitation and enhancement actions exist on a continuum. We feel that it is important to provide a discussion of that continuum in order to articulate what would be considered more effective actions (e.g., restoring environmental processes at an existing wetland) and less effective actions (e.g. provide gains in one or a few functions). Appendix H and Tables H-1 and H-2 help to provide some examples of actions that would be considered for each. The ratios identified in Chapter 6, Tables 1a and 1b provide a starting point. Ratios may be negotiated up or down on a case-by-case basis, depending on wetland impacts and what is being proposed for compensation. Also see Comment P.74, P.93.

G.24 Comment: Is there a diminimus impact below which compensatory mitigation is not required? This information was not readily found.

Response: In the revised document, Section 3.4, *What Regulations Apply?*, contains the following language, “Some types of wetlands or wetlands of a certain size are specifically exempted under some laws.... It is important to determine whether and how a wetland is subject to each law that applies. The best way to do this is to consult with the appropriate agency. ”

“[T]here is no scientific basis for exempting wetland impacts under any particular size without an analysis of the cumulative effects of the exemption” (from *Wetlands in Washington State - Volume 2: Guidance for Protecting and Managing Wetlands*, Granger et al. 2005). State and federal regulations do not set a diminimus impact below which compensatory mitigation is not required. The goal is no net loss at a programmatic level. The agencies often have to set a diminimus impact for administrative purposes and to avoid regulatory overlap with local governments looking at smaller impacts. This is not discussed in the document because of frequent changes in that administrative threshold, permits conditions, and regulatory requirements. The revised document frequently suggests that applicants check with agency staff with any questions regarding wetland impacts and mitigation.

Page by Page Comments

Page i

P.1 Comment: The last sentence in the first paragraph is too vague. If you are going to make this comment, you should be specific about changes.

Response: The guidance document has been revised and re-organized. This statement regarding enhancement has been clarified in the *Key Messages* (p. x), “Applicants should strive to compensate for wetland area and/or functions through re-establishment, rehabilitation, or creation before considering the use of enhancement or preservation.” See response to Comment G.12.

Page ii

P.2 Comment: Paragraph 1: One of the stated goals is for the Draft Guidance to improve the quality and effectiveness of compensatory mitigation. One way to help achieve that goal is to include the Washington State Department of Natural Resource’s (WDNR’s) role in the management of state-owned aquatic lands throughout the compensatory mitigation process. There are other sections throughout the Draft Guidance that would benefit from the inclusion of WDNR’s responsibility.

Response: We agree. In Chapter 3, which explains the wetland regulatory process, the role of WDNR is described and web-links provided to the Aquatic Lands Program in Section 3.4.2, *The Role of Other State Agencies*. Also, the need for authorization to use state-owned aquatic lands is described in a box in Section 6.3.1, *Choosing the Location*. Descriptions of the Aquatic Lands Act and Aquatic Resources Mitigation Act are included in Appendix E - *Laws, Rules, Policies, and Guidance*. In addition, the need for authorization to use state-owned aquatic lands has been added to Part 2 in Section 3.3.2.2, *Site Ownership and Legal Mechanisms for Long-term Protection*. See also Comments G.7, P.23, and P.59.

P.3 Comment: Paragraph 6: The Draft Guidance focuses on freshwater wetlands, although this paragraph recognizes that the guidance is applicable to other aquatic resources. This focus on freshwater wetlands should be reconsidered. The Draft Guidance frequently discusses situations pertaining to estuarine habitat, riverine areas, and other aquatic resources, which confuses the issue of what is being considered as a “freshwater wetland.”

Response: In the Section 1.3, *Purpose of the Document*, a text box has been added which states, “While both parts of this guidance focus on freshwater wetlands, some of the topics (such as the basic requirements for a mitigation project, mitigation sequencing, and compensating for area and functions) are relevant to estuarine and tidal wetlands. The guidance can apply generally to federal regulation of other *aquatic resources*, such as streams and upland buffers associated with these resources.” The document concepts are still relevant to other aquatic resources; however, the purpose of the document is to focus on wetland permitting.

P.4 Comment: Further, Section 404 of the Clean Water Act applies to all waters of the United States, while Washington State laws apply to all waters of the state. Therefore, this exclusive focus on freshwater wetlands makes an unnecessary distinction between wetlands and other aquatic resources. Instead, the Draft Guidance should apply to all aquatic resources, which for the most

part would simply necessitate replacing the word “wetlands” with “aquatic resources.” Such a change would help to alleviate the long enduring confusion regarding the difference between wetlands and other aquatic resources. See also: page 27, last paragraph, and page 39, first paragraph for the inclusion all aquatic resources, not just wetlands.

Response: We disagree. Aquatic resource is not the same as wetland – wetlands are a subset of aquatic resources. It is beyond the scope of this project to replace the terms "wetlands" and "freshwater wetlands" with "aquatic resources." This would require a discussion of numerous other issues. Section 7.1, *Compensatory Mitigation and Other Aquatic Resources*, provides links and references to information on other aquatic resources.

Information on landscape position has been revised with Section 2.3, *Wetlands as Part of the Landscape*, and incorporated into the discussion of numerous other aspects of compensatory mitigation.

Section 3.6, *What type of impact are you proposing?*, is intended to be specific to the variety of wetland impacts defined in that section. See Comments G.8 and P.3.

P.5 Comment: The bullet ‘provide guidance on compensatory mitigation that is consistent with BAS’ should be the first bullet as this is the priority goal

Response: No change to text made. The list is not in priority order. The first bullet, “Improve the quality and effectiveness of compensatory mitigation in Washington State” is just as important as providing guidance on compensatory mitigation that is based on BAS. In the revised document the bulleted list appears in Section 1.3, *Purpose of the Document*.

P.6 Comment: Second bullet from bottom of page: Consider including a reference to an explanation of “on-site and in-kind” mitigation here.

Response: A reference has been added to Section 6.3, *Choosing the Location and Type of Compensatory Mitigation*.

Page 3

P.7 Comment: Paragraph 1: To more fully account for the regulatory responsibilities incumbent upon project proponents, the second sentence should be modified to read, “Thus, it is a good idea to identify any environmental permits, licenses, *approvals, or authorizations...*”

Response: This section has been revised and incorporated in to Section 3.4, *What Regulations Apply?* The sentence the comment refers to was cut from the text. Section 3.4.1, *Applying for Permits*, discusses this topic.

P.8 Comment: Paragraph 1, Sentence 2: Add in “prior to or early in the planning process” (its not just a good idea...its necessary! The way it reads doesn’t convey that)

Response: This section has been revised and incorporated in to Section 3.4, *What Regulations Apply?* We emphasize throughout the document that it is important to consult with the agencies early in the planning process.

P.9 Comment: Paragraph 3: Suggest adding a sentence “Not all wetlands are regulated, and wetlands may also be regulated differently by different agencies.” at the start of the paragraph

Response: This section has been revised and incorporated in to Section 3.4, *What Regulations Apply?* The following text addresses this comment: “Some wetland types or sizes are specifically exempted under certain laws. It is important to determine whether and how a wetland is subject to any laws. The best way to do this is to consult with the appropriate agency...”

Page 5

P.10 Comment: Paragraph 1, Line 4: Do you have a wetland present? add: “These are jurisdictional wetlands.”

Response: This section has been revised. The sentence on line 4 that this comment is referring to was cut from the text. Refer to Section 3.2 for the revised text.

P.11 Comment: Paragraph 1, Line 4: In the same line, delete “may”.

Response: This section has been revised. The word “may” was deleted. Refer to Section 3.2 for the revised text.

P.12 Comment: Paragraph 3, Line 4: examples of cases that meet technical criteria and are not regulated should be given.

Response: The entire section on “Do you have a wetland present?” has been revised and incorporated in to Section 3.2, *Do You Have a Wetland Present?* and Section 3.3, *What Type and Size of Wetlands Are Present?* In some cases particular types of wetlands, like isolated wetlands, can meet the technical criteria outlined in the state delineation manual but are not subject to federal jurisdiction. This is further discussed in the mentioned Sections. As noted in the document, “The Corps of Engineers, not applicants or their consultants, has authority to determine whether or not a wetland is a water of the U.S. and thus regulated under the federal Clean Water Act (CWA). If the Corps determines that a wetland is not subject to regulation under the CWA, applicants should be aware that these wetlands are still regulated by Ecology as well as by local governments.”

P.13 Comment: Paragraph 2: This paragraph discusses definition, but the diagram on p4 mentions a wetland determination. Did you mean determination here? If not, need to discuss determination here somewhere.

Response: This section has been revised. The paragraph that the comment refers to has been cut from the text. Refer to Section 3.2 for the revised text. Also, the diagram referred to has also been cut from the text as it oversimplified the steps in the permit process.

P.14 Comment: The heading “What is a biological wetland?” sounds odd...it seems to indicate there are also such things as non-biological wetlands or something. Since we don’t usually use this term, do we really need the word “biological” here? Also I suggest changing the first sentence under this to read “ A ~~biological~~ wetland is ~~one~~ an area that is determined to have specific ~~the~~ physical, biological and chemical characteristics ~~to be called a wetland.~~”

Response: The referenced language has been cut and incorporated in to Section 3.2. The following language was added, “A wetland is determined by its physical, biological, and chemical characteristics.”

P.15 Comment: What us a jurisdictional wetland? Third paragraph sentence 2, it is long and diffuse. Our suggestion, “For instance isolated wetlands and prior converted wetlands are not regulated under Section 404 of the federal Clean Water Act, but are regulated by the state water pollution control act and local critical areas regulations. Conversely, wetlands under a certain size (e.g. 2500 ft) may be exempt under local critical areas regulations, but are by state and federal law.”

Response: This section has been revised. There is no longer a specific discussion on “What is a Jurisdictional Wetland.” Regulations change often so the guidance suggests that applicants contact the agencies. See Section 3.4, *What Regulations Apply* for revised text.

A detailed discussion of Isolated Wetlands and Prior Converted Croplands can be found in Sections 3.3.1 and 3.3.2. The section on Isolated Wetlands begins with, “Some types of wetlands are regulated by state and local governments but not by the federal government. The most common type is isolated wetlands...”

P.16 Comment: What do you mean by an Exempt Activity? We suggest you rewrite this paragraph for clarity and put the necessity to consult local governments and agencies up front. It should be clear that the law must be followed. What is the relationship between “currently in agricultural production” and “prior converted crop lands”? These definitions must be clear so these terms are not stretched to the breaking point.

Response: This section has been revised. There is no longer a specific discussion on “What is an Exempt Activity?” This section confused rather than clarified the topic. Portions of this section have been incorporated into section 3.4, *What Regulations Apply?* The following text addresses this comment: “Some wetland types or sizes are specifically exempted under certain laws. It is important to determine whether and how a wetland is subject to any laws. The best way to do this is to consult with the appropriate agency...” Also, see Section 3.3.2 for a discussion of Prior Converted Croplands.

P.17 Comment: There currently is a disconnect between lands identified by NRCS as “prior converted cropland” and what qualifies as prior converted cropland for Clean Water Act. The prior converted cropland label that is discussed in the 2002 Farm bill and NRCS information applies only to lands in agriculture. It is not a label that applies to lands converting to non-agricultural uses. The US Army Corps of Engineers and EPA put out a regulatory guidance letter in 1990 that stated that Prior Converted Cropland were not waters of the United States but they also included abandonment criteria for those wetlands that had been converted to cropland and abandoned and reverted to wetland. The farm bill changed in 1992 and 1996 and 2002. The abandonment criteria was dropped in 1996 but the prior converted cropland label was used only as a label on lands remaining in agriculture and not lands converting to other uses. While the term “prior converted cropland” still exists it has evolved in meaning to where it is no longer applicable to nonagricultural uses. See information from NRCS web pages.

Response: The Section on Prior Converted Croplands (3.3.2) has been revised to reflect recent changes, including the withdrawal of the NRCS and Department of the Army from a 1994 MOA, *Guidance on Conducting Wetland Determinations for the Food Security Act (FSA) and Section 404 of the Clean Water Act (CWA)*. Refer to the section for the revised text.

P.18 Comment: Prior converted wetlands. Be very clear about whether or not wetlands that have been under agricultural use and are exempt from regulation while under agriculture may or may not be converted for development. This is not mentioned at all and people have the idea that they may take a prior converted area and then develop it without mitigation....

Response: We have clarified the text to address this. PCC that are being converted to non-agricultural uses, or are abandoned, are regulated by the Corps as waters of the U.S. if they meet the hydrologic criteria. Even if not abandoned, PCC wetlands, like isolated wetlands that meet the state's delineation criteria (WAC 173-22-080) are still regulated under the state's Water Pollution Control Act (Chapter 90.48 RCW), the Shoreline Management Act, and the Growth Management Act. Refer to Section 3.3.2 for the revised text. See also Response to Comment P.17.

P.19 Comment: Are Isolated Wetlands regulated any more? Reword! The first answer should be "yes" by state and local regulations. After stating the positive, move into the negative, place the last paragraph first and then insert the last paragraph about how Ecology regulates these "isolated" wetlands. The fine print about SWANCC can be spelled out second. People will miss this very important point the way it is currently written.

Response: The suggested change has been made. In the first paragraph it is emphasized that "These wetlands continue to be protected under state and local laws and rules." Also a box has been added that emphasizes that "The Supreme Court's SWANCC ruling does not change Washington State laws governing wetlands."

Page 8

P.20 Comment: Box: Add at start of the box note, add: "Although consultants should be able to determine presence or absence of a wetland, only" the corps of engineers....

Response: No change to text was made. The box says, "The Corps of Engineers, not applicants or their consultants, has authority to determine whether or not a wetland is a water of the U.S. and thus regulated under the federal Clean Water Act (CWA). If the Corps determines that a wetland is not subject to regulation under the CWA, applicants should be aware that these wetlands are still regulated by Ecology under the State's Water Pollution Control Act as well as by local governments." The note can be found at the end of Section 3.3.

Page 9 (Introduction to Laws, Rules, Policies, and Guidance)

P.21 Comment: A key legal standard for mitigation is: "*The compensation is proportionate to the proposed loss of wetland acreage and functions. In other words, the required compensation represents a roughly proportional exchange for the proposed impacts to provide and ensure the adequate compensation of wetland area and functions*" (see page 70). This standard should be introduced and discussed here. Clarify how the remaining sections of this document focus, to a large degree, on how standard can ultimately be met through mitigation actions.

Response: The italicized is not a law or rule, but a legal standard for mitigation and therefore it is not discussed in this section. The legal standard for mitigation is discussed at the beginning of Chapter 6 where the specific requirements for compensatory mitigation are discussed. Also, note that the list of laws, rules, policies and guidance which started on page 9 have been moved to Appendix E.

P.22 Comment: Paragraph 1: The final sentence states “Tribes also play an important role in wetland regulation.” However, the Tribes role in Aquatic Resources regulation is not discussed in the remainder of the text aside from in a footnote. More discussion should be added to explain the Tribes’ role in Aquatic Resources regulation.

Response: This section has been revised and incorporated in to Section 3.4. The descriptions of the various laws, rules, policies, and guidance have been moved to Appendix E. The text regarding the tribes has been added, “Tribes can also play an important role in wetland regulations when projects affect reservation land, cultural resources, traditional cultural properties, and tribal “usual and accustomed” areas¹.” Also, more details have been added to the footnote for the Clean Water Act (now found in Appendix E), “Some tribes have been given exclusive jurisdiction for activities occurring on their lands (they have their own water quality standards that have been approved by EPA and therefore they can write their own 401 certifications). Check with the EPA for a current list of approved tribes.

Currently there are only 2 tribes (Puyallup and Chehalis) that have exclusive jurisdiction. We felt that it was important to note that tribes can play an important role. However, this document focuses on wetlands, and therefore, more discussion of the tribes role in aquatic resources regulation, in addition to the above mentioned changes, will not be added.

P.23 Comment: Paragraph 2 (and Page 13): State Laws and Rules - As part of its land management responsibilities, WDNR authorizes uses on state-owned aquatic lands, including wetlands. It is conceivable that a project could be designed and actually implemented on state-owned aquatic lands without WDNR’s authorization. To reduce the likelihood of this, please include a reference to WDNR and supporting information in the following pages, as an appropriate agency to contact. Supporting information should reference the Revised Code of Washington (RCW) 79.90 - 79.96, which are commonly referred to as the Aquatic Lands Act*. These statutes define WDNR’s responsibility to manage state-owned aquatic lands and include authorizing the use of these lands for a variety of activities, which can include mitigation projects. * RCW 79.90 – 79.96 were not passed under the term “Aquatic Lands Act.” However, the sections all relate to the management of state-owned aquatic lands and have become commonly referred to as such.

Response: A description of the Aquatic Lands Act (RCW 79.90 -79.96) has been added to the section on State Laws and Rules, which is now in Appendix E. The description reads, “Chapters 79.90 – 79.96 RCW were not passed under the term “Aquatic Lands Act.” However, the sections all relate to the management of state-owned aquatic lands and have become commonly referred to as such. These statutes define the Washington Department of Natural Resources (WDNR) responsibility to manage state-owned aquatic lands and include authorizing the use of these lands for a variety of activities, which can include wetland compensation projects. Projects proposed on state aquatic land may require separate authorization from the Washington Department of Natural Resources.”

In addition, the role of WDNR is described and web-links provided to the Aquatic Lands Program in Section 3.4.2, *The Role of Other State Agencies*. Also, the need for authorization to use state-owned aquatic lands is described in a box in Section 6.3.1, *Choosing the Location*. The need for authorization to use state-owned aquatic lands has been added to Part 2 in Section

¹ Tribes can also have a significant role in coordination and consultation under Section 106 of the National Historic Preservation Act of 1966 to determine how a project may affect recorded or undiscovered cultural resources (see Appendix E for a description of the National Historic Preservation Act).

3.3.2.2, *Site Ownership and Legal Mechanisms for Long-term Protection*. See also Comments G.7, P.2, and P.59.

P.24 Comment: Paragraph 2: Instead of “At the end, a table.....” change to read “Table 1 summarizes...”

Response: This section has been revised and the suggested change has been incorporated in the text. “A description of the laws and rules that may apply to proposed activities in or near wetlands can be found in Appendix E. A table in the appendix summarizes pertinent federal, state, and local laws and rules.”

Page 10

P.25 Comment: The statement that a 401 permit must be obtained should be emphasized and move up to a more prominent position. Also emphasize the requirement for complete alternatives analysis and link to the 401 (b) guidelines.

Response: This section has been revised. A description of the laws, rules, guidance, and policies can now be found in Appendix E. This information was meant to provide a general overview of laws, rules, policies, and guidance pertinent to wetlands. Information on applying for permits can now be found in Section 3.4.1. We suggest that applicant contact the Office of Regulatory Assistance to determine which agency permits and authorizations may be needed.

A reference to the description of NEPA has been added under 404 because the requirement for complete alternatives analysis is discussed there. Note: it is 404(b)(1) guidelines, not 401(b) guidelines.

P.26 Comment: Paragraph 3: Change “some” tribal lands to “most” tribal lands. Only 3 of 40 WA tribes do their own certifications

Response: The suggested change has been made. The text now reads, “The EPA is responsible for issuing 401 certifications on most² Tribal lands (land within the boundaries of an Indian Reservation)...” This text can now be found in Appendix E.

P.26a Comment: Paragraph 3: What about National Forests and Wildlife Refuges?

Response: No change to text required. EPA is responsible for issuing water quality certifications (401’s) only for areas under exclusive federal jurisdiction, so they do not do National Forest Service lands, National Recreation Areas, National Wildlife Refuges etc. because they have some state jurisdiction also. This text can now be found in Appendix E.

P.26b Comment: Last Paragraph: Add an “s” to alternative analysis. See footnote “8” on page 11.

Response: An “s” has been added. The text now reads, “alternativess analysis.” This text can now be found in Appendix E.

² Some tribes have been given exclusive jurisdiction for activities occurring on their lands (they have their own water quality standards that have been approved by EPA and therefore they can write their own 401 certifications). Check with the EPA for a current list of approved tribes.

Page 11

P.27 Comment: Under **CZM** it would help to explain further what the “notice of CZM consistency” is and why it is important.

Response: Text has been added to clarify. The description of the Coastal Zone Management Act can now be found in Appendix E.

Page 12

P.28 Comment: Also, under the **Endangered Species Act**, explain what a lead agency is and how to know which agency it is for your project.

Response: The term “lead agency” has been deleted and replaced with “federal agencies.” The text can now be found in Appendix E.

P.29 Comment: For **National Historic Preservation Act**, how does an applicant know if they need to do a property survey? Are there criteria?

Response: The following text has been added, “The federal agency (ies) involved in the project makes the determination on whether a survey needs to be done.”³ This text can now be found in Appendix E.

Here is some additional information that is not included in the text, from the Corps on this subject:

One criterion for determining if a survey needs to be done is whether the project location is listed on the National Register of Historic Places or the project has raised concerns with the local Native American Tribes with knowledge of the area. The Corps has access to a database that lists all known historic properties and/or cultural resources that have been listed or are eligible for listing on the National Register of Historic Places. The Corps puts in the project location and the database lets them know if there are any listed properties on the site or within the vicinity. Other than that there are no specific criteria.

It is the Environmental Analyst's/ Cultural Resource staff's job (at the Corps) to determine whether a cultural resources reconnaissance or survey is required. It really depends on the project size, scope and location. Sometimes there is an obvious need for a survey because you have specific information about a site (i.e. a lithic scatter on a nearby site and it is likely one will be found at the project location). The project site may be an area that has been significantly disturbed so it may be unlikely there would be an unrecorded or undiscovered cultural resource. However, some culturally significant sites have been found buried under previously and extensively disturbed sites, and therefore a survey may be required. Landscape position and the history of the area can also indicate a lot and guide the Corps staff decision as to whether a survey should be required. If it is a more difficult site, Corps staff will coordinate with the Corps District's staff archaeologist to determine whether a survey is needed. Also, it depends on the type of project it is and whether it is of such limited nature that the chances an unidentified cultural resource would be encountered is highly unlikely. If in doubt the Corps will require a reconnaissance (much cheaper than a survey). The Corps will also coordinate with the local

³ One criterion for determining if a survey needs to be done is whether the project location is listed on the National Register of Historic Places or the project has raised concerns with the local Native American Tribes with knowledge of the area.

tribe in the area to see if they have concerns about a certain area or project. It is strongly suggested that the applicant do this also. And lastly, the permits can be conditioned to require an archaeologist be on site if the survey or reconnaissance shows no resources but it is still suspected that the applicant could uncover something.

Page 13

P. 30 Comment: The text box seems a less effective way to present the text for the use of surface water quality standards than describing these on page 13 just under the State Water Pollution Control Act. Does this refer to 401 Water Quality Permits?

Response: The text box that is referred to was on page 16. The text box has been deleted and the text from the box has been incorporated in to the paragraphs on the State Water Pollution Control Act and the Antidegradation Policy. The revised text can now be found in Appendix E.

Page 14

P.31 Comment: Aquatic Resources Mitigation Act section notes that the state has a policy for innovative mitigation measures. First question is why? The next sentence defines innovative as not in-kind and on-site. This does not seem to be a very accurate definition for this concept. We think the guidance has to spell out techniques that are truly innovative. Do you mean watershed-based approach per se or just “if” it provides better biological functions.

Response: The text has been clarified and language from the act has been added in quotes. To answer the question “Why?”, the law states that “(c)The practice of considering traditional on-site, in-kind mitigation may provide fewer environmental benefits when compared to innovative mitigation proposals that provide benefits in advance of a project’s planned impacts and that restore functions or habitat other than those impacted at a project site; and (d) Regulatory decisions on development proposals that attempt to incorporate innovative mitigation measures take an unreasonable long period of time and are subject to a great deal of uncertainty and additional expenses. (2) The legislature declares that it is the policy of the state to authorize innovative mitigation measures by requiring state regulatory agencies to consider mitigation proposals for infrastructure projects that are timed, designed, and located in a manner to provide equal or better biological functions and values compared to traditional on-site, in-kind mitigation proposals.”

The law does not specifically discuss techniques that are innovative, but that agencies consider mitigation proposals that are not on-site and in-kind if they provide equal or better biological functions. “Innovative mitigation measures” will be considered on a case by case basis and in accordance with other state laws, rules, policies, and guidance. This text can now be found in Appendix E.

Page 15

P. 32 Comment: Paragraph 1: If possible, or appropriate, please provide an anticipated completion date for the draft bank certification rule. As currently written, it implies that there may never be a final rule, which could reduce the rule’s value to a project proponent. At a minimum provide a contact for more information on the status of the rule.

Response: Since Ecology does not know when or if a final rule will be adopted, an anticipated completion date for the draft bank certification rule has not been included at this time. Text has

been added that says to see the DRAFT State Wetland Banking Rule, which goes in to more detail about the draft rule. A reference to Ecology's Wetland Mitigation Banking Home Page has also been added. The text can now be found in Appendix E.

P.33 Comment: At the end of the “Wetlands mitigation banking” section, you may want to add “see the state policy and guidance section”, or “see pg 25”

Response: The suggested change has been made. The text can now be found in Appendix E. See also response to Comment P.32.

Page 17

P.34 Comment: Important Note (in box): Include a reference to an Appendix where people can locate the current (either hardcopy or web addresses or both) agencies on the local, state, and federal level.

Response: This section is now located in Appendix E. The box has been deleted and the text was incorporated in to the introduction of the Appendix, “In order to determine if any laws, rules, policies, or guidance apply to a particular situation, contact the agencies (see Appendix C, *Agency Contacts*).

Page 19

P.35 Comment: The document should identify and discuss the implications of the 404(b)(1) guidelines more thoroughly, including more recent statements of federal policy and standards identified in:

- Memorandum to the Field: *Appropriate level of Analysis Required for Evaluating Compliance With the Section 404(b)(1) Guidelines Alternatives Requirements* [Issued by EPA and ACOE, August 23 1993]
- RGL 95-1 31 March, 1995. *Guidance on Individual Permit Flexibility for Small Landowners.*
- Memorandum for the Field: *Individual Permit Flexibility for Small Landowners.* [Issued by EPA and ACOE, March 6, 1995]

Response: This document focuses on compensatory mitigation, which is looked at only AFTER an applicant has demonstrated that there is no other less environmentally damaging and practicable alternative. Therefore, identifying and discussing the implications of the 404(b)(1) guidelines more thoroughly is beyond the scope of this project. There are many project specific variables involved in an alternatives analysis and in a determination on the use of flexibility for small landowners. Also, an alternatives analysis, especially on a large project, is an iterative process that would be hard to summarize. This subject would require a lot more text and could be its own document.

The documents listed in the above comment have been referenced in the section discussing the 404(b)(1) guidelines (now Appendix E). The footnote reads, “The following two Memorandums to the Field, issued by the EPA and the Corps, provide guidance on the flexibility that the Corps should be utilizing when making determinations of compliance with the Section 404(b)(1) Guidelines, particularly with regard to the alternatives analysis: “[Appropriate level of Analysis Required for Evaluating Compliance With the Section 404\(b\)\(1\) Guidelines](#)”

[Alternatives Requirements](#),” RGL 93-02, August 23, 1993; and, “[Individual Permit Flexibility for Small Landowners](#),” RGL 95-01, March 6, 1995.”

Note: the second and third references mentioned in the comment are the same document.

P.36 Comment: Maybe a note box needed, or a short paragraph at the beginning on this page that says something like: “NOTE: Policies have evolved over time as more has been learned about mitigation. If there appear to be conflicts between guidance pieces, the most recent guidance normally applies.”

Response: The suggested text has been added to Section 3.4, *What Regulations Apply?*. “It is important to note that policies and guidance have evolved over time as more has been learned about compensatory mitigation. If there appear to be conflicts between documents, contact the agencies for clarification. For more information on each law contact the responsible agency (see Appendix C).” Note that the rest of this section has been moved to Appendix E.

P.37 Comment: Many (but not all) of the dates in this section say something like “February 6th, 1990”. Remove the “th”s to say just “February 6, 1990.”

Response: The text has been changed so that all of the dates provided have the same format. The text can now be found in Appendix E.

Page 23

P.38 Comment: The document should also identify and discuss the FAA Advisory Circular 1997 and revised 2004. It should also cite the interagency Memorandum of Agreement between federal agencies regarding aircraft-wildlife strikes.

Response: A description of the FAA MOA and Advisory Circular has been added. See response to Comment G.2. The text can be found in Appendix E.

Page 25

P.39 Comment: Paragraph 1: The location of off-site mitigation relative to impact sites and WRIA boundaries (more local sub-basins boundaries) should be discussed. Some appropriate definition of watershed, sub-watershed, and WRIA relative to the siting of mitigation should be provided.

Response: In the revised document, Section 6.3.1, *Choosing the Location*, discusses the considerations used to determine whether a site should be located on-site or off-site. This section also contains definitions of “watershed” (a geographic area of land bounded by topographic high points in which water drains to a common destination. A watershed can be as large as a Water Resource Inventory Area (WRIA), a 14-digit Hydrologic Unit Code (HUC), or as small as a river basin/river reach) and “sub-basin” (a smaller drainage basin that is part of a larger drainage basin or watershed. For example, the watershed of a large river may be composed of several sub-basins, one for each of the river’s tributaries). These terms are also defined in the Glossary. Also, see Comments G.3, P.47, P.48, and P.201.

P.40 Comment: Paragraph 2: Similar to the above comment (DNR comment on page 15 – P.32), please provide some information regarding the finalization of the rule. Also, explain how the pilot project relates to the completion of the rule.

Response: The following text has been added, “In July 2004, the department started implementation of a pilot rule project to test the implementation of the draft bank certification rule. Check the Ecology Wetland Banking Home Page for the most recent information on the status of the bank certification rule. <http://www.ecy.wa.gov/programs/sea/wetmitig/index.html>. The text can now be found in Appendix E.

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P.41 Comment: Aquatic Habitat is an expression of larger landscape processes. . . Processes evaluated are physical processes but there are also biological watershed processes. In addition to movement of wood, sediment, water, nutrients and pollutants, there is also movement of genetic material that plays important roles in watershed process. For example anadromous fish passage and presence is important for delivery of marine derived nutrients to the system. Biological connectivity in terms of fauna and flora are important process to prevent isolation of subspecies and introduction and expansion of non-native aggressive species. Often times the biological processes in the watershed are overlooked for evaluation of physical watershed processes only. The movement of biological process in the landscape is upslope movement as well as downslope movement. It is not determined solely by gravity.

Response: We believe the commenter is referring to the figure on page 28 of the draft document. This section, *Using a Landscape-Based Approach to Compensatory Mitigation*, has been deleted and incorporated in to the new Section 2.3, *Wetlands in the Landscape* and throughout the document. The subject of environmental processes is a big, complex one and though it is important it is beyond the scope of the document to go in to detail on this subject. We refer people to Chapters 4 and 5 of *Wetlands in Washington State - Volume 2: Guidance for Protecting and Managing Wetlands* (Granger et al. 2005) for more about wetlands and the landscape. The commenter does not appear to be asking for a change and nothing in the new Section contradicts the comment.

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P.42 Comment: Sustainability should be added to list of considerations for on-site versus off-site compensation

Response: This section, *Using a Landscape-Based Approach to Compensatory Mitigation*, has been cut from the text. The Section 2.3, *Wetlands as Part of the Landscape*, briefly touches on landscape processes, however we refer people to Chapters 4 and 5 of *Wetlands in Washington State - Volume 2: Guidance for Protecting and Managing Wetlands* (Granger et al. 2005) for more details about wetlands and the landscape. A list of considerations for on-site versus off-site compensation can be found in Section 6.3.1.2. Sustainability is mentioned as a consideration when choosing a location as in. “Compensation should occur in a location where the targeted functions can reasonably be performed and sustained and should not be atypical for that location...” See also Comment P.45a.

P.43 Comment: the reference NCR2001 should read NRC 2001

Response: This section has been cut from the text.

P.44 Comment: Sentence 1: Change to read “The ESA listing of several species...”

Response: This section has been cut from the text.

P.45a Comment: Environmental processes: The explanation of environmental processes on pp. 30-31 is lacking. Processes are not conditions. Instead, processes should be described as the continual movement and/or transformation of matter and energy through time and space. In contrast, conditions are factors that influence the rate and nature of environmental processes such as precipitation patterns influencing water flow. Wetlands are places in the landscape that tend to have a large influence over several environmental processes. This influence is known as wetland function. The degree of influence upon a particular process is equivalent to the performance level of a wetland function. For instance, wetlands tend to influence a landscape’s water flow (environmental process) by providing detention (function). Processes and functions may also be biotic. For instance, wetlands tend to influence a landscape’s amphibian productivity (environmental process) by providing suitable habitat (function).

Response: We have revised the guidance document, and the explanation of environmental processes on pp. 30-31 has been removed. The subject of environmental processes is a big, complex one and though it is important it is beyond the scope of the document to go in to detail on this subject. We refer people to Chapters 4 and 5 of *Wetlands in Washington State - Volume 2: Guidance for Protecting and Managing Wetlands* (Granger et al. 2005) for more about wetlands and the landscape. See also Comment P.42.

P.45b Comment: Furthermore, a disturbance should be viewed as an extreme, usually short-term event that has a large, often long-term influence upon a landscape’s environmental processes. For instance, a landslide (disturbance) is effectively a large downslope movement of sediment (environmental process) that occurs within a very short time period.

Response: We have revised the guidance document, and the explanation of environmental processes and the subsequent reference to “disturbance” on p. 31 has been removed. It is beyond the scope of this document to provide a definition or discussion of “disturbance.” Usage of the term “disturbance” in the revised document, however, is consistent with *Wetlands in Washington State - Volume 1: A Synthesis of the Science* (Sheldon et al. 2005) (refer to Chapter 3).

P.45c Comment: I agree that restoration design should be very mindful of the environmental processes occurring within the landscape. Accordingly, designers will benefit from a clear understanding of what environmental processes and wetland functions really are.

Response: Comment noted. Also see responses to Comments P.45a and P.45b.

P.46 Comment: Paragraph 3: This paragraph seems awkward. Environmental processes are not conditions. Maybe factors? Or maybe just say “Environmental processes control....”

Response: We have revised the guidance document, and this paragraph has been removed.

P.47 Comment: Paragraph 3: See comment above (page 25, paragraph 1). Watershed planning should be defined in terms of WRIA. Major or minor sub-basins and other geographical considerations should be clarified so the agencies intent and expectations are clear. The term “basin” as a factor for siting and evaluating mitigation projects is ambiguous. The revised document should define “basin” to be synonymous with “WRIA”, or at a minimum, in a manner that mitigation activities performed in compliance with RCW 90.74 – *Aquatic Resources Mitigation Act*, RCW 90.84-*Mitigation Banking*, and RCW 75.46-*Salmon Recovery Act* are acceptable mitigation per this new mitigation guidance.

Response: We disagree. The document will define the terms “basin (sub-basin)” and “watershed” to be consistent with *Wetlands in Washington State – Volume 1: A Synthesis of the Science* (Sheldon et al. 2005). We will also note that the appropriate scale for projects will vary based on the purpose, proposed functions and wetlands provided, condition of the watershed, and the types of impacts being compensated. However, for the purposes of this document, watershed will be defined as a geographic area of land bounded by topographic high points in which water drains to a common destination. Sub-basin will be defined as a smaller drainage basin that is part of a larger drainage basin or watershed. For example, the watershed of a large river may be composed of several sub-basins, one for each of the river’s tributaries. Definitions for watershed and sub-basin will appear in the text in Section 6.3.1.2, *Considerations for Choosing a Location*, and in the Glossary.

The guidance is consistent with Washington State’s *Alternative Mitigation Policy Guidance Interagency Implementation Agreement* (Ecology 2000, refer to Appendix E). The guidance will be consistent with RCW 90.74, “The departments of ecology and fish and wildlife may not limit the scope of options in a mitigation plan to areas on or near the project site, or to habitat types of the same type as contained on the project site. The departments of ecology and fish and wildlife shall fully review and give due consideration to compensatory mitigation proposals that improve the overall biological functions and values of the watershed or bay and accommodate the mitigation needs of infrastructure development.” In addition, the guidance will be consistent with RCW 90.84 by approving the use of credits from a bank when: (1) The credits represent the creation, restoration, or enhancement of wetlands of like kind and in close proximity when estuarine wetlands are being mitigated; (2) There is no practicable opportunity for on-site compensation; or (3) Use of credits from a bank is environmentally preferable to on-site compensation.

Consistency with the Salmon Recovery Act (RCW 77.85) is beyond the scope of this document (however, we believe that the guidance will not be inconsistent with this act). Impacts to salmonids and their habitat and any impact reduction measures (e.g. mitigation) necessary to protect salmonids and their habitat will be covered under Section 7 of the federal Endangered Species Act (16 USC 1531 et seq.). Projects that will impact salmonids and/or their habitat will be reviewed on a case by case basis, and it is beyond the scope of this document to attempt to provide guidance on what the US Fish and Wildlife Service or NOAA Fisheries will require. See Comments G.3, P.39, P.48.

P.48 Comment: Paragraph 3 and 4: For small wetland impacts, especially where historical wetland degradation has occurred, applicants can often meet the key legal requirement for mitigation (see page 70) by on-site mitigation, and independent of evaluating larger watershed issues. Mitigation policies and guidance may need to consider what incentives would prompt applicants

to consider off-site mitigations that could, in the longer run, provide more ecologically significant benefits that rise above the level of direct impacts.

Response: Comment noted. Chapter 6.3.1.2, *Guidance on Choosing a Location*, discusses the considerations used to determine whether a site should be located on-site or off-site. It is beyond the scope of this document to propose or discuss incentives to applicants. Also see Comments G.3, P.39, P.47, and P.201.

P. 49 Comment: Paragraph 5: “When wetland losses occur in urban areas, suitable alternatives for offsetting small impacts can be identified such as the purchase of mitigation credits from an approved wetland mitigation bank, the preservation of wetland tracts, and the restoration of stream corridors to provide connectivity and migratory routes for wildlife.” Preservation of wetland tracts to offset wetland losses results in a net loss of wetland area.

Response: No change to text required. See also Response to Comment G.16 (no net loss).

The following is more explanation from the Corps on preservation and no net loss of wetland functions:

For compensatory mitigation purposes, resource trade-offs are necessary at times and must be considered carefully in any permit action. There are certain geographic regions in Washington State where compensatory mitigation options are extremely limited. Areas such as portions of Pacific and Grays Harbor County contain large tracts of wetlands and few uplands suitable for creating and/or restoring wetlands. Enhancement activities are limited as well. Many of the upland systems, which form in ridge and/or dune topography contain very important functions to preserve and are an integral part of the whole ecosystem. Some of the only areas to create wetlands in these counties are within the interdunal ecosystem comprised of a mosaic of wetland and uplands. Wetland creation within this system has proven to be an unsatisfactory form of compensatory mitigation for several reasons. Compromising the upland dunes for wetland creation does not make good ecological sense.

The Corps and Ecology have no regulatory control over certain activities under Section 404/401 of the Clean Water Act. For example, no permit is required from the Corps or Ecology in order to clear-cut or selectively cut timber (mature or otherwise) from private or public wetlands unless it involves stump removal, grading and/or mechanized land-clearing activities. This unregulated activity can severely degrade the functions and values of a forested or mature scrub/shrub wetland system. Another unregulated activity that can severely degrade wetland functions is excavation of a wetland that involves “incidental fallback”, constituting a de minimus impact or effect. Nationwide, many wetlands have been intentionally drained and converted to uplands due to the unregulated incidental fallback from excavation activities. Both clear-cutting and excavation activities have taken a toll on our nations wetland functions and values.

By preserving and protecting tracts of land that otherwise would be degraded by unregulated activities, there can be a net increase in function and value of the wetland being protected. The preservation activity, in some cases can and does address no net loss of function for certain project impacts, and at times can increase (by retaining and protecting) functions in relation to the impact site. For example, if a project applicant proposes to impact a scrub/shrub wetland on the Long Beach Peninsula and must provide storm water treatment (both quantity and quality) on site, but there is no opportunity to compensate for habitat functions, such as songbird habitat, on site. Preserving a wetland that contains high functioning songbird habitat that would

otherwise be subject to a clear-cut, has the potential to maintain and improve (over time) valuable songbird habitat. In addition, the wetland is likely to contain mature spruce or cedar with lateral branches that may support marbled murrelet and/or spotted owl nesting habitat. Since the impact site did not contain nesting habitat for murrelet or spotted owl, preservation of mature trees that offer this habitat is, in fact, a net increase in function over that being impacted. Often times some of the wetland functions being impacted on site must be replaced on site, and often times on-site opportunities for replacing or improving habitat is extremely limited. Preservation can be an important tool to use to address limited habitat opportunities on the impact site.

In an ideal world, preservation would only be used in conjunction with other forms of compensatory mitigation. In certain areas, preservation may be the only tool available to an applicant to address the impacts of a proposal. In urban environments tracts of wetland and upland are becoming increasingly rare. Although it would be ideal for local governments to take urban tracts of land and make them into parks, green space, and/or native growth protection areas, the reality is that this is not being done at a rate that protects watershed processes. Often these undeveloped lands provide important tax revenues that neither local governments can afford to give up, nor private citizens want to give away. Preservation, as a form of compensatory mitigation in an urban setting, can provide the incentive to protect these areas in perpetuity, adding to a cumulative benefit in addressing limited resources in the urban environment. In addition, urban preservation areas are often coupled with enhancement opportunities depending upon adjacent land uses and invasive species distributions.

Allowing preservation as the sole compensatory mitigation tool in certain situations can and does make ecological sense. The occasional resource trade off is made up for in much higher ratios than other forms of compensatory mitigation. Preservation is a vital component of ecosystem restoration and maintaining and improving watershed processes.”

P.50 Comment: The section “Examples of landscape-based mitigation alternatives” seems weak and unfocused. Maybe it’s the wrong title, or maybe removing the first sentence in Par 3 starting “Another example....” would help, because it wasn’t clear there was ever a first example.

Response: We have revised the document, and the section, *Examples of landscape-based mitigation alternatives*, has been removed. Some of the information is now in Section 2.3, *Wetlands as Part of the Landscape*. Other aspects of landscape-based mitigation have been incorporated throughout the document, including Chapter 6, Section 6.3.1, *Choosing the Location*. Using a landscape approach has also been incorporated throughout Part 2, including Section 3.3, *Selecting a Compensatory Mitigation Site*.

Page 33

P.51 Comment: Paragraph 3: The fourth sentence states that, “...conservation banks are lands acquired by third parties...” However, these lands do not have to actually be acquired. Instead, use authorizations from WDNR or other traditional conservation easements could also be used to secure land for use as a conservation or mitigation bank.

Response: The underlined text has been added to the last paragraph and a footnote has been added to clarify. “Similar in many ways to wetland mitigation banks, conservation banks are

lands (usually large tracts) with existing habitat that are acquired or protected⁴ by third parties to be managed specifically for listed species and protected in perpetuity by conservation easement.⁵” The text can now be found in Section 7.3, *Compensatory Mitigation and the Endangered Species Act*.

P.52 Comment: Paragraph 3: This paragraph compares and contrasts conservation and mitigation banks, but it should also state that a single bank could produce both conservation and mitigation credits.

Response: The suggested change was not made. This information over-complicates the issue and, could be confusing, and would need additional text to clarify. There are currently no approved conservation banks in Washington so we decided to keep the text general. The text can now be found in Section 7.3, *Compensatory Mitigation and the Endangered Species Act*.

P.53 Comment: Paragraph 5: “Recognizing this, in 2003, the USFWS issued a set of comprehensive federal guidelines intended to promote and guide the development of conservation banks.” Development of conservation banks to offset wetland losses results in a net loss of wetland area.

Response: This is referring to lines 4 and 5 of paragraph 3 (not 5). This section does not advocate or imply that conservation credits should or could be used to offset wetland losses. In addition, not all conservation banks would result in a net loss of wetland area for a particular project (Note: no net loss of wetland area is a goal to be achieved at a programmatic level). Acquiring existing habitat or protecting existing habitat through conservation easements are two options. A bank can also be created by restoring or enhancing disturbed habitat, creating new habitat in some situations, and prescriptively managing habitats for specified biological characteristics. All conservation banks should be protected in perpetuity. A footnote has been added to clarify that conservation banks are not only created by acquisition or preservation. It reads, “Conservation banks can also be created by restoring or enhancing disturbed habitat, creating new habitat in some situations, and prescriptively managing a site for specified biological characteristics.” Whether a conservation bank could be used to mitigate wetland impacts would be considered on a case-by-case basis. This text can now be found in Section 7.3, *Compensatory Mitigation and the Endangered Species Act*.

P.54 Comment: Paragraph 5: What evidence is there that larger consolidated mitigation projects, like mitigation banks, can often provide very effective mitigation for ESA-listed species?

Response: This is referring to lines 8-10 of paragraph 3 (not 5), which state that “Protecting habitat is a common form of compensatory mitigation associated with ESA-listed species. As such, larger consolidated mitigation projects, like mitigation banks, can often provide very effective mitigation for ESA-listed species...”

Up to this point not all of the regulatory agencies have bought in to the concept that mitigation banks provide adequate or appropriate compensation for ESA listed species because there is not sufficient evidence that supports this concept. There is some evidence and literature out there that indicates that smaller wetland systems may, in fact, be more viable to protect genetic material and biodiversity than larger systems in case of a catastrophic event. However, the

⁴ Conservation banks can also be created by restoring or enhancing disturbed habitat, creating new habitat in some situations, and prescriptively managing a site for specified biological characteristics.

⁵ Use authorizations from WDNR or other traditional conservation easements could be used to secure land for use as a conservation or mitigation bank.

USFWS has put out guidance on conservation banking and that is what we refer to in the text. The text referred to in the comment has been edited to clarify that larger consolidated mitigation banks may provide effective mitigation and now reads, “Protecting habitat, as a component of compensatory mitigation, can benefit ESA-listed species. As such, larger consolidated mitigation projects, such as conservation and mitigation banks, may aid in the recovery of ESA-listed species. They may provide effective compensation for projects that impact ESA-listed species, their designated critical habitat, or both.” This text can now be found in Section 7.3, *Compensatory Mitigation and the Endangered Species Act*.

P.55 Comment: Paragraph 2: Refers to sequencing, which is not explained until later in the text. Add “(see pg 37, mitigation sequencing)” in here.

Response: A reference to the section on mitigation sequencing has been added. This text can now be found in Section 7.3, *Compensatory Mitigation and the Endangered Species Act*.

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P.56 Comment: WHAT IF MY PROJECT AFFECTS A WETLAND? We recommend that you provide a chart based on type and location of wetlands. Such a chart would help the landowner who will be approaching the regulations from a piece of property within the landscape with wetlands on it. Such a chart will help in the following section as well.

Response: We agree that a chart would be helpful, however there are many variables and situations and therefore such a chart would be complicated and would have to be updated often. It is best if applicants contact the agencies to determine what laws and rules apply to their situations. In the new Chapter 3, *Overview of the Wetland Regulatory Process*, we provide references to the Office of Regulatory Assistance, who can provide applicants with information on permit processes etc.

P.57 Comment: We think it could be very helpful for people to understand the process and the interconnections between the permits required in Washington State. **See Permit process flowchart inserted at the end of these comments.** You are welcome to use it and modify it for incorporation into the notebook. It was developed by Sarah Cooke

Response: We agree that a flowchart would be helpful, however there are many variables and situations, and therefore, such a flowchart would be complicated and would have to be updated often. It is best if applicants contact the agencies to determine what the current permit processes are. In the new Chapter 3, *Overview of the Wetland Regulatory Process*, we provide references to the Office of Regulatory Assistance, who can provide applicants with information on permit processes etc. Also see Comment G.21.

P.58 Comment: 12 add ...and projects with federal funding. Also, in the table, I think it’s Rivers and Harbors Act (plural)....and “mean higher high water” (in the jurisdiction column)

Response: The changes have been made, except the change to “mean higher high water.” We looked this up and it is just “mean high water.” The tables can now be found in Appendix E.

Page 36

P.59 Comment (WDNR): Table 2: WDNR’s management authority over state-owned aquatic lands should be added to this table.

Response: The names and description of the laws, rules, policies, and guidance pertaining to wetlands have been moved to Appendix E. WDNR’s management authority has been added to Table E-1, Laws/permits commonly applicable to activities in or near wetlands. In addition, descriptions of the Aquatic Lands Act and Aquatic Resources Mitigation Act are included in this appendix. See also Comments G.7, P.2, and P.23.

P.60 Comment: Table 2: Primary State Laws/Permits. State Hydraulic Code, under Application to Wetlands. Applies to: 1. All wetlands within ordinary high water line of fresh or estuarine waters and those wetlands above ordinary high water line whose alteration could affect the bed or flow. Note: in marine waters, ordinary high water line is most often a higher elevation than Mean Higher High Water (MHHW) which is the average of both daily high tides each day. Clean Water Act jurisdiction is limited at Mean Higher High Water but critical fish habitat for surf smelt spawning and some herring spawning occurs above MHHW to ordinary high water line.

Response: The suggested text has been added to Table 2. The note has been added as a footnote to the table to address and clarify the difference in jurisdiction between the Corps and WDFW. The table can now be found in Appendix E.

P.61. Comment: Table 2: SMA jurisdiction...for clarity insert “within’ 200 feet from the OHWM

Response: The suggested text has been added. The text now reads “...and within landward area 200 feet from OHWM or floodway...” The table can now be found in Appendix E.

Page 37

P.62 Comment: Important Note: This note is redundant, as the same information has already been presented in a footnote on page 6 and in an Important Note box on page 8. Perhaps the important note could address ownership issues especially as they relate to public lands.

Response: The Important Note has been deleted. The information has been added as a footnote to Waters of the United States in Table 1 (Clean Water Act jurisdiction). The table can now be found in Appendix E. Ownership issues are discussed in Part 2 of the document in Section 3.3.2.2. The section contains a text box which addresses state-owned aquatic lands.

P.62a Comment: Paragraph 1 (after Important Note), Line 3: Replace “possible” with “practicable”?

Response: The suggested change has been made. The revised text can now be found in Section 3.5.

Page 38

P.63 Comment: In this discussion (sequencing?), it should be stated that in fact a permit could be denied. At least we trust that this is the case, especially for bogs, forested wetlands and other irreplaceable wetlands. In text box, “may be the only” to “usually is the only.”

Response: Text has been added (underlined text below) to explicitly state that a permit could be denied if there is a practicable alternative. The text now reads, “The Section 404(b)(1) guidelines prohibit the Corps from authorizing a project under an individual permit unless that project would use the “least environmentally damaging practicable alternative” (as determined by the Corps and EPA). If a less environmentally damaging alternative is available and

practicable, then a permit would be denied.” The primary purpose of this document is to provide guidance for applicants, consultants, and agency staff, on what may be required to get a wetland mitigation proposal approved. It is beyond the scope of this document to provide more details and discussion on how or under what circumstances permit applications are denied. It should be assumed/implicit that a permit could be denied. The revised text can now be found in Section 3.5.1.

In the text box, now in Section 3.5.1, the language has been changed from “may be the only” to “usually is the only.” The text box now reads, “For certain wetlands that are rare, sensitive, or hard to replace (e.g., bogs, fens, mature forested wetlands, eelgrass beds, and habitats for unique species or endangered plant populations) avoidance is usually the only step in the mitigation sequence. For more information and further guidance see the *Federal Guidance on Protection and Mitigation of Difficult to Replace Aquatic Resources Under Section 404 of the Clean Water Act*, which was developed as part of the National Wetlands Mitigation Action Plan (<http://www.mitigationactionplan.gov>).

P.64 Comment: Paragraph 2, Item #5: “Compensating for the impact by replacing, or providing substitute resources or environments,” Providing substitute non-wetland resources and environments to offset wetland losses results in a net loss of wetland area.

Response: No change to text required. The language in quotes comes directly from the WAC (197.11.768). In some cases it may make ecological sense to replace lost wetlands with substitute non-wetland resources and environments. See response to Comment G.16 which discusses the policy of no net loss. Also see the response to Comment P.49.

P.65 Comment: First full paragraph: The sentence “In addition, many projects that require authorization by the Corps must comply with the 404b(1) guidelines” seems wrong. As far as I know, ALL projects have to comply with these guidelines.

Response: The text has been revised and can now be found in Section 3.5.1. “Projects that require CWA authorization by the Corps must also comply with the Section 404(b) (1) guidelines.”

A NEPA alternatives analysis is required for all projects – for wetland and stream fills (and other 404 actions) and it is the 404(b)(1) analysis which explicitly goes through the process to determine the least environmentally damaging alternative that is practicable and capable of achieving the project purpose. A full blown individual 404(b)(1) analysis is only done for projects with large impacts and is attached as an appendix to the Corps Record of Decision or Environmental Assessment. Otherwise, for smaller projects that require an individual permit, the 404(b)(1) analysis is included within the Decision Document itself with some standard language. The amount of detail depends on the impact. NWP (generally projects with minimal impacts) comply with the 404(b)(1) guidelines because it was determined that there are not alternatives that are less environmentally damaging (this is determined through sequencing - avoid, minimize, mitigate).

P.66 Comment: Paragraph 2: Defining nationwide permits as a collection of general permits is confusing, as general permits are actually something very different from nationwides. I’d remove the words “(a collection of general permits)” and insert the words “ , issued for actions which are determined to have negligible or very small impact, ”

Response: The suggested language was not added. NWP's are a type of general permit. We refer people to the Corps' Regulatory Program web page ("Permit and Applicant Information") via <http://www.nws.usace.army.mil/> for more information on NWP's.

Page 39

P.67 Comment: Paragraph 1: "usually require compensatory mitigation" when is not required? ... so that functions... are not "completely lost" Just a little lost? The language seems unnecessarily wishy-washy.

Response: This section has been revised, including the referenced sentence. In the revised text the word "usually require compensatory mitigation" has been replaced with the word "typically require compensatory mitigation." As in "Permanent impacts typically require compensatory mitigation." This is true because compensatory mitigation is not required for a few Nationwide permits (NWP's) because it's not practicable for the scale of impact. The words "completely lost" have been replaced with the word "replaced." As in "If an entire wetland is filled, all functions are lost and generally will need to be replaced."

P.68 Comment: Paragraph 1: "When determining the 'least environmentally damaging practicable alternative' other ecosystems and habitats should be considered. For example, it may be preferable to authorize an impact to a low functioning, highly degraded wetland rather than impact a mature forested upland that provides a significantly higher level of function." This appears to be in direct conflict with standard mitigation sequencing language where avoidance is given the highest priority.

Response: No change to text required. This text was at the bottom of page 38 and can now be found in Section 3.5.1. The mitigation sequence identifies a specific progression of steps that must be considered. It is not a prioritized list. If during the first step, avoidance, it becomes clear that avoiding a low functioning, highly degraded wetland would result in impacts to a mature forested upland that provides a significantly higher level of function, then avoidance would not be the "least environmentally damaging practicable alternative." Again, the goal of no net loss is to be achieved at a programmatic level (see response to Comment G.16).

P.68a Comment: Temporal Impacts, Last sentence: Why not require a longer period for monitoring?

Response: No change to text required. This comment refers to the sentence, "Temporal impacts normally require compensatory mitigation and are usually reflected as an increase in the mitigation ratios required." Ratios may be larger for certain types of impacts in order to address temporal loss. In the section on mitigation ratios it is stated that "It may take anywhere from several years to several decades for a compensation project to achieve ecological equivalency (National Research Council 2001) and to develop the proposed/required wetland structures and/or functions (Castelle et al. 1992)." Monitoring does not address temporal loss but provides information on the conditions at the mitigation site. It is a condition of most permits and the duration of the monitoring period depends on the goals, objectives, and performance standards for the project. A reference to the section on mitigation ratios has been added at the end of that sentence.

P.69 Comment: Indirect impacts: is there a reason we did not include things such as light and noise, which may affect the wildlife functions?

Response: A reference to light and noise has been added to the discussion on indirect impacts. Text has been added to the discussion of indirect impacts. Because most of the available information on noise and light is anecdotal there cannot be much further discussion of this issue in this document at this time.

Page 41

P.70a Comment: Mitigation Types: More detailed discussions of the definitions accepted by at least 15 federal agencies can be found at:

<http://www.epa.gov/owow/wetlands/restore/defs.html#Fed>.

Response: No change to text required. The definitions provided in the link are the same as those listed in the Corps [Regulatory Guidance Letter 02-02](#) and those found in the mitigation guidance.

P.70b Comment: Notes on enhancement: Enhancement projects may also modify wetland hydrologic regimes by using waterlevel control structures, dikes etc (as is common on many National Wildlife Refuges). Decisions regarding enhancement should be made by identifying the net benefits of any functional trade-offs. Enhancement may be geared to improve functions that may be limiting in a region or watershed, values people have towards wetlands (i.e. they like ponds and duck hunting). Enhancement is not geared towards re-establishing historical conditions (which is rehabilitation).

Response: We agree that decisions regarding enhancement should be made by identifying the net benefits of any functional trade-offs. The following two sentences have been added to the discussion of enhancement: “It is important to identify whether enhancement activities will result in any tradeoffs in functions. If any tradeoffs will occur the net ecological benefits should be identified.” We do not agree however that enhancement projects where wetland hydrologic regimes need to be maintained over the long term are appropriate as compensation for wetland impacts (in most cases). See response to Comment P.83.

P.70c Comment: Rehabilitation may reestablish historical conditions or functions in a wetland, but these actions may not always provide the most limiting functions or habitats. In such cases, enhancement may be a preferred mitigation strategy.

Response: No specific change to text requested. We agree that the mitigation alternative that makes the most ecological sense should be the preferred alternative.

P.71 Comment: Paragraph 1: “For wetlands, compensatory mitigation typically involves creating new wetland area (and its associated functions) as compensation for wetland area and functions that have been or will be lost due to the permitted activity. Compensatory wetland mitigation generally entails performing one or more of the following actions:

- Restoring wetland acreage and functions to an area
- Creating new wetland area and functions
- Enhancing functions at an existing wetland
- Preserving an existing high quality wetland to protect it from future loss or degradation.

Preserving an existing high quality wetland to offset wetland losses results in a net loss of wetland area. This is in direct conflict with the above statement that “compensatory mitigation

typically involves creating new wetland area (and its associated functions) as compensation for wetland area.

Response: The sentence, “For wetlands, compensatory mitigation typically involves creating new wetland area (and its associated functions) as compensation for wetland area and functions that have been or will be lost due to the permitted activity,” has been deleted. Creation is just one of the compensatory mitigation options. All of the listed actions are available as compensatory mitigation options and should be used only when they make the most ecological sense. See the response to Comment G.16 which discusses the no net loss policy and the response to Comment P.49 which discusses preservation.

P.72 Comment: Paragraph 3: “In its Regulatory Guidance Letter 02-02, the Corps of Engineers redefined the basic types of compensatory mitigation based on the type of activity and whether the compensation will result in net gains in area or function.” By defining compensation as net gain in area or function, this leaves the door open to offset wetland losses resulting in a net loss of wetland area. Be consistent. [The commenter] supports emphasis on the replacement of both area and functions.

Response: The text has been changed to define compensation as a net gain in area and/or function. In order to determine if no net loss is occurring at a programmatic level the terms used for compensatory mitigation activities needed to be defined so that losses and gains of wetland acres and/or functions could be tracked. See response to Comment G.16 which discusses the no net loss policy.

P.73 Comment: Paragraph 3: The fourth sentence states that, “the terms creation and preservation are used in lieu of “re-establishment” and “protection maintenance.” However to be consistent with the Regulatory Guidance Letter 02-02, it should read “establishment” rather than “re-establishment.”

Response: The language has been corrected.

Page 42

P.74 Comment: Breaking “restoration” into two components: “re-establishment” and “rehabilitation” seems difficult to clarify differences. Both seem to involve some gain in wetland acres as degraded or interrupted hydrology is restored. There may be wetlands on both sides of dikes that are “rehabilitated” to tidal influence and some fresh water wetlands would become estuarine wetlands and some drained wetlands would again become wetlands.

Response: No change to text required. We agree that there will be some confusion as agency staff and applicants get used to the new terminology. However, for consistency, Ecology has started using the Corps of Engineers definitions of the types of compensatory mitigation, as defined in RGL 02-02. In the letter the Corps redefined the basic types of compensatory mitigation based on the type of activity and whether the compensation will result in net gains in acres or functions. As stated in the document, the re-establishment, of a former wetland, results in a gain in wetland acres and functions, whereas rehabilitation, of a degraded wetland, results in a gain in wetland functions (not acres). Therefore, in the example provided in the comment, the mitigation actions would result in re-establishment of some wetlands and rehabilitation of others. Also, see response to Comment G.23.

P.75 Comment: Enhancement should never be a stand-alone in mitigation. It needs to be combined with restoration or creation that is proven to be successful.

Response: We do not agree that enhancement should never be used alone as mitigation. Generally enhancement will not be allowed as stand alone mitigation, but it still needs to be an option in the “mitigation toolbox.” In the discussion of mitigation preferences the following text has been added to a note box on enhancement, “The agencies prefer that enhancement be used in combination with re-establishment or creation, not alone.” See Comment P.147.

P.76 Comment: Preservation also should very seldom be a stand-alone but combined with restoration or demonstrated successful creation. It should be used more frequently (in combination) than it is to maintain function. For example preservation combined with restoration may be the only way to come close to replacing functions that would take a long time to recover.

Response: The preservation discussions that started on pages 46 and 50 have been combined and edited to clarify the discussion of preservation. The preference is that preservation be done in combination with other forms of mitigation and that preservation alone is allowed only in limited circumstances.

On page 46 it was stated that “The preservation of a high quality wetland in the same watershed where a wetland loss has occurred can be an acceptable form of compensation when done in combination with re-establishment, rehabilitation, creation or enhancement.” In this case re-establishment, rehabilitation, creation or enhancement would need to be done on a separate site and in addition to the preservation area. For example, wetland habitat is preserved as a separate (though perhaps adjacent) site in addition to re-establishing wetlands on a different site. This would be considered preservation in combination with re-establishment. Both sites would need to be protected with a conservation easement or deed restriction. No matter what the mitigation action is, it must be protected in perpetuity and a permit condition is added to address this.

Preservation can stand alone or a “preservation” piece can be “enhanced” (i.e. planting conifers in the understory of a deciduous preservation piece). In this case the applicant is likely to get a better ratio than preservation alone. If the preservation piece of the mitigation is located on a site different from other aspects of the mitigation, then both pieces would have to be protected and recorded against the deed as mitigation. See also Response to Comment P.49.

P.77 Comment: Also refers to pages 41 and 46: The discussion of preservation in this section should be much more circumscribed. Are not the regulations and sequencing supposed to protect the high quality wetlands that are now allowed a preservation under compensatory mitigation” What are we gaining? The statement that “preservation ... may result in a gain in function over the long term” seems a stretch. How is this to be documented? Isn’t this setting a precedent that local agencies will allow preservation instead of the typical creation, restoration, enhancement (establishment, re-establishment, rehabilitation, enhancement)

Response: The discussion of preservation on pages 46 and 51 has been combined and edited to clarify. While preservation activities do not provide any new wetland acreage, preservation can be extremely beneficial if it facilitates the permanent protection of wetland areas that would otherwise not be protected. The functions of some wetlands are not currently fully protected (e.g., the trees of mature and old growth forested wetlands can be harvested legally). See the response to Comment P.49 for a discussion of the use of preservation as mitigation.

P.78 Comment: Under “Rehabilitation “section: “Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres.” Rehabilitation of wetland tracts to offset wetland losses results is a net loss of wetland area.

Response: No change to text required. Rehabilitation can provide ecological benefits that compensate for project impacts, depending on specific circumstances. See response to Comment G.16 (no net loss).

P.79 Comment: Under “Preservation “section: “Preservation does not result in a gain in wetland acres, but may result in a gain in functions over the long term.” Preservation of wetland tracts to offset wetland losses results in a net loss of wetland area.

Response: No change to text required. See response to Comment G.16 (no net loss) and P.49 (preservation).

Page 44

P.80 Comment: Paragraph 3: While re-establishment uses a site which is no longer wetland, rehabilitation involves a site that is still a wetland.” Rehabilitation of wetland tracts to offset wetland losses results is a net loss of wetland area.

Response: No change to text required. Rehabilitation can provide ecological benefits that compensate for project impacts, depending on specific circumstances. See response to Comment G.16 (no net loss).

Page 45

P.81 Comment: Paragraph 1, Sentence 6: It would be helpful to include more information when the preference for creation applies. In cases where a current habitat is productive and successful, creation should never be preferred, as it may disrupt properly functioning habitats.

Response: The text has been revised to clarify, and now reads “Creation, like re-establishment, results in a gain in both wetland area and function but not in areas that were once wetland. Creation is less likely to succeed than restoration and, thus, is less preferred by the agencies than restoration. But this applies only when the created wetland is in an appropriate position in the landscape and would not be established at the cost of another high functioning habitat.”

P.82 Comment: Creation: The Ecology Mitigation study showed that 40% of the created wetlands were not even moderately successful. This is not a high level of success. If approximately half of the functions/area are replaced by creation that should not recommend it as a priority option. Created wetlands can take inputs of energy and need maintenance. Existence can be temporary in a landscape. Created wetlands can fill with sediments in floods. At the very least created wetlands need to demonstrate success. It is true that wetland enhancement is a poor option for mitigating impacts especially when not in conjunction with restoration. It is true that landscape position is key for wetland creation projects but removing a portion of a high quality wetland buffer (upland adjacent to a wetland) to compensate wetland losses may not be a very good option even if successful in creating a wetland.

Response: We acknowledge that creation has not shown a high level of success. Recommendations from the National Research Council on improving the success of creation are

provided in this section. Applicants/consultants proposing creation need to be able to demonstrate that the mitigation actions will be successful and sustainable in the long term.

We agree that removing a portion of a high quality wetland buffer (upland adjacent to a wetland) to compensate wetland losses may not be a very good option even if successful in creating a wetland. The response to Comment P.81 addresses this comment. The text now reads, “Creation, like re-establishment, results in a gain in both wetland area and function but not in areas that were once wetland. Creation is less likely to succeed than restoration and, thus, is less preferred by the agencies than restoration. But this applies only when the created wetland is in an appropriate position in the landscape and would not be established at the cost of another high functioning habitat.” Based on the underlined text, creating a wetland in a portion of a high quality wetland buffer (upland adjacent to a wetland) would not be appropriate.

P. 83 Comment: Paragraph 2: ‘over-engineered structures’ – a major emphasis of USFWS National Wildlife Refuges is often establishing or enhancing wetlands using a variety of methods (dikes, control structures, etc.). These are very effective wetland management tools. In many cases these structures require minimum maintenance, and maintenance that could be reasonably expected of certain public sector applicants and/or mitigation banks. Where these types of structures and engineering can provide long-term functional benefits, they should be an acceptable component of mitigation projects. We cannot expect that in highly modified environments an overly “idealistic” or “purist” approach to designing mitigation will be practicable.

Response: No change to text required. The purpose and operating capacity to maintain and manage wetlands on National Wildlife Refuges (NWR) is different than for most wetland compensation projects. In most cases mitigation sites are not actively maintained over the long term (after regulatory established monitoring period). Since there is not long term maintenance, over-engineered structures should be avoided so that the site will be self-sustaining over the long term. Structures and engineering proposed as a component of mitigation to provide long-term functional benefits in a highly modified environment can be considered on a case by case basis, but are not encouraged by this guidance.

P. 84 Comment: ‘atypical wetlands’ – There is much caution present in this guidance regarding “atypical wetlands”- see my Comment # 19 (page 71) for discussion of this issue.

Response: See comment for page 71 (P.150).

P. 85 Comment: Enhancement: Many wildlife enhancement methods are discussed in: Payne, N. F. 1992. Techniques for Wildlife Habitat Management of Wetlands. McGraw-Hill, New York New York. While presented as methods to modify and enhance wildlife habitat functions, methods discussed in the book would also be expected to modify other wetland functions, often in a beneficial manner. For example, a method that increases water depth and the area of a wetland that is flooded would modify nutrient cycling pathways and increase retention time. These factors could also improve water quality functions (sedimentation and nutrient retention) in a wetland.

Response: Not sure what is intended by this comment. The example provided sounds much like a stormwater detention pond. It is true that opportunities exist for enhancing other functions in addition to habitat functions. The following text has been added to address this point. “Enhancement has historically focused on habitat, but other wetland functions can also be enhanced.”

P.85a Comment: Paragraph 3: Italicize the binomial “*Lythrum salicaria*”

Response: “*Lythrum salicaria*” has been italicized.

P.86 Comment: Paragraph 4: “Many entities have expressed concern over the used of enhancement as the sole methods of compensating for wetland loss because it results in a net loss of wetland area. However, these concerns have been countered by the view that a net gain in functions from enhancement could adequately compensate for wetland loss.” WETNET opposes and challenges this “view”.

Response: The view that “a net gain in functions from enhancement could adequately compensate for wetland loss” is why enhancement used alone has been allowed as compensation. Rethinking this, the statement, which provides the historical context for its use, is unnecessary to the content and intent of the section and has been deleted.

P.87 Comment: Final Paragraph: This paragraph states the concern regarding solely using enhancement for mitigation, as it results in a net loss of wetland area. However, this same argument could be made for rehabilitation and should, therefore, be discussed in that section as well.

Response: The text has been revised to clarify. The following text has been added to Section 5.1.1, *The Difference Between Rehabilitation and Enhancement*, “Rehabilitation and enhancement are similar in that they both involve existing wetlands and, when used to compensate for filling wetlands, result in a net loss of wetland acreage.” In the section on restoration (5.2.1) it is emphasized that “Rehabilitation involves improving or repairing the performance of processes and functions in an existing wetland...”

P.88 Comment: Paragraph 2: It would be nice to add a sentence or two on bioengineering

Response: In follow-up the commenter provided some suggested language, which has been added. “Bioengineered structures of logs or rocks that create contours and mimic natural structures along rivers and shorelines are better than highly engineered structures like walls of riprap or bulkheads. To be successful, creation projects need to be self-sustaining and relatively maintenance free.”

P.89 Comment: Paragraph 3: “*Lythrum salicaria*” and other scientific names should be italicized

Response: The suggested change has been made.

P.90 Comment: Preservation: should add a note that wetlands avoided are not eligible for preservation credit

Response: No change to text required. Wetlands proposed for preservation are all subject to the eligibility criteria laid out in the document (must be under demonstrable threat etc.).

Page 46

P.91 Comment: Preservation: Preservation, even of lower quality wetlands, should be considered valuable and worthy of credit mitigation when this action would achieve watershed restoration goals such as linking habitats, maintaining or improving corridors, and other landscape level functions. Agencies should keep in mind that many lower quality wetlands (early successional

forest, farmed wetlands, etc. will develop higher levels of function over relatively short periods of time (20-50 years) if ongoing disturbances are removed.

Response: No change to text required. One of the criteria for use of preservation as compensation is that “The area proposed for preservation is of high quality or critical for the health of the watershed or sub-basin.” Another consideration is if a site is degraded (low quality) there is an opportunity to “improve” the site and reduce temporal losses by removing the ongoing disturbances through rehabilitation or enhancement. See Response to Comment P.49 for additional discussion concerning preservation.

P.92 Comment: Preservation: Under “Preservation” section: “While preservation activities do not provide any new wetland acreage, preservation can be extremely beneficial if it facilitates permanent protection of wetland areas that would otherwise not be protected.” This could provide an incentive for a private landowner to threaten to develop a sensitive area, and then later receive mitigation credit for simply not developing it. Regardless, preservation of wetland tracts to offset wetland losses results in a net loss of wetland area, in direct contradiction to federal and State policy of NO NET LOSS.

Response: No change to text required. Wetlands proposed for preservation are all subject to the eligibility criteria laid out in the document (must be high quality, under demonstrable threat etc.). “Simply not developing it” would be considered avoidance. The use of preservation of wetland tracts is not in direct contradiction to federal and state policy of no net loss because this policy need not be met on a project by project basis but should be achieved on a programmatic level. See response to Comment G.16 (no net loss) and P.49 (preservation).

Pages 47 - 50

P.93a Comment: I agree that the distinction between rehabilitation and enhancement is difficult. In fact, the difficulty is so great that there is often contention over labeling a project as one versus the other. Although the guideline sets criteria for distinguishing the two, these criteria should only be used as general guidelines.

Response: No change to text required. We agree that there will be some confusion as agency staff and applicants get used to the new terminology and that the criteria for distinguishing between rehabilitation and enhancement should be used as general guidelines.

P.93b Comment: Rehabilitation vs. Enhancement: For several of the listed actions, the ‘less effective actions’ should not be applied at all on any project. In addition, for some actions listed it would be difficult to determine whether they will occur or not prior to project approval and labeling as rehabilitation or enhancement. For instance, a plan may intend to fully restore water flow, but fail and only partially or incorrectly restore flow. If such a project had been called rehabilitation, will it be relabeled as enhancement?

Response: The revised document has been re-organized. Chapter 5, *Types of Compensatory Mitigation*, provides definitions and brief explanations of the types of compensation (re-establishment, rehabilitation, enhancement, preservation, etc.). The discussion and tables of more effective and less effective actions has been moved to Appendix H, *Examples of Compensation Actions and Their Relative Effectiveness*.

The label isn’t as important as what was accomplished. The terms rehabilitation and enhancement were defined in the Corps RGL 02-02 in order to help track the gain in functions

and area as a result of mitigation actions. If a project proposes to rehabilitate a ditched or tiled pasture in order to restore water flow, the project would most likely have performance standards to ensure that tiles have indeed been broken and ditches adequately plugged. The project is still rehabilitation so long as the performance standards are met, even if this does not result in the anticipated water regime. If, however, the tiles have not been adequately broken and water is still flowing through them, agencies would probably require contingency measures to address this issue. If the mitigation is failing and the applicant takes no action to correct it (even though directed to do so), the Corps can modify, suspend or revoke a permit.

P.94 Comment: Rehabilitation and Enhancement: It seems there is significant difference between a component of restoration that you now term rehabilitation (removing a dike and plugging drainage and restoring tidal hydrology to a system that contains some existing freshwater wetlands). “Rehabilitation” is full restoration of hydrology. Enhancement is improving a feature or function, for example, ponding water for longer periods with a water control structure or establishing a new vegetation class (Cowardin, 1979) for example, a forested component; digging a pond to create an open water component, removing invasive vegetation, installing nest boxes and raptor perches, having a wildlife food plot such as barley, buckwheat or corn in vicinity of the wetland or pond to attract particular species.

Response: No change to text required. In the section on the distinction between rehabilitation and enhancement it is stated that rehabilitation and enhancement aren’t separated by a distinct line, but rather the mitigation actions exist on a continuum. We agree that full restoration of hydrology to an existing wetland would be considered rehabilitation (on the far end of the continuum) and that improving a single feature or function would be considered enhancement (the other far end of the continuum). However, there are many possible actions that fall somewhere in-between. Appendix H provides a list of potential compensation actions and their relative effectiveness, which provides some guidance on where an activity may fall on the continuum.

P.95 Comment: Rehabilitation/Enhancement, Tables 4 and 5 (starting on page 47 though 50):

These pages address two distinct topics. First, they try to distinguish between rehabilitation and enhancement. Second, they discuss effective and less effective mitigation actions. A new heading relating to the effectiveness of mitigation actions should be added to clearly distinguish between the two issues.

Response: The revised document has been re-organized. The discussion and tables of more effective and less effective actions has been moved to Appendix H and re-named, *Examples of Compensation Actions and Their Relative Effectiveness*. The discussion still incorporates rehabilitation and enhancement as well as more effective and less effective actions. The purpose of this discussion is to explain that rehabilitation and enhancement span a continuum of activities that cannot be defined by specific criteria and may overlap. It is therefore more important for applicants to focus on the ecological effectiveness of the proposed activities and put less emphasis on what the compensation action may be called. See Comments P.93b and P.94.

P.96 Comment: Enhancement vs. rehabilitation: The distinction between enhancement and rehabilitation is not clearly made, and may be incorrect as presented. There is not really a “continuum” or “blending” between enhancement and rehabilitation. Rehabilitation is returning a wetland to a former natural condition, or returning/increasing functions to a wetland.

Enhancement is different, in that is adding functions that were not previously present in a wetland.

Rehabilitation can be a continuum between a complete restoration of all functions, or a partial restoration of only a subset of the functions/attributes that may have previously existed on a site.

There is no reason why enhancement actions cannot focus on larger scale environmental processes, just as rehabilitation actions might.

For example, due to development, all natural seasonally flooded depression wetlands in a valley have been filled, and all amphibian-breeding habitat has been lost. There are not reasonable rehabilitation or restoration options in this valley. The adjacent forested slope wetlands lack breeding habitat, and nearby forestlands are thus devoid of amphibians. Excavating 0.25 acre seasonally flooded wetlands in the forested wetland could create breeding habitat, and allow dispersal to adjacent forests, with a good probability of restoring amphibian populations to the area. In the “wetland regulatory world”, this action would be considered an enhancement, because it would be adding a function that did not previously existed in the wetland. From a larger, ecosystem perspective, the action would address a larger environmental issue by restoring food webs and diversity to the local ecosystems.

Response: In the revised document definitions of compensation types are provided in Section 5.1. From the USACOE, enhancement is defined as: “The manipulation of the physical, chemical, or biological characteristics of a wetland to heighten, intensify or improve specific function(s)... Enhancement results in a change in wetland function(s) and can lead to a decline in other wetland functions.”

We agree that both rehabilitation and enhancement can provide ecologically beneficial compensation depending on project specific circumstances. However, we disagree that enhancement addresses environmental processes. In the example provided in the comment above, the addition of structural, “atypical” depressions would enhance the amphibian habitat of the forested, slope wetland. If amphibian habitat is limiting in the area this may be the most environmentally beneficial compensation. However, this structural enhancement will alter the hydrologic processes of the slope wetland, and may require human intervention to maintain the ponds. See also Comment G.23. Comments P.93-104 are also related to rehabilitation and enhancement.

P.97 Comment: Effectiveness of Mitigation actions: Both rehabilitation and enhancement can use effective or less effective techniques.

Table 5 would be more effective if the types of alterations were categorized into several related groups. I suggest using:

- Hydrologic (the first 7 rows)
- Soil or Substrate (rows 8, 9, 10, 11)
- Vegetation or Biotic (rows 12, 13, 14, 15)

Some alterations cannot always be reversed, and thus it is not always possible for all of the more effective actions to be implemented. Judgments must be made on merits of each project by

considering the level of functions that can be sustained at a site vs. the types and levels of performance impacted.

Response: We agree. The suggested change has been made. In the revised document Table 5 is now Table H-2, located in Appendix H.

P.98 Comment: Enhancement: The related area of discussion is how this applies to the enhancement or restoration definitions in the compensatory/buffer/mitigation section. Is removing invasive species just enhancement, thus the 4x multiplier for mitigation? At what level/composition of invasive species does it become restoration or enhancement?

Response: As stated in the document it is a continuum. The mitigation ratios will be determined based on the mitigation actions. Removal of invasive species is generally considered enhancement, even if the entire site is dominated by invasive species.

P.99 Comment: Pages 47-50: In the new guidelines, the difference between rehabilitation and enhancement is ambiguous, whereas there was a consensus on the terms creation, restoration and enhancement in the old guidelines. Ambiguity in the classification of the mitigation as rehabilitation or enhancement can double or halve the size of a mitigation area. [One staff member] tested the criteria for determining rehabilitation and enhancement (Part 1, Table 4 and 5) using some previous restoration and enhancement projects. It was unclear to him, an experienced wetland ecologist, whether they would be considered rehabilitation or enhancement. As stated in the guidance, “rehabilitation and enhancement aren’t separated by a distinct line”. This continuum lowers the predictability of a consensus between mitigation plan author and regulatory reviewer.

Response: We agree that there will be some confusion as agency staff and applicants get used to the new terminology. However, for consistency, Ecology has started using the Corps of Engineers definitions of the types of compensatory mitigation, as defined in RGL 02-02.

Appendix H in the revised document states, “Proposals that fall within the gray area between rehabilitation and enhancement will result in a mitigation ratio that lies between the ratios for rehabilitation and the ratios for enhancement. The ratios will be based on the ecological effectiveness of the proposed activities. Generally, more effective actions require lower ratios to adequately offset authorized impacts... It is therefore more important for applicants to focus on the effectiveness of the proposed mitigation activities (e.g., will processes be restored, or how much of a gain in functions will result) and put less emphasis on what the compensation action may be called.” Table H-2 in Appendix H contains a list of actions and their relative effectiveness.

The revised document stresses the importance of discussing conceptual mitigation plans with agencies early in the process. We believe this will be particularly important as agencies and applicants begin to discern rehabilitation from enhancement.

P.100 Comment: Pages 47-52: [The commenter] will state again for the record that the use of preservation is not consistent with any policy on NO NET LOSS. Since it is clear that the DOE will continue to allow preservation, we recommend that the mitigation ratios be set VERY high (minimum of 10:1) and that any mitigation package be limited to not more than 15 percent of the acreage to be provided through preservation. Why is preservation of high quality wetland being considered? These wetlands should be protected under Local, State, and federal law already. Why give mitigation credit for something that already has to be set aside?

Response: No change to text required. The discussion of preservation has been combined and edited to clarify. In Section 6.5.5, we provide guidance for mitigation ratios for preservation. In combination with other forms of mitigation it should generally range from 10-to-1 to 20-to-1, as determined on a case-by-case basis, depending on the quality of the wetlands being mitigated and the quality of the wetlands being preserved. As the sole means of mitigation it should generally start at 20-to-1. In some cases preservation as the sole form of compensation may be the most ecologically beneficial mitigation alternative. We do not agree with limiting this option by requiring a maximum percentage. Specific ratios will depend upon the significance of the preservation project and the quality of the wetland resources lost.

“Why give mitigation credit for something that already has to be set aside?” If a wetland has already been set aside then it would not qualify for preservation. See the response to P.49 also related to preservation. See also response to Comment G.16 for a discussion of no net loss.

P.101 Comment: Pages 48-50, Tables 4 and 5: The tables are troublesome. Do the “more effective actions” equate to rehabilitation? And the “less effective actions” equate to enhancement? It is even questionable if the “less effective actions” would ever be appropriate forms of compensation. Please provide more information regarding the application of these tables and strengthen the discussion by providing better linkages to the compensation activities.

Response: The guidance document has been reorganized. Tables 4 and 5 are now Tables H-1 and H-2 in Appendix H, *Examples of Compensation Actions and Their Relative Effectiveness*.

The more effective and less effective actions do not correspond to rehabilitation and enhancement. Appendix H is intended to provide supporting information to help applicants understand that mitigation ratios are affected by the compensation actions being proposed. “Proposals that fall within the gray area between rehabilitation and enhancement will result in a mitigation ratio that lies between the ratios for rehabilitation and the ratios for enhancement. The ratios will be based on the ecological effectiveness of the proposed activities. Generally, more effective actions require lower ratios to adequately offset authorized impacts.”

P.102 Comment: Page 48, Table 4: The term HGM has not been used in the text prior to this table, thus, hydrogeomorphic should be spelled out.

Response: HGM has been spelled out in Table H-1. It is also in the glossary.

P.103 Comment: Page 48-50, Tables 4 and 5: It seems that Ecology is alluding in Tables 4 and 5 that “more effective actions” are rehabilitation and “less effective actions” are enhancement. Perhaps you could make this clearer, and/or even label the columns as such to clarify.

Response: See response to Comment P.101.

P.104 Comment: Page 49, Table 5, Less effective column: At times partial removal of dikes or ditches may be necessary to prevent flooding of adjacent properties. It can still be very effective and important to do. Although full hydrologic restoration (Term is preferable to rehabilitation.) and total dike removal is preferable in estuarine restoration we have not observed fish stranding in partial dike removal as long as there are tidal channels and fish ingress and egress. Partial dike, tiling and ditching removal can be the difference between taking a restoration approach and not taking an restoring components. Some ditches are straightened streams and provide anadromous fish passage and rearing and would not be plugged in a restoration of a piece of property.

Response: We agree. The purpose of these tables is to provide general examples. We do not imply that “less effective” actions are necessarily bad, or should not be implemented. If an applicant has a choice of full removal or partial removal of dikes, full removal will generally provide a greater gain in functions. Obviously there are situations where full removal is not possible. In that case, partial removal is generally preferable to no removal. The ecological effectiveness of compensation actions will be site specific and should be discussed with agency staff on a case-by-case basis.

The guidance document has been reorganized. Tables 4 and 5 are now Tables H-1 and H-2 in Appendix H, *Examples of Compensation Actions and Their Relative Effectiveness*.

Pages 50-54

P.105 Comment: Regarding the use of preservation for mitigation - In general, this section is well presented. It clearly provides critical information and considerations for proponents considering the use of preservation as compensation. Please consider including similar discussions for each of the other compensation activities. Such information would significantly improve the understanding and implementation of compensatory mitigation in Washington.

Response: The lengthy discussion of preservation is provided because preservation is typically the least accepted form compensation since it results in a net loss of both acreage and function. Therefore, specific criteria are provided to help readers understand when it should be used. The other types of compensation are generally accepted, and their appropriate use is determined case-by case based on site location and site design.

Page 51

P. 106 Comment: Grazing, if properly managed and restricted to appropriate soil, can be used in enhancement activities but not restoration in most cases. It should not be part of preservation. WDFW has used cattle to graze properties with reed canarygrass and cattail monotypic stands and has increased sedge and bulrush plant communities in those areas where there was little potential to compact soils. What grazing did not allow was the re-establishment of shrub and forest communities. So while grazing can be a management tool used to keep reed canarygrass short so that wetlands are used by waterfowl and shorebirds or to diversify herbaceous plants in some cases, it is not a restoration tool. It works against restoration of forest communities.

Response: We agree that it is confusing to say “if carefully managed, grazing can help rehabilitate native plant communities on the site” under preservation. This statement has been deleted from the text as it does not add much value.

P.107 Comment: Paragraph 4: “When the site for preservation contains large, diverse buffers that provide exceptional wildlife habitat, agencies may accept portions of the buffer as part of the compensation area.” Not only does use of preservation of wetland tracts to offset wetland losses results in a net loss of wetland area, now the use of buffers (non-wetland areas) is being suggested as providing compensatory mitigation for direct wetland loss. This results in even greater net loss of wetland area.

Response: Decisions as to what constitutes adequate compensation for wetland impacts are made case by case. These decisions are based on replacement of acreage, functions, or both and what provides the greatest environmental benefit. In limited circumstances the greatest

environmental benefit results from a high quality wetland being placed in public ownership or protected by a conservation easement.

Buffers are an important part of maintaining a wetland's function. Giving credit for buffers above and beyond that required by regulatory agencies can provide an incentive to protect or enhance buffers that benefit the wetland by increasing its overall function and value. If the additional buffer increases the chemical, physical, and hydrologic functioning of the wetland, then it warrants and deserves to be considered for additional credit. Otherwise, applicants will offer the bare minimum, which may not be adequate in some instances to effectively protect the wetland. Each situation is reviewed on a case-by-case basis and applicants will need to document the rationale as to why a buffer deserves credit in the compensatory mitigation package associated with a permit application.

The reference to use of buffers as part of the compensation area has been deleted. Refer however to Sections 6.6.4, *Credit for Buffers* for further discussion on when buffer credit may be appropriate. The following text can now be found in Section 6.4.2, *Acceptable Uses of Preservation*, "Areas which provide important habitats and functions as well as those areas contributing to the wetland functions, may be included as part of a preservation package (see Section 6.5.7, *Uplands Used as Compensation*). See also response to Comment G.16 on no net loss.

Page 52

P.108 Comment: Paragraph 1: "Preservation sites may also include non-wetland areas." Again, the use of non-wetland areas is being suggested as providing compensatory mitigation for direct wetland loss. This results in even greater net loss of wetland area.

Response: No change to text required. There are many instances where wetlands and uplands (non-wetland areas) are interspersed on the landscape forming mosaic ecosystems. These systems function as a whole and upland inclusions within the wetland system provide important habitat (among other) functions for certain life cycle stages for both upland and wetland dependent species. Including the upland areas in these mosaic systems for credit makes ecological sense in that these upland areas provide and add to the functioning of the system as a whole. In addition, when the impact site contains a wetland/upland mosaic system, the entire area is considered as the impacted wetland (e.g., the upland inclusions are not separated out for the impact analysis and acreage), for the same reasons as cited above. If preservation is the main component of the compensatory mitigation being offered, then there could be a net loss of area. But because the system as a whole is high functioning and at risk (two factors when considering preservation) and ratios are considerably higher (usually 10-20:1) than other forms of compensatory mitigation, allowing credit for the mosaic should not result in a net loss of function within a particular watershed or sub-basin, especially if the impact acreage included a mosaic system. See also response to Comment P.107.

P.109 Comment: Paragraph 2, Item 3: Under a discussion pertaining to when the use of wetland preservation is considered acceptable for use as compensatory mitigation offsetting wetland loss – "The site is determined to be under imminent threat." As stated above, this could provide an incentive for a private landowner to threaten to develop a sensitive area, thus establishing "imminent threat", and then later receive mitigation credit for simply not developing it. Regardless, preservation of wetland tracts to offset wetland losses results in a net loss of wetland area. Any activity that degrades or destroys wetlands should be regulated if reported and

enforced. Preservation should not be suggested just because agencies are not catching and enforcing activities that cause impacts.

Response: The term “imminent threat” has been changed to “demonstrable threat” to be consistent with the federal guidance on preservation (see the Mitigation Action Plan, <http://www.mitigationactionplan.gov/index.html>) “Demonstrable threat” is defined in the federal guidance as “Clear evidence of destructive land use changes that are consistent with local and regional land use trends, and that are not the consequence of actions under the permit applicant’s control.”

In the scenario mentioned in the comment, landowners would not be in violation of federal law if they legally clear cut a forested wetland without removing the stumps; therefore the agencies could not take enforcement action. If an applicant cuts down a forested wetland and then wants to use it as preservation, it generally would not be acceptable because the site would not meet the criteria for preservation established in the guidance. If the applicant wants to use the area as mitigation and wants to enhance it, the agencies may consider it but it would depend on when the cutting occurred and whether it was deliberate to create a mitigation opportunity where none or little existed before. See also responses to Comments P.49 and P.92.

P.110 Comment: Paragraph 2, Item 4: Under a discussion pertaining to when the use of wetland preservation is considered acceptable for use as compensatory mitigation offsetting wetland loss – “The area proposed for preservation is high quality or critical for the health of the watershed or basin due to its location.” Who determines the high quality status? Property owners who own “high quality” undeveloped land stand to (potentially) gain without developing their property. Like zoning, classification of high quality areas within the watershed could be driven by politics instead of science.

Response: No change to text required. We agree that classification of high quality areas within the watershed could be driven by politics. However, in the mean time there needs to be a mechanism for the protection of high quality wetland systems. There is a list of criteria that helps to clarify what is meant by “high quality.” It is up to the agencies to make the final determination of whether a site meets the criteria. See response to Comment P.49 on preservation.

P.111 Comment: What assurances are in place to insure that the watershed plans adopted by the local jurisdiction(s) are science-based and approved by the Department of Ecology?

Response: We believe this comment refers to the criteria that for a site to be considered high-quality it should have “High regional or watershed importance (e.g., listed as priority site in a watershed or basin plan).” It is beyond the scope of this document to address how local watershed plans will be reviewed and approved. No change to text made.

P.112 Comment: Paragraph 3: “However, in some cases agencies may support preservation areas in urban settings in order to preserve open space and habitat for urban wildlife if the area is under demonstrable threat.” WETNET supports preservation of lands for this purpose, but not when it used as compensatory mitigation resulting in net loss of wetlands.

Response: The text this comment refers to has been deleted from the text.

P.113 Comment: Last bullet: Define “basin”.

Response: See response to Comment G.3.

P.114 Comment: Paragraph 1: Under high quality wetland classification criteria: “High regional or watershed importance (e.g. listed as a priority site in a basin or watershed plan.” As mentioned above, what assurances are in place to insure that the watershed plan adopted by the local jurisdiction(s) are science-based and approved by the Department of Ecology?

Response: It is beyond the scope of this document to address how local watershed plans will be reviewed and approved. No change to text made.

P.115 Comment: Paragraph 1: Under high quality wetland classification criteria: Large size with high species diversity (plant and/or animals) and/or high abundance of native species.” Please define “high abundance.”

Response: There is no prescribed number to define “high abundance” because what constitutes a high abundance of native species in one ecosystem might be a very high number or a very low number in a different ecosystem. No change to text made.

P.116 Comment: Paragraph 3: “Proposals including preservation will generally also need to replace wetland area through creation or restoration (i.e. create or restore one acre of wetland for every acre of wetland lost.)” With the exception of the word “generally”, WETNET supports this position. If this is the position of the Corps and the Department of Ecology, then this needs to be restated through the document when application of compensatory mitigation measures resulting in net loss of wetland area is suggested

Response: No change to the text is required. The word generally is used because this determination will need to be done on a case by case basis. See the response to Comment P.49.

P.117 Comment: Paragraph 2, 3rd bullet: Sites dominated by non-native plants/animal could be worthy sites for rehabilitation.

Response: We agree. No change to text required. Sites dominated by non-native plants/animals are generally undesirable sites for preservation. However, these sites may be desirable for enhancement or rehabilitation actions.

P.118 Comment: Paragraph 1, Bullet #2: Under criteria when use of preservation for compensatory mitigation for wetland loss is acceptable - “Adequate buffer area protects the preservation site from encroachment or degradation by existing and future land uses.” On page 51, it is stated that “agencies may accept portions of the buffer as part of the compensation area.” Could an applicant potentially get credit (sq .ft.) for both the preservation site and the buffer to compensate for wetland loss?

Response: No change to text required. The applicant could get credit for buffers provided as part of a mitigation package that are “above and beyond the minimum buffers required to adequately protect the compensatory wetland...” See response to Comment P.107.

P.119 Comment: Paragraph 4, Bullet #3: Under criteria when use of preservation for compensatory mitigation for wetland loss is most desirable – “The impacts are relatively small.” Please define “relatively.”

Response: Changes to the text have been made. The bullet now reads, “The impact area is small (generally < ½ acre) and/or impacts are occurring to a low- functioning system (Category III or IV wetland).”

P.120 Comment: Paragraph 4, Bullet #7: Under criteria when use of preservation for compensatory mitigation for wetland loss is most desirable – “Higher mitigation ratios are applied.” Please define “higher.”

Response: Changes to the text have been made. The bullet now reads, “Higher mitigation ratios are applied. Mitigation ratios for preservation as the sole means of mitigation shall generally start at 20:1. Specific ratios should depend upon the significance of the preservation project and the quality of the wetland resources lost.

P.121 Comment: Final paragraph, Bullet #4: This bullet should be modified to read: “There are no adverse impacts to habitat for listed species,” as fish species are not the only concern.

Response: The suggested change has been made. The bullet, now in Section 6.4.2.2, reads, “The wetland impacts will not have a significant adverse impact on habitat for listed fish, or other ESA listed species.”

Page 55

P.122 Comment: Paragraph 1: “When regulatory agencies authorize impacts it is usually contingent upon the applicant compensating for lost wetland acreage and functions.” With the exception of the word “usually”, WETNET supports this position. If this is the position of the Corps and the Department of Ecology, then this needs to be restated through the document when application of compensatory mitigation measures resulting in net loss of wetland area is suggested.

Response: The quoted text has been changed to, “Generally, when regulatory agencies authorize impacts it is contingent upon the applicant compensating for lost wetland acreage and/or functions.” Replacing “and” with “and/or” has been made in order to be consistent throughout the document. See Comments P.72 and P.127 and also see the response to Comment G.16 concerning no net loss. In addition, the word “generally” is used because this determination will need to be done on a case by case basis.

P.123 Comment: WHAT ARE THE REQUIREMENTS FOR COMPENSATORY MITIGATION?
The idea that no net loss is a programmatic not a project specific goal is wishful thinking. Is there any evidence for such an assertion?

Response: No change to the text is required. The goal of no net loss established as a recommendation by the Conservation Foundation (1988) was not intended to be met on each individual project. Also, non-regulatory mitigation is also needed to help achieve this goal. There is some evidence that non-regulatory restoration is helping. For example, funding through programs such as the SERF Board and Salmon Recovery (mainly because of the ESA fish listings) is helping to achieve and possibly exceed the goal. Also, the issuance of nationwide permits for restoration (NWP 27) has risen significantly in the past few years. See response to

Comment G.16, which provides more detail and discussion on the topic of no net loss as a programmatic goal. RGL 02-02 also discusses this issue.

P.124 Comment: How accurate are the current methods of functional assessment? Are we indulging in more wishful thinking about the degree of precision we can achieve? Who pays for an extensive functional assessment? Can the regulatory agencies require a certain type of assessment?

Response: No change to text made. We are aware that there are limitations with currently available rapid function assessment methods. These methods have been developed meant to quantify best professional judgment and estimate a relative level of performance and do not measure the actual rates or dynamics of ecological processes occurring in wetlands. For more information and discussion on the benefits and limitations of function assessments, refer to the paper by Tom Hruby entitled “Assessments of Wetland Functions: What They Are and What They Are Not” (Environmental Management Vol. 23, No. 1, pp. 75-85).

Regulatory agencies may request that applicants perform and submit a function assessment of the impact site as well as the proposed compensation site in order to help provide some reasonable assurance that impacts to functions will be adequately compensated. The agencies can require an applicant to perform a functional assessment, but not the use of any specific methodology, if it is necessary to perform an impact analysis for a project. However, if an applicant uses best professional judgment (BPJ) and the information provided is not considered adequate for the agencies to make a decision, the use of quantitative method can be requested. The level of analysis depends on the type and scale of the proposed impacts. BPJ may be appropriate for smaller impacts (<1/4 acre), while a more detailed assessment would be necessary for larger projects. The applicant would need to pay for the assessment (Note: In a few cases when the Corps has disagreed with a submitted quantitative assessment, the Corps has conducted and paid for an additional assessment).

P.125 Comment: Last paragraph: some weird wording here...

Response: The paragraph has been reworded.

Page 56

P.126 Comment: General comment: Please consider providing a link between area and function, as both should be considered in making decisions regarding compensatory mitigation. Some of the models presented in this section may use area to help assess functionality, however, clear linkages on page 56 would be beneficial.

Response: In the revised document wetland functions are generally discussed in Section 2.1 and the requirements for compensation of wetland area and functions are discussed in Section 6.1. In addition, Appendix G discusses how to analyze wetland functions. In general, wetland functions are assessed independent of area.

P.127 Comment: Paragraph 2: “The Corps’ regulatory guidance letter, RGL 02-02, also emphasizes the replacement of both area and functions.” By defining compensation as net gain in area or function, this leaves the door open to offset wetland losses resulting in a net loss of wetland area. Be consistent. [The commenter] supports emphasis on the replacement of both area and functions.

Response: It is clear that the concern is the use of the language “area and function” vs. “area or function” and its relationship to the no net loss policy. In order to be consistent throughout the document the language “area and/or function” will be used. The Corps RGL 02-02 states that “The Corps has traditionally used acres as the standard measure for determining impacts and required mitigation for wetlands and other aquatic resources, primarily because useful functional assessment methods were not available...Districts will determine, on a case-by-case basis, whether to use a functional assessment or acreage surrogates for determining mitigation and for describing authorized impacts.” Also see response to Comments P.72, P.122 and G.16.

Page 57

P.128 Comment: Last paragraph: Many people do not know how to properly use functional analysis. We need to add in a couple of sentences. Suggestion: Modify the next -to-last sentences as follows: “~~However~~, in order to achieve replacement of lost functions, wetland functions must be assessed or measured three ways: at both the impact site, and both pre and post mitigation at the compensatory mitigation site. The difference between the current function of the proposed mitigation site and the same site, post-mitigation, will provide an estimation of the expected “functional lift” possible on the mitigation site. This lift must then be compared to the functions to be lost at the impact site. The mitigation is sufficient only if the lift on the mitigation site is equal to or greater than the loss on the impact site.”

Alternately, (maybe better?) this wording could be placed at the end of the last paragraph on p62

Response: The text has been edited to clarify. See Section 6.1.3.1 for the revised text.

Page 58

P.129 Comment: Paragraph 3: You should mention SAM (Cooke 2000) in this paragraph as a reference with Null as it is a qualitative (or semi-quantitative) method. Sarah Cooke is not recommending that people use this method any more except for slope and estuarine wetlands which have no State method model, but people are using it a lot, so it should be referenced here even though it is described on page 60.

Response: This section has been revised. SAM has been added as an example of qualitative methods in the overview at the beginning of Appendix G, where this section has been moved.

Page 59

P.130 Comment: Paragraph 4: “WAFAM may also be recommended for use on compensatory mitigation sites to determine if lost functions have been replaced or if enhancement actions have resulted in improvements in the level of functions.” Clearly state that when proposed mitigation design water level fluctuations no not exceed 12-inches over baseline conditions, the WAFAM will not accurately account for changes in the level of functions over baseline conditions.

Response: We have revised and reorganized the guidance document. The discussion of how to analyze wetland functions has been moved to Appendix G. The text in the comment has been deleted. The revised text now states that one of the recommended uses for WAFAM is, “Determine if functions lost to impacts have been adequately replaced in compensatory mitigation. (Note: It is not recommended to detect small changes in functions.)”

P.131 Comment: A couple of sentences added at the start of the Existing Methods section to explain the difference between an assessment, a characterization and a rating would be helpful. Although the underlined bold is supposed to point you to the glossary, the repeated underline and bold just looks more like you are trying to emphasize the differences.

Response: In the revised document information on analyzing wetland functions and brief descriptions of methods were moved to Appendix G. A discussion of the differences between the types of wetland function analyses is tangential to the requirements for compensatory mitigation. These terms are italicized the first time they are used indicating that definitions are provided in the glossary.

Page 60

P.132 Comment: Paragraph 7: “SAM is generally not recommended for use on large wetlands impacts or to determine how much enhancement actions have improved the performance of functions.” Please define “large.” Sarah Cooke would like this SAM description to say. “Although SAM is in wide use, the WAFAM method is much more accurate in its ability to characterize the functions and their performance in wetlands and should be used, especially for larger (greater than 1-acre) wetlands.

Response: The suggested change has been made. Note that the list of existing assessment methods and their pros and cons has been moved to Appendix G.

Page 61

P.133 Comment: HGM Brinson 1995: Brinson should not be listed as an assessment method. This document identifies a strategy, using the HGM classification system, for developing assessment procedures.

Response: We agree. The text has been changed to clarify. See Appendix G for the revised language.

P.134 Comment: BPJ: This document should encouraged that BPJ be used in concert with other methods to help define and clarify the functional performance of wetlands. Experienced professionals will be able to clarify the specific types of fish wildlife that may use a wetland, which existing assessments do not address. They will also be able to “fine tune” determinations based specific site conditions of the wetland and adjacent watersheds, rather than rely on the broad generalizations that assessment methods are based on.

Response: The following text has been added to address this comment, “BPJ should also be used in concert with other methods to help define and clarify the functional performance of wetlands, based on specific site conditions of the wetland and adjacent watersheds.” Note that the list of existing assessment methods and their pros and cons has been moved to Appendix G.

Page 62

P.135 Comment: Is the Washington Wetland Rating System really a functional assessment tool? It utilizes functional assessment protocols for some aspects but... You should discuss this with Tom Hruby to be sure this statement is accurate.

Response: The Washington Wetland Rating System is not a function assessment but rather characterizes the functions at the site, which may be adequate for small impacts. See Appendix G for the revised text.

Page 64

P.136 Comment: There should be an entire section on modeling the hydrology of a wetland in order to create, enhance, refurbish, or re-establish a wetland. This is the single most important aspect of developing mitigations and after all this time we are amazed that it is barely mentioned, let alone guidance provided in this document. **[The commenters volunteer] to help write this section as [they teach] classes in how to perform this absolutely necessary step in mitigation plan development.**

Response: We agree that understanding and modeling the hydroperiod is an important aspect of developing compensation sites. Missing the targeted hydrologic regime on sites is one of the big reasons that mitigation fails. However, the emphasis of Part 1 is on policies and on what is required. Hydrologic modeling may be required in order for the agencies to have reasonable assurance that the compensation will be successful, but detailed information about hydrologic monitoring and modeling is beyond the scope of this document. We contacted the commenters several times but they failed to provide us with any assistance in writing the requested language. We, therefore, added a Section (2.2) on the importance of water. Refer to Part 2, which contains technical information on how to develop a mitigation plan and emphasizes the importance of the source of water and the hydroperiod. Also see Comment G.13.

Page 65

P.137 Comment: Paragraph 2: Maintenance, a contingency plan may be required? What are the criteria? Financial Assurances When are performance bonds required? It seems that every permit should have such a financial assurance.

Response: The text has been changed to clarify the discussion of contingency plans. See Section 3.9.3 for the revised text.

Financial assurances are usually handled at the local level. The Corps some times requires a financial assurance, but usually not for public entities. Ecology currently does not have the authority to require, hold, or cash in a performance bond or other forms of financial assurance. Financial assurances are now discussed in Section 3.9.5.

P.138 Comment: Paragraph 2: Underline and bold contingency plan

Response: Contingency plan has been italicized as it is a term found in the glossary.

Page 66

P.139 Comment: It would be beneficial for local agency staff to discuss the theory behind posting a bond (why it is crucial to have money to complete a project should it fail and the owner walk away), and what should be included in the bond estimate (replanting, re-grading if necessary, irrigation, fertilization, monitoring, maintenance). Anything less and the bond has no teeth and does not provide sufficient funds for the work to actually occur. It has become the norm for much of the state for developers to walk away rather than install a mitigation or monitor or maintain a wetland and this is one way we have of insuring that the projects be done and done

correctly. [Staff] at Snohomish County is a local staff person who could be very helpful in developing this text as he has personally experienced the problems behind insufficiently bonding projects.

Response: We contacted the above mentioned staff who unfortunately was not able to provide the requested information within the timeframe for completion of this document. Also see Comment P.137.

P.140 Comment: Long term Protection: For compensatory mitigation projects occurring on state-owned aquatic lands, project proponents must apply for a use-authorization from WDNR for the activity and to ensure long-term protection of the site. Use authorizations can be issued for up to 50 years, depending on the land classification. WDNR is currently drafting a policy and guidelines for issuing use-authorizations related to compensatory mitigation activities.

Response: The suggested text has been added to the discussion of long term protection under legal mechanisms. See Section 3.9.6.2 for the revised text.

P.141 Comment: Paragraph 1: I seem to remember the CWA fine as \$25k, not \$27k?

Response: The text has been changed to \$25,000.

P.142 Comment: change “post a financial assurance” to “provide financial assurance”

Response: The text has been revised. See Section 3.9.5 for the revised text.

P.143 Comment: Meld the “Funding for financial management” section into the following Long Term Protection section...it seems redundant

Response: We do not agree that this is redundant. Under financial assurances it is important to mention the necessity for funding for the long-term management and protection of the site.

Page 67

P.144 Comment: Paragraph 3: first sentence seems disjointed or odd somehow

Response: The sentence has been revised. See Section 3.9.6 for the revised text.

Page 68

P.145 Comment: Fencing: Fencing specifications should be tailored to the protection needs of a site based largely on the potential for human impacts, and the desired functions of a site. If the primary functions to be provided are for small mammals, birds, amphibian, and fish, then a chain-link fence would have little impact on function provided by the mitigation. If the mitigation is to support larger mammals, fencing should not be used, or modified to provide passage. Where mitigation sites are adjacent to grazing lands, smooth wire fencing may not provide adequate protection, and barbwire may be more effective.

Response: Good points. The discussion of fencing has been expanded, including the idea that chain link fences may be okay for some situations and/or for a period of time (e.g., to fence out herbivores until plants get to a certain height or maturity) and that where mitigation sites are adjacent to grazing lands, smooth wire fencing may not provide adequate protection, and barbwire may be more effective.

P.146 Comment: Paragraph 2: This paragraph describes the public notification requirements for individual Section 404 permits. This paragraph should also recognize that issuance of a 404 permit could trigger review under the National Environmental Policy Act, which would provide another venue for public participation and comment.

Response: No change to text made. There is no public review of permit issuance under NEPA.

Page 69

P.147 Comment: Paragraph 4: “For example, a permitted loss of a one-acre wetland may require six acres of enhancement in order to adequately compensate for the loss of functions, has requiring a 6:1 replacement ratio.” And page 72 Basic Assumptions for Using the Guidance on ratios, And Table 6 Enhancement only Column. “The ratio for using enhancement alone, without any replacement of wetland area, is 4 times that for restoration or creation.” And Page 73 Table 6 Enhancement only Column and Table 7 Enhancement Only Column. While the examples present a replacement ratio concept, allowing enhancement alone to “compensate” for wetland losses has created problems (Johnson et al 2002). Replacement of wetland area and functions has not occurred. This has been a problem when function alone has been the goal of compensatory mitigation. Six times zero and four times zero and 24 times zero are still zero in terms of impact compensation.

Response: We disagree. Johnson et al. (2002) recommended that performing enhancement actions on a larger area could result in enough of a gain in functions to compensate for the loss of functions, particularly if the impact site is severely degraded. The guidance on enhancement is meant to encourage applicants to propose activities that are considered “more effective” in terms of providing functions and restoring processes. However, if an activity is clearly enhancement (vs. rehabilitation) using it as the sole compensation activity is discouraged. The following text has been added to the basic assumptions regarding ratios to help clarify this, “Generally the use of enhancement alone as compensation is discouraged. Using enhancement in combination with the replacement of wetland area at a minimum of 1:1 through re-establishment or creation is preferred.” Also see Comment P.75.

Page 70

P. 148 Comment: We recommend a change in the shaded box on page 70, volume 1 to show a direct connection between the existing condition and type of wetland impacted and the proportional amount of mitigation required. For example: the mitigation required for impacts to a “pristine wetland” should be greater than mitigation for impacts to a highly degraded wetland, even though these may have similar vegetation types and wetland category ratings. Similarly, this concept should also be applied to buffer widths. When a project impacts a lower quality wetland with a disturbed buffer, the buffer required on wetland mitigation should be planned to be “proportionate to the proposed loss”, which may be less than the buffer values identified on page 82-86, which appear to be appropriate for pristine and undisturbed wetlands.

Response: We do not agree and therefore no change to the text has been made. First, studies in Washington show that the amount of degradation in a wetland has no correlation with how it functions. A degraded wetland can have a high level for certain functions. The ratios are based on replacing functions not the level of degradation. Second, the buffers proposed for a mitigation site are those needed to protect the functions being proposed for that site. For example, a mitigation proposal might suggest that the compensatory wetland have high habitat functions because that is lacking in the landscape even though the impacted wetland does not

have a high habitat function. This means that the compensatory wetland may need much larger buffers than the impacted wetland to protect the habitat functions for which it is designed.

P.149 Comment: Shaded box: This key legal standard for should be consistently tied to the various key elements of mitigation planning, including replacement ratios, functions provided by mitigation sites, and the adequacy of protective buffers.

Response: We agree. No change to text required. The requirements for compensation described in this section are based on the need for proportional exchange for the proposed impacts in order to provide adequate compensation of wetland area and functions. In addition, the requirements are based on the need for reasonable assurance that the proposed mitigation will result in adequate compensation of area and functions. Also see Comment P.21.

Page 71

P.150 Comment: “Atypical” wetland: Much seems to be made of “atypical” wetlands, and especially that wetland depressions not occur on slopes. The conclusion that depressions do not occur on slopes is not correct. Please review the table on page 4 and criteria S3.2 on page 12 of the *Wetland Rating Form - Western Washington-Draft*. Also, see page 31, pages 61-82, and Figure 35 in *Wetland Rating System - Western Washington-Draft*, April 2004.

Slope/depression wetlands probably more common in glacial terrain, also in mountainous terrain, but I have observed in southern Oregon, vernal pool complexes within gently sloped wetlands. I don’t think there is any reason to consider depressions on gentle slopes as:

- “atypical” in Washington state
- a non-sustainable form of mitigation, when given appropriate site evaluation and planning
- an inferior form of mitigation.

Given adequate analysis and planning, they could provide certain hydrologic, habitat, and water quality functions that could be sustainable and valuable to a watershed.

Response: We agree that depressions in slope could provide certain functions that could be sustainable given that they are appropriate for the landscape setting and are not of an exaggerated morphology. Gwin et. al. 1999 identified 3 regionally atypical HGM classes- depression-in-riverine setting, depression-in-slope setting, and in-stream-depression. Gwin et al. 1999 further described characteristics of atypical HGM classes, including exaggerated morphology and the use of berms. The Western WA rating system states that “Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep)...Slope wetlands usually do not have large depressions within their boundaries, but several slope wetlands in western Washington were found with small depressions that were judged to be large enough to provide some water retention (2 ft across and 6-10 inches deep)... If the slope wetland has depressions they will usually be dispersed throughout most of the wetland area. Depressions may be found near clumps of different vegetation, boulders, or in swales where the slope changes (Figure 35). Heavily grazed slope wetlands often have small depressions created by the cattle.”

The example in the text related to atypical wetlands has been changed. The text now reads, “Creating a depressional wetland by excavating a depression in a riverine overflow channel or creating a depression in an existing slope wetland using an engineered berm to hold water, would both produce atypical wetlands. These would be considered atypical HGM locations for depressional wetlands and, as such, they would be less likely to provide the same functions. Excavating a permanently inundated pond in an existing seasonally saturated or inundated wetland would also result in an atypical wetland.”

The definition for an atypical wetland has also been revised eliminating the example of depressions in a slope as atypical. It now reads, “A wetland whose “design” does not match the type of wetland that would be normally be found in the geomorphic setting of the proposed site (i.e., the water source and hydroperiod proposed for the mitigation site are not typical for the geomorphic setting). Designs that provide exaggerated morphology or require a berm or other engineered structures to hold back water would also be considered atypical.”

P.151 Comment: 1st bullet: The “atypical” issue (see above) and changing the HGM class are 2 differing considerations.

Changing the HGM class of a wetland may indeed be desirable and appropriate. It should be considered as part of an evaluation of mitigation options for a site. A valuable alteration of an HGM class may be converting slope wetlands to riverine wetlands, or depressional riverine wetlands.

For example, excavation of a sloped pasture wetland that is next to a stream but above the active floodplain could create flood storage and enhance many riparian functions that would otherwise be absent. If this stream had historically lost floodplain wetlands, I’m not sure there would be any compelling negative trade-off that warrants outright dismissal. Nor do I see a justification for assigning the resulting mitigation a lower credit ratio.

Response: We agree that the “atypical” issue and changing HGM classes can differ. In the revised document the text in question has been clarified to address this. The revised text can now be found in a shaded box in Section 6.5.2. We disagree, however, with the rest of the comment. Changing the hydrogeomorphic setting of an existing wetland for the purposes of mitigation may result in additional wetland impacts at the mitigation site. The functions provided by the existing “sloped pasture wetland” will be lost and replaced by “flood storage” functions. Furthermore, the environmental processes in the landscape will try to restore the hydrogeomorphic characteristics appropriate for that location. This means that forcing different hydrogeomorphic characteristics on the landscape will require continuous maintenance. This is unlikely to provide adequate compensation for the original wetland impact. This scenario may be allowed in exceptional circumstances. However, it would generally require a greater mitigation ratio to ensure that the wetland acreage and functions lost will be adequately compensated. See also Comment P.150.

P.152 Comment: Paragraph 2: “The goal of compensatory mitigation is generally to replace both the number of wetland acres that would be lost as a result of an activity and the wetland functions that would be impaired or destroyed as a result of this activity.” With the exception of the word “generally”, WETNET supports this position. If this is the position of the Corps and the Department of Ecology, then this needs to be restated through the document when application of compensatory mitigation measures resulting in net loss of wetland area is suggested.

Response: The text this comment refers to has been deleted. In the revised document the discussion of ratios is in Section 6.5, *Identifying the Amount of Compensation (Mitigation Ratios)*. Throughout the text we have clarified that when the agencies authorize wetland impacts, the authorization is contingent upon the applicant compensating for lost or degraded wetland acreage and/or functions. See also Comments P.122 and G.16 on no net loss.

Page 72

P.153 Comment: 5th bullet: Replace “restoration” with re-establishment.

Response: The change has been made.

P.154 Comment: New bullet: An additional consideration is using 1:1 creation or re-establishment in combination with rehabilitation. The amount of rehabilitation provided should be less than that identified for enhancement in column 4 of table 6.

Response: We agree. This idea has been incorporated in to the text. In the bullets in Section 6.5.2.1 the text reads, “Re-establishment or creation can be used in combination with rehabilitation or enhancement.” A new column has been added to Tables 1a and 1b. It provides typical ratios for re-establishment or creation (R/C) and rehabilitation (RH). See also Comment P.161.

P.155 Comment: Last bullet: Revise the second sentence of this bullet to read: “*and do not represent the specific risk or opportunities of any individual project*”:

Response: The suggested change has been made.

P.156 Comment: We question some of the basic assumptions. Why should you be able to replace a Class I wetland with a Class II wetland? This statement is made with very little justification. Please provide the justification or omit this statement.

Response: We have revised the text of the basic assumption in question. The text now reads, “The ratios are based on the assumption that the category and hydrogeomorphic (HGM) class or subclass of the compensation wetland and affected wetland are the same (e.g., impacts to a Category II riverine wetland are compensated by creating, restoring, or enhancing a Category II riverine wetland).”

Pages 73 and 74

P.157 Comment: Tables 6 and 7: In the first column make it clear that you are referring to the existing wetland that will be impacted and not the wetland that will serve as mitigation. This was initially confusing to us because in some cases you are asking for the mitigation wetland to be a higher category wetland than the existing wetland that is being impacted.

Response: We agree. The column title now reads, “Category and Type of Wetland Impacts.”

P.158 Comment: Tables 6 and 7: The ratios in these Tables are simply too high. Mitigation ratios of 24:1 mean that a 0.25 acre wetland impact could require a 6 acre mitigation site. It seems that the high mitigation ratios are a means to discourage impacts to high category wetlands. This might be appropriate as a measure to discourage developers from choosing these sites, but for a public utility, in many cases we are forced to deal with the sites where our facilities were located at a time when impacts to sensitive natural resources were generally not considered. It simply

may not be possible to relocate facilities to avoid wetland impacts. Because avoidance of these areas is not always possible, a more reasonable ratio that would ensure that lost functions are replaced is appropriate. Overcompensation is not appropriate given the goals of compensatory mitigation.

Response: No change to the text required. We recognize that public utilities, in many cases are forced to deal with the sites where the facilities were located at a time when impacts to sensitive natural resources were generally not considered and we also recognize that it simply may not be possible to relocate facilities to avoid wetland impacts.

It is important to note that 24:1 is the ratio used for compensating for wetland impacts to Category I forested wetlands using enhancement only. Enhancement results in a net loss of wetland area and in most cases is not appropriate compensation for the loss of the wetland area and functions associated with a Category I forested wetlands. However, we did not want to eliminate enhancement as a tool for mitigation so it is allowed on a case by case basis at higher ratios. Re-establishment or creation, which would at the very least compensate for the lost area, in most cases is preferable. At a 6:1 ratio for impacts to a Category 1 wetland this would require 1.5 acres of re-establishment or creation.

In addition, other mitigation options (e.g., advanced mitigation, mitigation banking) could be considered when known wetland impacts will occur in the future (avoidance is not an option). Reduced ratios are possible since temporal losses and risk of failure would be reduced. Refer to Section 4.1, *Advance Mitigation*, and Section 4.2.1, *Mitigation Banking*.

P.159 Comment: Table 6, Rehabilitation vs. Enhancement”: The guidance should account for the continuum of distinction between rehabilitation and enhancement by setting replacement ratios for both on a continuum between two endpoints. The endpoints could be the ratios given for rehabilitation and enhancement in Table 6. Although the document discusses how these ratios could be increased or decreased, the discussion does not address how a ratio may be affected by a project that is within the gray area between rehabilitation and enhancement. Instead, the document should address this issue. Such an explanation will ultimately provide more incentive for providing high quality compensatory mitigation, especially on sites that are limited in their potential for rehabilitation, but less limited in their potential for enhancement.

Response: The text states that “the following ratios were developed to provide a starting point for further discussion with each proponent of compensatory mitigation.” The concept of rehabilitation is relatively new and agency staff do not yet know how a ratio may be affected by a project that is within the gray area between rehabilitation and enhancement. In addition, mitigation actions that may warrant a lower ratio in one case may not warrant that ratio in a different case, perhaps due to different landscape positions. In general, the onus will be on applicants to demonstrate how a mitigation proposal will rehabilitate processes, and therefore warrant a lower ratio. A key message of this document is that applicants should arrange a pre-application meeting with agency staff to present a conceptual mitigation plan and get feedback from agency staff early in the process before developing a final mitigation plan. Also see responses to Comments P.93a and b.

P.160 Comment: Tables 6, 7, and 8 (also page 82): Ecology’s classification system considers (see page 1, *Western Washington Rating System-Draft*, April 2004, Ecology).

- Sensitivity to disturbance

- Significance
- Rarity (of wetland type and biota present within)
- Ability to replace
- Overall functions

The system “does not replace a full assessment of functions that may be necessary to plan and monitor compensatory mitigation” (page 1). Each of the factors generates differing needs in terms wetland management and mitigation planning. Planning avoidance, accounting for uncertainty in replacement ratios, and protecting established functions through buffers differ based on the above factors. Since the ecology rating established categories that “blend” these factors, category consists of a heterogeneous mix of wetlands types, often with differing management needs. This makes it difficult to develop prescriptive management guidance based on wetland category (as demonstrated by Tables 6 and 7, where a variety of sub-categorization is needed).

Tables 6 and 7 attempt to base replacement ratios largely based on “ability to replace” and rarity. The ratios presented may be appropriate for pristine wetlands in relatively pristine landscapes, but may not be appropriate for more disturbed wetlands in more disturbed landscapes. Therefore, it would be beneficial to present a range of values, reflecting the true range of conditions that are likely to be encountered when implementing mitigation projects. As noted by Ecology, a full assessment of functions is likely necessary to plan compensatory mitigation, including a determination of the appropriate mitigation ratio.

Table 8 (protective buffers) should largely reflect the rating factor of “sensitivity to disturbance.” Since wetland Categories are not based solely on sensitivity to disturbance, basing buffer widths on wetland category is incorrect. It would be more appropriate to include a range of protective buffers, to reflect the heterogeneity of each wetland category. As noted by Ecology, a full assessment of functions is likely necessary to plan compensatory mitigation, including a determination of the appropriate buffer widths.

Response: We agree that the ratings represent a blend of factors. Ecology has developed more detailed guidance to address the different factors (see Appendix 8-B,C in *Wetlands in Washington State – Volume 2: Guidance for Protecting and Managing Wetlands* [Granger et al. 2005]). The reason we kept the 4 categories, rather than developing 12 or more, was based on the comments and needs of local governments who were involved in developing the rating systems. There was a unanimous request from local governments that we keep the 4 category system and not increase the number of categories. The differences among wetlands within a category are then addressed in the more complex guidance provided.

In the revised document the discussion of mitigation ratios is in Section 6.5. Tables 6 and 7 (now Tables 1a and 1b) have been revised to address a variety of wetland types, not just “for pristine wetlands in relatively pristine landscapes.” In addition, Section 6.5.2.1, *Background and Basic Assumptions for Using the Ratios in Tables 1a and 1b*, identifies the assumptions behind the numeric ratios provided in Tables 1a and 1b. Section 6.5.3.1 provides guidance on increasing or decreasing ratios that deviate from the stated assumptions. “The preceding tables provided typical ratios for permanent impacts to particular wetland types and categories. As noted earlier, they are based on programmatic evaluations of mitigation and are not intended to reflect individual site conditions.” Ultimately, “The ratios provided as guidance in this

document represent what a permit applicant should expect as requirements for compensation, thereby providing some predictability for applicants. However, regulatory agencies may deviate from the guidance. They must make an individual determination on the mitigation ratios required for specific wetland impacts to ensure that the compensation is proportionate to the proposed loss or degradation of wetland area and/or functions” (from text box preceding Tables 1a and 1b).

We have revised the discussion of buffers. Buffers are discussed in Section 6.6. “The widths of buffers are based on three factors: the proposed category of the compensatory wetland, the intensity of the impacts based on adjacent land uses, and the functions or special characteristics of the proposed compensatory wetland that need to be protected as determined through the rating systems.”

P.161 Comment: Table 6: An additional consideration is using 1:1 creation or re-establishment in combination with rehabilitation. The amount of rehabilitation provided should be less than that identified for enhancement in column 4 of table 6.

Response: A column has been added to the table addressing 1:1 creation or re-establishment in combination with rehabilitation. Also, see Comment P.154.

P.162 Comment: Natural Heritage Sites: At least some functions provided by these wetlands are likely replaceable, but probably not all of the functions. To the degree possible, mitigation should focus on replacing those function that can be replaced.

Response: We agree. If impacts occur to Natural Heritage Sites, mitigation should focus on replacing those functions that can be replaced. However, as noted in Section 3.5.1, “For certain wetlands that are rare, sensitive, or hard to replace (e.g., bogs, fens, mature forested wetlands, eelgrass beds, and habitats for unique species or endangered plant populations) avoidance is usually the only step in the mitigation sequence. For more information and further guidance see the *Federal Guidance on Protection and Mitigation of Difficult to Replace Aquatic Resources Under Section 404 of the Clean Water Act*, which was developed as part of the National Wetlands Mitigation Action Plan (<http://www.mitigationactionplan.gov>).” Impacts to such wetlands would therefore result in a net loss of some functions no matter what kind of compensation is proposed. Also see Response to Comment P.163.

P.163 Comment: Bog: There is considerable research, experience, and experimentation on bog restoration that has been performed in northern Europe, Canada, and Minnesota (try a Google search on “peat restoration” and “bog restoration”). While results show complete restoration of all floristic components may not yet be feasible, many functions can be restored. If unavoidable impacts to a bog or peat system were permitted, mitigation should consider the feasibility of retaining the affected peat soils for use in creating a bog ecosystem system.

Response: No change to text required. It is not stated in the text that functions that are provided by bogs cannot be replaced. It is stated that re-establishment or creation is not considered possible (bogs are considered irreplaceable). As far as we know there has been no literature that describes the successful creation of a bog in the Pacific Northwest. However, this does not preclude an applicant/consultant from proposing the creation of a bog provided that they can offer sufficient evidence that it will successfully replace what was lost (the regulatory agencies need reasonable assurance). Also see the response to Comment P.162 for further clarification.

P.164 Comment: In the note to the chart (page 73), it is stated that “in the rare cases when impacts cannot be avoided” What would such circumstance be?

Response: The footnote has been revised and the sentence omitted, “Natural Heritage sites, alkali wetland, and bogs are considered irreplaceable wetlands because they perform some functions that cannot be replaced through compensatory mitigation. Impacts to such wetlands would therefore result in a net loss of some functions no matter what kind of compensation is proposed.” See Comment P.165.

P.165 Comment: Footnote (page 74):** “avoidance is the best option” seems really weak for a natural heritage site! Either omit this sentence or modify it to say these sites must be avoided. period.

Response: The text has been revised and the sentence omitted. See Comment P.164.

P.166 Comment: Bullet #5 in highlighted block: “If the wetland area impacted is replaced at a 1:1 ratio (restoration or creation), the remainder of the area needed for restoration or creation can be replaced by enhancement.” Given the suggested re-establishment or creation ratios in Table 6 (page 75) (which [the commenter] supports), use of enhancement or preservation other suggested mitigation measures can be applied after 1:1 restoration or creation ratio is satisfied given that no net loss of wetland acreage or function is occurring.

Response: We think the commenter means that enhancement and preservation should not be considered without 1:1 replacement of area. Text has been added to clarify that “Generally the use of enhancement alone as compensation is discouraged. Using enhancement in combination with the replacement of wetland area at a minimum of 1:1 through re-establishment or creation is preferred” (see Section 6.5.2.1).” The criteria for use of preservation can be found in Section 6.4. See Responses to Comments P.49 related to preservation and Comment G.16 related to no net loss.

P.167 Comment: In note ** (page 74): Avoidance is the best option—why is it not the only option? By Federal and State law there will be no net loss of wetlands. This statement must be justified in order to be in compliance with law.

Response: In some situations avoidance is not possible because of legal concerns and in other situations avoidance is not the most ecologically beneficial alternative. No net loss is a statewide programmatic policy and a federal goal. It is not law, and it is not meant to apply on a project by project level. See Comments G.16 (no net loss) and P.164 and P.165.

Page 75

P.168 Comment: Ratios: Some of the wetlands we impact are Category IV wetlands that are dominated by monocultures such as reed canarygrass. They were created against a road berm because of inadequate drainage (such as wetlands in the depressions along highways, such as Highway 101). These wetlands function mainly to store and filter water and retain sediment. In this case it is difficult to see why mitigation would require compensation with a higher category wetland, as required by the guidelines. Indeed, if on-site mitigation is required adjacent to a reed canary infested site, it is not practical to envision ever removing dense reed canarygrass. The amount of excavating or herbicide use that it would require would likely be more harmful than having a reed canarygrass area performing the above functions. In situations where reinvasion is inevitable, it seems that resources would be better spent on vegetating wetlands

that are not inundated with nearly impossible to control species. The guidelines do not seem to allow good judgment in this case and seem to require “overcompensation.”

We recognize that replacement ratios may be decreased under some circumstances (pg. 75, Part I) but it is impossible to demonstrate in advance that the three conditions can be met, making the possibility that the ratios would be decreased very unlikely. In this case the creation of a similar sized area with wetland hydrology so that it may store and filter water, stabilized by a fast growing native species, with the understanding that reed canarygrass will likely invade seems appropriate but under the guidelines it is unlikely this practical approach would not be considered acceptable.

Response: We do not see how the guidance would preclude the applicant from doing the suggested mitigation. The ratios in Tables 6 and 7 (now Tables 1a and 1b) are general guidance. They provide a starting point for further discussion based on site specific conditions. The required compensation should represent a roughly proportional exchange for the proposed impacts. Agencies however must have reasonable assurance that impacts to wetland area and functions will be adequately compensated. It is up to applicants to demonstrate that the proposed mitigation will adequately compensate for lost acreage and functions.

P.169 Comment: Tables 6 and 7 (also on page 76): [The commenter] does not support sole use of “Rehabilitation” (column 3) or “Enhancement Only” (column 5) for compensatory mitigation for wetland loss (sq. ft.).

Response: Comment noted. No change to text was made. Both rehabilitation and enhancement can provide ecological benefits that compensate for project impacts, depending on specific circumstances. See response to Comment G.16 (no net loss).

Page 77

P.170 Comment: Last paragraph: Revise 2nd bullet to read – Surface and groundwater flow patterns are maintained or can be restored immediately following construction.

Response: The suggested change has been made. The third bullet, which states “Groundwater flow patterns and how draining the wetlands will be avoided must be identified and described,” has been changed to “Surface and groundwater flow patterns are maintained or can be restored immediately following construction.”

P.171 Comment: Footnote: Revise “However, *if the impacts are to wetlands dominated by non-native vegetation (e.g. blackberry, reed canary grass, or pasture grasses), restoration of the site with native species after construction is generally all that is required*”.

Response: The suggested change has been made. The footnote has been incorporated in to the text and now reads, “If the impacts are to wetlands dominated by non-native vegetation (e.g., blackberry, reed canarygrass, or pasture grasses), restoration of the affected wetland with native species and monitoring after construction is generally all that is required.”

Page 78

P.172 Comment: Paragraph 1, First sentence: the example of converting a forested wetland to a emergent or shrub wetland, seems very inept. Yes, some functions will remain, but at what cost!

Response: Comment noted. No specific change to text requested. Conversion from a forested wetland to an emergent or shrub wetland, for example, may be required for utility corridor projects and mitigation required accordingly.

P.173 Comment: In Summary on Ratios, what does the statement “in general, agencies look more favorably on” mean? Is there a point system? Do other proposals get rejected? Is there competition?

Response: We agree that this was a poor word choice. This summary has been deleted from the text.

****Pages 78-86**

P.174 Comment: The proposed buffers around small wetlands are relatively large when compared to those of large wetlands, further increasing the protection of small wetlands in developed areas. For example, a 0.10-acre wetland that receives a category 2 rating can have over 6.5 acres of protected buffer in Western Washington, and 2.9 acres in Eastern Washington. The guidance in the protection guidelines states that the provided buffer widths are for those wetlands that are high quality that will be protected in the future. This would exclude that majority of buffer areas in developed areas, implying that buffer enhancement should be required as a permit condition of the majority of projects that occur within wetlands or their buffers. This buffer enhancement work, due to the stringent requirements for buffers and their relatively large size, may be more extensive than wetland impacts themselves.

Response: The particular example is unlikely (a 0.10 acre wetland would not likely score enough points to be considered a Category 2 wetland). We do recognize however that there will be cases where small wetlands will require buffers larger than the wetland itself. The relevance of buffers must be determined on a case by case basis.

The buffer section has been revised to reflect best available science (see Section 6.6.1). The widths of buffers are based on three factors: the proposed category of the compensatory wetland, the intensity of the impacts based on adjacent land uses, and the functions or special characteristics of the proposed compensatory wetland that need to be protected as determined through the rating systems. Tables have been added for each Category of wetlands. Buffer widths are also based on the assumption that buffer is vegetated with native plant communities that are appropriate for the ecoregion or with a plant community that provides similar functions. If the buffer is degraded it will not provide the same functions as one that is not. Enhancement may be required depending on the functions intended to be provided by the mitigation site.

We also recognize that providing adequate buffers around compensation sites located in urban and urbanizing areas is a challenge. A new section has been added to the document (Section 6.6.5, *Buffers in Urban Areas*) which addresses this issue.

Page 79

P.175 Comment: Buffers: Buffer areas not only protect wetlands but they are a component of the wetland ecosystem. They assist in determining the functions of wetlands. paragraph 5: “Buffers of one fixed-width may not adequately address issues of habitat fragmentation and population dynamics. Rather it is recommended to have a more flexible approach that allows buffer widths to be varied depending upon site-specific conditions.” Buffers of variable widths also may not address issues of habitat fragmentation. Buffers of fixed widths can be helpful in

providing a measure of predictability. Buffers can be increased as well as decreased with appropriate average to continue to function to meet site-specific conditions when conditions dictate that.

Response: We agree that the required buffer width will depend on the functions that the compensation wetland is proposed to provide. The buffer section has been revised to reflect best available science (see Section 6.6.1). The widths of buffers are based on three factors: the proposed category of the compensatory wetland, the intensity of the impacts based on adjacent land uses, and the functions or special characteristics of the proposed compensatory wetland that need to be protected as determined through the rating systems. Tables have been added for each Category of wetlands. We believe the tables provide guidance and a measure of predictability.

We agree that buffers alone cannot address issues of habitat fragmentation. This section has been revised and the reference to habitat fragmentation has been deleted.

We also agree that “buffers can be increased as well as decreased with appropriate average to continue to function to meet site-specific conditions when conditions dictate them.” See Sections 6.6.1.1, 6.6.1.2, and 6.6.2 which outline specific criteria for determining when reducing, increasing, or averaging buffers are appropriate.

P.176 Comment: Paragraph 1, Second sentence: the word “can” should be replaced with “should” or “will”. Isn’t that the point?

Response: We disagree. The word “can” implies that buffers are able to reduce impacts, now – in the present tense. “Should” implies that buffers ought to reduce impacts, in the future. “Will” implies that buffers have the promise to reduce impacts, in the future. We believe that “can” is the correct verb choice for the context in paragraph 1.

P.177 Comment: Paragraph 3: “Mitigation ratios for preservation as the sole means of mitigation generally start at 20-to-1.” Even though this suggested mitigation is high, WETNET does not support preservation of wetland tracts to offset wetland losses results in a net loss of wetland area.

Response: This comment actually refers to page 77, Replacement Ratios for Preservation. See Responses to Comments P.49 related to preservation and G.16 related to no net loss. .

Page 80-81

P.178 Comment: There are questions raised in the “low intensity land use” category. If plant structure is a habitat buffer component as it frequently is, logging can remove some significant wood structure for very long periods of time. There are many cases where the proposed buffers for logging would not provided needed structure for full function for significant periods of time. For example, 125 foot buffer on a bog or heritage site would not be adequate. Also one needs to look at land use at full build out of an area and not the current situation. The reduced buffers would not be increased when the density of land use increases. We recommend this discussion of buffers based on intensity of land-use not be included in the document

Response: We agree that logging trees creates long-term temporary impacts that affect a variety of functions. The impacts listed can be significant but are unlikely to be mitigated by a wider buffer. The best available science makes it clear that buffer widths should be based, in part, on the type of adjacent land use impacts. Under the Growth Management Act, it is not defensible

to set all buffers based on the greatest possible land use intensity that may occur at some point in the future. The law can only address impacts based on current zoning or proposed actions. We believe the buffer widths recommended in the various tables include the best available science and represent a moderate risk approach.

Page 80

P.179 Comment: Last paragraph: The last paragraph seems to be talking about existing wetlands, not compensatory ones, to which the rest of the buffer context seems to apply. Perhaps this was cut and pasted into this document without double-checking the text of the example.

Response: The text of this section has been edited to clarify that this guidance on buffers is for compensatory mitigation wetlands.

Page 81

P.180 Comment: Text box, number 2: This sentence states that, “The buffer is vegetated with native plant communities that are appropriate for the ecoregions.” Many differing definitions of ecoregions are currently in use; therefore, it would be beneficial to include a footnote for the term that includes the intended definition of ecoregion for this Draft Guidance.

Response: The definition of ecoregion has been added to the text.

P.181 Comment: Buffer widths: The diagram and guidance presented indicates that nutrient removal functions of buffers are related to the slope of a buffer. Specifically, that the relationship between slope and nutrient removal is shown to follow the geometric relationship of right triangles, or Pythagorean’s Theorem:

$$c = \sqrt{a^2+b^2}$$

In reality, it is unlikely such a geometric relationship between buffer width and nutrient removal exists. The presumed relationship may not be protective of water quality as stated.

Wetland buffers should be measured as the horizontal distance from the wetland edge. However, as part of the design of a mitigation site, the potential for offsite areas to generate and distribute uncontrolled surface runoff to the wetland or buffer should be evaluated. If untreated runoff is likely, it should be controlled as part of the mitigation project.

Some of the appropriate considerations are:

- Infiltration capacity of the soil
- Adjacent landuses
- Vegetation cover
- Slope
- Precipitation regime

Some appropriate management considerations to assure water is properly treated and would not erode wetland buffers could include:

- Constructing infiltration facilities at the outer edge of the buffer

- Constructing biofiltration facilities at the outer edge of the buffer
- Constructing biofiltration facilities across the slope of the buffer, to distribute treated water to the wetland
- Constructing a pipe system to convey water away from or across the buffer slope
- Constructing flow dispersion facilities at the outer edge of the buffer

Response: We deleted the text to which this is referring to. We did not say there was a specific geometric relationship. We do recommend that buffers be measured as a horizontal distance from the wetland edge. We concur that slope is not the overriding factor in determining buffer effectiveness. Refer to *Wetlands in Washington State*- Volume 1, Chapter 5 for more information on buffers (Sheldon et al. 2005).

P.182 Comment: Paragraph 6: Buffer acreage beyond the required minimum, however, can be applied toward the acreage requirements for compensation provided that certain conditions are met.” As stated above, the use of buffers (non-wetland areas) is being suggested here as providing compensatory mitigation for direct wetland loss. This results in even greater net loss of wetland area.

Response: This is referring to page 79, paragraph 6. Section 6.5.7 discusses uplands used as compensation and Section 6.6.4 discusses credit for buffers. As stated, the use of buffers and uplands for compensation will be determined case-by-case based on certain conditions. Their use would need to make ecological sense and in most cases, replacement of wetland acreage would be required before any credit for buffers or uplands would be granted. See Response to Comment G.16 on no net loss.

P.183 Comment: Table 8: on the intensity of impacts on wetlands by land use does not include utility line corridors as a land use. The only category that a utility corridor would seem to fall in is the high category (industrial, institutional) because we are not residential, agricultural, or forestry land use. Yet because of the general lack of ongoing activity and disturbance along most utility line corridors it does not seem they should be in the high land use category. Activities such as rebuilding a line are analogous to a logging operation. Please either create a category for utility line corridors (preferred) or include utility corridors within the low impact category. Many wetlands within utility corridors are not disturbed except possibly by roads that also exist for other purposes than for utility line maintenance, such as a logging road, that is used to access the transmission line.

Response: The suggested change has been made. In general, a utility line without a corresponding road would be considered low land use intensity (analogous to a forestry operation where the trees are cut only). If a road is associated with the utility corridor it would be considered moderate land use intensity (analogous to the building of logging roads). The following has been added to the types of land use: “Utility corridor or right-of-way shared by several utilities and including access/maintenance road” (moderate impact category), and “Utility corridor without a maintenance road and little or no vegetation management” (low impact category).

P.184 Comment: Table 8: This table does not reflect the variety of specific impacts associated with various land uses on specific wetland functions. Further, existing and planned site features may be more or less sensitive to specific land-use impacts.

The table also does not consider the project design standards and other mitigation required by most development codes to reduce impacts, particular with regard to water quality and stormwater management controls (both water quality and water quantity).

The buffer size required to provide sustainable wetland functions can best be evaluated on a case-by-case basis.

Response: We agree that buffer sizes will be determined on a case by case basis. This is essentially true for all mitigation requirements. However, the purpose of this guidance document is to provide applicants with some predictability and provide a starting point for further discussion. The buffer section has been revised (see Section 6.6.1). The widths of buffers are based on three factors: the proposed category of the compensatory wetland, the intensity of the impacts based on adjacent land uses, and the functions or special characteristics of the proposed compensatory wetland that need to be protected as determined through the rating systems. Tables have been added for each Category of wetlands. Table 7 (formerly Table 10) in the revised document gives some examples of things that can be done to minimize the effects of the land use disturbances described in Table 2 (formerly Table 8), and thereby allow reductions in buffer width. It is up to the applicant to demonstrate how project design standards and planned site features will minimize indirect impacts to the compensation wetland.

Page 82

P.185 Comment: Table 9: The required buffer widths needed to protect wetlands and wetland mitigation sites will depend on the specific functions the wetlands provide. The wetlands within a wetland category can provide a broad array of functions, with varying sensitivities to off-site landuses. The amount of buffer, for some functions will also depend on site-specific conditions such as the nature and patterns of runoff, or hydrologic sources to a wetland, soil conditions, or other factors.

These buffer values may be appropriate for relatively pristine wetlands in relatively undisturbed environments. However, what is also relevant to planning mitigation is the level of function that is required at a mitigation site required to replace the functions lost by a project.

For example, a wetland in an urban area may meet the Category II criteria, and have limited and disturbed buffers (lets say 50 feet). Per the mitigation standard presented on page 70, that agencies are legally bound to follow, a created Category II wetland 4 times the impact areas with a 300 foot buffer does not seem like reasonable mitigation that is proportionate to the impact. A site-specific analysis approach could help identify a buffering approach to provide a net gain in resource function, which is reasonably proportionate to the impact.

Response: We agree that the required buffer width will depend on the functions that the compensation wetland is proposed to provide. The section on buffers has been revised to reflect the “best available science” found in *Wetlands in Washington State*, Volume 1 (Sheldon et. al 2005) (see Section 6.6.1). The widths of buffers are based on three factors: the proposed category of the compensatory wetland, the intensity of the impacts based on adjacent land uses, and the functions or special characteristics of the proposed compensatory wetland that need to be protected as determined through the rating systems. Tables have been added for each Category of wetlands. This document is guidance and the tables for buffer widths are intended to provide some predictability and a starting point for further discussions. The onus is on the applicant to justify the rationale for a smaller required buffer width for a proposed compensation wetland based on functions etc..

P.186 Comment: Buffer reductions should be permitted based on an evaluation of the impact of a buffer reduction on the actual function provided by a mitigation site, in consideration of the project impacts and mitigation needs.

Response: We agree. The text has been revised to clarify. “In the following situations, buffer widths for compensatory wetlands will generally be smaller than the recommended width. A narrower buffer may be acceptable when it will not result in reduced functions in the compensatory wetland...”

P.187 Comment: Table 9: Why bother with 25’ and 40’?

Response: Wetlands that primarily perform water quality functions generally require a smaller buffer. Buffers as narrow as 25 feet help protect water-quality and quantity functions of wetlands. Category IV wetlands provide minimal functions, particularly wildlife habitat, which is generally provided at a low level. It is wildlife habitat that requires larger buffers.

P.188 Comment: The section on buffer reduction seems wide open to abuse. Condition 1 – 1. What does relatively undisturbed mean? Relative to what? And 2. Should refer to Table 10.

Response: “A narrower buffer may be acceptable when it will not result in reduced functions in the compensatory wetland.” If reduced buffers are proposed, the condition of an adjacent corridor will factor in to the decision of whether functions, particularly for habitat, at the compensatory mitigation site will be reduced. “Relatively undisturbed” is in context to other surrounding land uses etc. The reference to the table has been corrected.

P.189 Comment: Condition 2 - This section is confusing and doesn’t seem to make sense.

Response: This comment referred to page 83. Condition 2 has been deleted. Also see Comments P.190, P.191, and P.193.

Page 83

P.190 Comment: Condition 2: Buffer Widths Where existing Roads or Structures Lie Within the Buffer. All roads have some impacts but the increased use of the road can increase the severity of the impact and distance needed to maintain species such as elk.

Response: We agree that the increased use of roads can increase the degree of impacts and affects on functions, including habitats for species such as elk. Condition 2 applies to existing wetlands and has been deleted. Also see Comments P.189, P.191, and P.193.

P.191 Comment: Final paragraph: The example used for this description should be revised. It currently states that a road-widening project would not likely change the nature or intensity of the impacts from the existing road. This is an erroneous assumption, as the widening of a road and the associated increase in impervious surfaces can produce a substantial increase in the intensity of impacts related to the existing roadway.

Response: This condition has been deleted. See responses to Comments P.189, P.190, and P.193.

P.192 Comment: Condition 3: Where Natural Limits to Buffer Widths exist. Buffers are adjacent uplands that are part of the wetland system and are not deep water habitats adjacent to wetlands.

Response: In the text, buffers are generally defined as vegetated areas adjacent to wetlands. To be consistent therefore the following text has been deleted, “Another example includes wetlands adjacent to open water areas. These wetlands won’t have buffers on the open water side.” Also refer to Section 6.6.3, *Wetlands as Buffers*.

P.193 Comment: Paragraph 1: The situation where a roadway “crosses” a buffer must be considered on a case-by-case basis. If the specific site conditions are such that the buffer functionally ends at the road, than development on the upland side of the road will not degrade wetland functions and should proceed independent of wetland concerns.

Response: We agree. This Condition applies to buffers around existing wetlands and has been deleted from the text. Also see Comment P.189, P.190, and P.191.

P.194 Comment: Buffer averaging: Buffer should be established based on the requirements of wetland functions, and variations in wetland conditions to provide functions, as generally identified in the first 2 bullets. However, where conditions are variable, and smaller buffers are warranted, it seems they could provide adequate protection and be less than the 50 percent tabulated requirement.

Further, if there are science-based differences in the needed buffer widths, as generally noted in the first 2 bullets, that it is clear the wetland would be protected with a variable width buffer. There is no need to “average” the buffer such that its total size equals that of a prescriptive buffer width when a science-based evaluation shows a variable buffer is protective.

A buffer “averaging” approach would be appropriate where, for various other reasons, reductions to the ecologically required buffers were proposed.

Response: We agree that buffers should be based on wetland functions and other site-specific characteristics of the wetland, including the intensity of surrounding land uses. We have revised the section on buffers (see Section 6.6.1). The widths of buffers are based on three factors: the proposed category of the compensatory wetland, the intensity of the impacts based on adjacent land uses, and the functions or special characteristics of the proposed compensatory wetland that need to be protected as determined through the rating systems. We believe that this approach will result in an effective and appropriate buffer in most cases. In addition, the guidance contains language for reducing buffer widths in certain situations where narrower buffers make sense. The guidance also contains provisions for buffer averaging to address two scenarios: when ecological differences in the wetland justify different buffer widths; and when site constraints require different buffer widths. We have also added language addressing the unique challenges of providing adequate buffers in urban settings. It is important to also keep in mind that this document provides guidance, not strict rules, and deviation from the guidance is appropriate when additional, site-specific factors warrant.

P.195 Comment: Buffer averaging: Eliminate the first bullet which would absolutely require that “no feasible alternatives to the site-design can be accomplished without buffer averaging.”

This criterion does not include the possibility that buffer averaging that includes other measures (e.g., enhancement of degraded buffers) could be at least as good a method as strict buffer averaging to protect functions & values. Also, it does not take into account that sometimes buffer averaging can be very minor--e.g., when it ""straightens out"" a buffer that is otherwise very sinuous and difficult to fence.

Response: We disagree. Required buffer widths assume that the buffer is vegetated with native plant communities that are appropriate for the ecoregion, or with a plant community that provides equivalent functions (see text box in Section 6.6.1). Enhancing a degraded buffer does not allow or justify the buffer width to be reduced. Therefore, this is not “at least as good a method as strict buffer averaging to protect functions and values.”

The first bullet would also address minor adjustments to buffer widths to accommodate fencing. If there are no feasible alternatives to the site design to accommodate a fence (if one is needed) then buffer averaging would be allowed provided the other bullets are also met.

Page 87

P.196 Comment: In-kind versus out-of-kind: The Federal government has just released draft guidance on this topic. See: <http://www.mitigationactionplan.gov/040407SiteKindGuidance.html>

Watershed-based wetland evaluation and compensation provide some new opportunities to restore degraded watershed processes and recover limited factors when done in the context of watershed characterization that evaluates movement of water (above and below ground), wood, sediment, nutrients, pollutants and genetic materials and looks at elements such as current impervious surface and impervious surface at full build-out as well as riparian connectivity and aquatic habitat integrity; percent of land in forestry and stream alterations. WSDOT (Dick Gersib) has provided a model looking at compensating for unavoidable highway projects on a watershed basis when it makes the most biological sense to do so. Alternative Mitigation Policy Guidance signed by WSDOT, Ecology and Wildlife allows this to occur in current policy frameworks. There can be cases where off-site compensation can be more sustainable and restore connection between interrupted habitats protect areas of high biodiversity.

Response: Agreed. The document supports the idea that in certain cases off-site compensation makes more ecological sense in a larger watershed context. We have added a reference to the federal guidance on off-site and out-of-kind mitigation developed as part of the Mitigation Action Plan. The agencies support compensatory mitigation that considers functions that are limiting in the watershed and the larger-scale environmental processes.

Page 87-88

P.197 Comment: In-kind These criteria are incompatible with the preservation of high quality wetlands. If a rare wetland is destroyed and another “replaces” it, an irreplaceable loss is allowed. Don’t destroy the high quality wetlands in the first place. Exactly how are these wetlands to be “replaced in-kind”. Such a replacement is virtually impossible. This whole section should be deleted along with the NOTE on page 88.

Response: We disagree with this comment. This section has been reorganized and revised, however no changes to the text have been made based on this comment. Compensatory mitigation is required only after the standard mitigation sequence is applied (i.e., avoidance and minimization are considered first). In cases where it is not practicable to avoid or minimize

impacts to a high-quality wetland, in-kind compensation would be preferred over out-of-kind compensation. The agencies realize that there is risk and often a greater temporal loss associated with compensating for high-quality wetlands, therefore mitigation ratios would be higher. In some cases, it will make sense to preserve a high-quality wetland as compensation for unavoidable impacts to another high-quality wetland. The guidance as written does preclude that and therefore is not incompatible with the preservation of high-quality wetlands.

The note contains information on compensation for impacts to estuarine wetlands. The agencies determined that it was important to emphasize that out-of-kind compensation is rarely acceptable for impacts to estuarine wetlands. However, in rare cases out-of-kind compensation may be environmentally preferable. The Note has not been deleted.

Page 89

P.198 Comment: Out of kind – item 2: Revise to read: “....or species that are limiting ecosystem functions in the watershed?”

Response: We do not understand the comment. No change to text made.

P.199 Comment: *Guidance for deciding on whether to mitigate in kind or out of kind* This list gives the impression that it is the project proponent that is in control of appropriate compensation. Aren't these questions the agencies should be answering or at least the final arbiters?

Response: The section on in-kind and out-of-kind mitigation has been revised (now Section 6.3.2). These are questions that the agencies consider when determining what is appropriate and adequate compensatory mitigation. The text has been changed to reflect this. Also see Comment P.202.

Page 92

P.200 Comment: Off-site compensation...In lieu fee programs were studied by the General Accounting Office and found not to be a good option.

Response: We recognize that the GA review of in-lieu fee programs was not positive. The review of the literature in *Wetlands in Washington State – Volume 1: A Synthesis of the Science* (Chapter 6) says the same thing. There are many reasons why in-lieu programs are not working. There is currently no statewide guidance or a state approved program for the use of in-lieu fees. The agencies hope to learn from the past problems and mistakes discovered in the development of other in-lieu programs, while we develop guidance for an appropriate program in Washington. As with all other off-site compensation options, in-lieu fees would be considered and approved if on-site compensatory mitigation is not environmentally preferable.

P.201 Comment: Final paragraph: This paragraph states that off-site compensation is usually required to be in the same watershed as the impact site. Yet it is important to recognize that the term watershed is rather vague and can be interpreted at many differing scales. For example, one could refer to the South Fork Tilton watershed, which is a tributary to the Tilton River watershed, which is a tributary to the Cowlitz River watershed, which is a tributary to the Columbia River watershed. Therefore, use of a more defined unit such as WRIA, stream order, or another recognized hydrologic unit would make the guidance more explicit.

Response: The document will define the terms “basin (sub-basin)” and “watershed” to be consistent with *Wetlands in Washington State – Volume 1: A Synthesis of the Science* (Sheldon et al. 2005). We will also note that the appropriate scale for projects will vary based on the purpose, proposed functions and wetlands provided, condition of the watershed, and the types of impacts being compensated. However, for the purposes of this document, watershed will be defined as a geographic area of land bounded by topographic high points in which water drains to a common destination. Sub-basin will be defined as a smaller drainage basin that is part of a larger drainage basin or watershed. For example, the watershed of a large river may be composed of several subbasins, one for each of the river’s tributaries. Definitions for watershed and sub-basin will appear in the text in Section 6.3.1.2, *Considerations for Choosing a Location*, and in the Glossary. See also Comments G.3, P.39, P.47, and P.48.

Page 93

P.202 Comment: The sentence “You are encouraged” to answer these questions. Again, it seems to give too much flexibility to the project proponent. Should one answer these or not? Aren’t the agencies the final arbiters?

Response: The text has been changed to clarify. In Section 6.3, the text now reads, “The agencies consider the following questions when evaluating compensatory mitigation proposals for unavoidable impacts to wetlands:...” Also see Comment P.199.

P.203 Comment: The third paragraph begins with “This does not mean, however, that it is always ????? preferable to provide compensation off site. That proves that the rest of the document gives that very impression. It should not. Also, it would be advisable to highlight the second to last sentence, as it is, the sentence is merely an after-thought.

Response: We do not think that the document gives the impression that off-site mitigation is always preferable. The location that makes the most ecological sense is the most preferable. The section on on-site/off-site (now Section 6.3) compensatory mitigation has been revised, including highlighting the 2nd to last sentence concerning preservation of small wetlands in urban areas.

Pages 94-105

P.204 Comment: General: Some of these topics may be more beneficial if they are presented as part of introductory material. Specifically, the sections on project-specific mitigation, programmatic mitigation approaches, and “What are Resource Trade-Offs?” seem to provide critical information after the reader has made it through the first 93 pages of this manual.

Response: We agree. The document has been significantly reorganized. The topics mentioned are now discussed in earlier chapters of the document.

Page 95

P.205 Comment: NOTE: This note is too vague. It would be better to firmly state the good reasons to notify the agencies and the pitfalls if they do not. Also- state which agencies _ e.g., Corps and local jurisdictions.

Response: Comment noted. The box does mention the benefits of setting up a pre-construction meeting and is just meant to note that notifying the agencies is important. The text has been

revised and is now found in Section 6.2. The box reads “Most permits and approvals require applicants to notify the agencies prior to starting on-site construction. For large projects, it is advised that the applicant plan an on-site, pre-construction meeting with the agencies and the contractor who will be implementing the compensatory mitigation plan. This helps to ensure that the contractor understands the site goals and design, the permit conditions, and the expectations of the regulatory agencies.”

P.206 Comment: What is an unavoidable loss or damage to wetlands? Who decides? This frequently used term needs some parameters. It seems that in any particular case the project could be rejected and the loss obviated. So when is it not avoidable?

Response: This refers to the first sentence of the first paragraph under Individual project mitigation. This sentence has been cut from the text. See Comment P.167 related to avoidance.

Page 97

P.207 Comment: Paragraph 2: The establishment of excess mitigation at a site, and using this mitigation as “credits” on future projects may seem to “circumvent” a banking process, but we should be less concerned with process and more concerned with establishing effective wetland mitigation.

Probably many areas with significant mitigation potential are unlikely to ever become part of a mitigation bank. If an applicant successfully provides excess mitigation at such a site, at the time of a one permit, and then at some future date is successful in obtaining a second permit, application of the excess credit to new mitigation requirements seems fair and protective of wetlands. It is beneficial to agencies in that temporal losses are reduced and the risk of failed mitigation is reduced. It seems the environment has gained, agency review time is reduced, overall mitigation costs may be reduced, and permitting delays may be reduced. WHY IS IT ABOUT PROCESS AND NOT ABOUT RESULTS!

Response: Comment noted. No change to text made. Part of the issue is about ensuring a level playing field. Allowing folks to sidestep the banking process and get the same benefits is unfair to the banking community, which ultimately deters people from going through the process to set up a bank. That is why the agencies are not encouraging this approach, but will allow the use of successful, excess mitigation on a case-by-case basis. These ad hoc excess mitigation projects are not tracked and require additional agency resources to determine whether or not there really has been a purposeful increase in wetland area and function that can be used to offset impacts above and beyond the permitted project’s mitigation requirements. In addition, the excess mitigation acreage may not be the most ecologically beneficial alternative for compensation of future impacts. This section has been revised to clarify. See Chapter 4.

Page 98

P.208 Comment: Paragraph 4, 2nd sentence: Add: “agencies” following “regulatory”

Response: The correction has been made.

P.209 Comment: We support the use of in-lieu fee mitigation for the reasons explained above (see general comments). You state that this type of mitigation is acceptable for “small” projects. Please state the acreage amount that is considered small in this instance.

Response: Refer to G.20 (the general comment referred to). We have added a list of additional criteria used to determine when ILF will be approved. See Section 4.2.3.2, *Using In-Lieu Fees for Mitigation*. One criteria is “The permitted impacts for which the ILF compensates are small (generally less than ½ acre) and minor, unless the ILF is a portion of a compensatory mitigation package (mitigation requirements are met by combining several different approaches).” The underlined text addresses the comment. Also, see P.211.

P.210 Comment: Paragraph 3, 1st sentence: Correct spelling of wetlands

Response: Change has been made.

P.211 Comment: It seems that an In-Lieu of Fee program would be most effective in replacing losses that occur from cumulative impacts of projects that fall below permit thresholds. Note there is a small typo on paragraph 2 in the last word of the first line “wtland”

Response: We agree. No change to text required. Permit thresholds are usually set based on administrative reasons (i.e., processing of permits for small impacts to wetlands takes more time and more staff). An in-lieu fee program would be an effective way to compensate for those cumulative losses (impacts) that are currently below the administrative thresholds. The typo has been corrected.

P.212 Comment: In accordance with the recommendations contained in the Regulatory Guidance Letter (fed ILF guidance), we believe that any in-lieu-fee program should, at a minimum:

1. Not be permitted (generally) where mitigation banks with appropriate credits are available;
2. When permitted in the area of an existing mitigation bank, collect contribution amounts that reflect a) the true cost of mitigation to be provided; and b) at ratios higher than those who would use credits from a bank (to account for temporal losses, and other factors);
3. Collect fees only where a suitable mitigation site plan has already been identified and the land secured;
4. Be held to the same performance standards and contingency provisions as mitigation banks;
5. Include a comparable level of financial assurance standards as required for all federally-approved mitigation banks.

Response: We agree. Additional criteria have been added to clarify when the use of ILFs is appropriate. Also, text has been added to clarify that the agencies preference would be to use an existing mitigation bank, if appropriate credits are available.

P.213 Comment: Programmatic Mitigation Area (PMAs) projects, like mitigation banks, constitute an ideal approach for addressing mitigation issues in the context of regional restoration and watershed management strategies. However, if not properly managed, PMAs could also provide a mechanism by which a public agency is able to avoid the risks associated with the MBRT process (i.e. avoid lengthy legal review, avoid cost exposure until enough permits are in to fund the project, no concrete construction schedule, etc.) Further, how can a mitigation banker who must expend 90% of the total bank’s development budget, endure a lengthy regulatory review process prior to his first sale, and be subject to regulatory discretion in approving all future users of the bank be expected to compete [fairly] with a PMA plan that is funded and built on a “pay as you go” basis?

At a minimum, the review standards for PMA projects should be held to the same demanding standards as a mitigation bank – including presentation of project goals, interagency review and approval of design and construction, implementation (i.e. construction) schedule, performance milestones, maintenance and monitoring provisions, contingency measures, permanent protection measures, financial assurances and regulatory review and oversight throughout the life of the project. Without these standards, a banker may be, in effect, “competing” with PMAs for the same compensatory mitigation project. However, the banker is at a distinct disadvantage by being exposed to too many risks in a situation where the appropriate agency with permit review jurisdiction and a specific project to be built is serving as “judge, jury and executioner.”

We propose holding PMA projects to the same rigorous review and performance standards as mitigation banks in order to promote not only a level playing field for bankers to fairly compete in the credit marketplace, but also to encourage the production of future mitigation banks. Without these assurances, private mitigation bankers will be deterred from implementing any mitigation banks. This has proven to be the case in the other parts of the country.

Response: We strongly support the development of wetland mitigation banks and agree that there should be a level playing field. For example, ratios will generally be higher for programmatic mitigation areas than for mitigation banks because the compensation activities are usually done concurrently with project impacts, whereas mitigation banks are done in advance and reduce the amount of temporal loss (equals lower possible ratio). The following text has been added to clarify that programmatic mitigation areas have essentially the same requirements as concurrent compensation. “For an applicant, using a programmatic mitigation site is essentially like doing an individual concurrent mitigation project except that the site location and design have already been identified. The programmatic mitigation sites are subject to the same minimum requirements as other mitigation sites, such as long-term protection, monitoring, restrictions on other activities on the site, etc.”

P.214 Comment: We suggest that you have someone who knows watershed planning in this state to read the document and insert appropriate information where possible.

Response: It is beyond the scope of this document to provide detailed information about watershed planning. The focus of this document is on compensatory mitigation using a regulatory approach. Volume 2 of *Wetlands in Washington State* (management recommendations based on the synthesis of the science in Volume 1) discusses issues of

landscape-scale and watershed planning. In Section 2.3, *Wetlands as Part of the Landscape*, we have provided a reference to this Volume. Also see Comment G.17c.

Page 104

P.215 Comment: Stormwater: One ‘less effective’ action should be modified. Introducing treated storm water as ‘unregulated point source’ should not automatically be considered less effective. In fact, point source flows should be preferable to subsurface infiltration in many cases. Inducing subsurface infiltration generally includes construction of engineered infiltration structures that require regular maintenance to perform at desired levels. Instead, Ecology should be advocating point source introductions with hydraulic controls that moderate flow flashiness. This approach generally requires less on-site construction, less maintenance, less potential for failure, and if done correctly may achieve the desired result: restoration of water flow patterns and an appropriate hydrologic regime.

The ensuing guidance on integrating stormwater and mitigation will benefit from talking with engineers and wetland ecologists who have experience designing and constructing such projects. Also, a literature review on the subject should be helpful. Please let me know if you need any suggestions; I have experience with such projects and I have relevant literature as well.

Response: This comment was referring to Table 5. “Stormwater is treated but introduced as unregulated point source,” is listed as a less effective action. “Treat and introduce as subsurface flow (i.e. infiltration through buffer),” is listed as a more effective action. In general, we agree with the comment. Table 5 (now Table H-2 in Appendix H) is meant to provide general examples of “more effective” vs “less effective” examples. However, what is listed as a “less effective” action may, in certain circumstances, be the most ecologically beneficial alternative. It is up to the applicant to demonstrate how the proposed mitigation actions will compensate for impacts to wetland acreage and functions. Regarding integrating stormwater and wetland mitigation, it is clear that more guidance is necessary for applicants and regulatory agencies. We will continue to work on further guidance for stormwater and wetland mitigation, which may be incorporated into this document as an addendum at a future date. Also, see Comment P.219.

Page 105

P.216 Comment: Paragraph 1: “Resource trade-off decisions can mean the replacement of wetland losses with habitats or ecosystems other than wetlands.” [The commenter] does not support this position.

Response: No change to text required. This comment was actually referring to page 103 – *What are Resource Trade-Offs?*, which is now Section 6.3.2.3, *Out-of-Kind Resource Trade-Offs*. This statement is out of context just by itself. The text goes on to say that, “In some limited cases, however, the agencies have allowed applicants to meet some of their compensatory requirements with non-wetland resources, such as riparian restoration, when the functions provided by those resources are limited in the watershed or are critical for restoring the health and functioning of key environmental processes. When agencies allow resource trade-offs, wetland impacts generally are compensated on a 1 to 1 basis with the non-wetland compensation being used to make up the difference in the mitigation ratios.” Resource trade-offs will be allowed on a case-by-case basis when they make ecological sense in a larger scale context.

P.217 Comment: Paragraph 2: “When agencies allow resource trade-offs, wetland losses are usually required to be replaced on a 1 to 1 basis with the non-wetland compensation being used to make up the difference in the replacement ratios.” [The commenter] can support this position.

Response: Comment noted. No change to text required. This comment was actually referring to page 103 – *What are Resource Trade-Offs?*, which can now be found in Section 6.3.2.3, *Out-of-Kind Resource Trade-Offs*.

P.218 Comment: Paragraph 3: “In some cases, where impacts occur to a highly degraded wetland which provides low levels of wetland functions, it may be environmentally preferable to allow the protection of high quality wetland and upland habitats which are important to the watershed and under threat in lieu of replacing wetlands.” [The commenter] vigorously opposes this position.

Response: This comment was actually referring to page 103 – *What are Resource Trade-Offs?*, which is now Section 6.3.2.3, *Out-of-Kind Resource Trade-Offs*. As stated in this section, “To make reasonable and appropriate decisions on resource trade-offs for wetland compensation, agencies need information to understand the landscape context. The agencies need to have information on the condition and functioning of the watershed or basin in order to determine if the net effect of the trade-off will be positive.” A larger scale analysis is necessary and trade-offs would not be allowed unless they made ecological sense in that context.

Page 106

P.219 Comment: Paragraph 1: “Currently, the agencies are working on guidance for when stormwater facilities may be included as part of a mitigation package and design requirements and recommendations.” Who is working on this? When will a draft be completed? Will the draft guidance document be available for public review (by WETNET)?

Response: This comment was actually referring to page 105 – Stormwater and Wetland Mitigation. Staff from the Corps and Ecology are working on the guidance. This is a complex issue that will take time to develop. The information will be posted on the Wetlands web page. Notices will also be sent to those on the mailing list for Wetland Updates (http://www.ecy.wa.gov/programs/sea/bas_wetlands/maillist.html).

Page 107

P.220 Comment: Sequence mitigation: This is a bit unclear. Change to “... applied to wetland projects before... Applicants must first avoid and minimize impacts to the maximum extent possible before considering mitigation.”

Response: The section has been moved and included as part of the “Key Messages” at the beginning of the document. Some of the suggested text has been added for clarification. The text now reads, *Apply Mitigation Sequencing*- Applicants who propose to alter wetlands must apply mitigation sequencing before determining whether compensatory mitigation is appropriate. They must first avoid and minimize impacts to wetlands and their buffers as much as practicable before proposing compensation for the impacts.”

P.221 Comment: Assess functions: Change sentence 2 to read “~~Often~~ To determine compensation, wetland functions must normally be assessed....”

Response: This section has been moved and included as part of the “Key Messages” at the beginning of the document. The sentence has been revised. The text now reads, “**Assess functions** - If impacts are unavoidable and compensation is required, the agencies typically ask for an assessment of wetland functions to determine the most appropriate compensation for the impacts. An assessment of functions at the proposed compensation site (both before and after mitigation actions are completed) is usually required to determine the relative level of functions that will be provided as compensation.”

Pages 107-109

P.222 Comment: Consider moving this section (or something similar) to the front of the document. It provides valuable information in a concise manner and in essence is like an executive summary.

Response: We agree. This comment refers to the conclusion section of the document. This discussion has been moved to the front as part of the “Key Messages” for the document.

Page 108

P.223 Comment: Include between “consider the Landscape and First look for mitigation sites near the impact: **Consider and Evaluate the Hydrology of the Site** and what the hydrologic regime will be for your target wetland. Expand.

Response: This section has been moved to the front as part of *Key Messages* and expanded. We agree that considering and evaluating the hydrology of the site is an important consideration for developing a compensatory mitigation plan. The following has been added, “**Consider the Source of Water:** Water is the most critical environmental factor in selecting and designing a compensatory mitigation site. Available information on the source of water should therefore be used when selecting and designing mitigation sites. Failure to establish an adequate and self-sustaining source of water is a major reason why compensatory mitigation projects are unsuccessful.” We also emphasize that having a sufficient and sustainable source of water is important throughout the document (see Comments G.13 and P.136). Also see the new Section 2.2, *The Importance of Water*.

Page 111

P.224 Comment: List of Acronyms – Please add WDNR to the list.

Response: The suggested change has been made. WDNR has been added to the acronym list (Note: the Acronym list has been moved to the front of the document after the Table of Contents).

P.225 Comment: Acronyms - - add under RGL: Corps Regulatory Guidance Letter

- add: EFH essential fish habitat

- add: NWMAP National wetlands mitigation action plan

Response: RGL, EFH, and NWMAP were already listed as acronyms in the draft. They have been deleted since they are not frequently used throughout the document.

Page 113

P.226 Comment: Needs consistency, see comments for specific definition comments

Response: Specific definition comments were provided on the Part 2 glossary. The suggested changes have been made.

Page 123

P.227 Comment: Other online references: Add in: EPA Watershed Academy (online training courses on wetlands, invasive species, watersheds, etc)
<http://www.epa.gov/OWOW/watershed/wacademy/acad2000/>

Response: This change has been made. A reference to the EPA Watershed Academy has also been added to the Agency Contact information for the Environmental Protection Agency.

Page 139

P.228 Comment: update EPA staff areas (see comments)

Response: This change has been made.

Page 148, Appendix D

P.229 Comment: There are still no guidelines to define an isolated wetland.

Response: Until the issue of isolated wetlands is fully resolved in the courts, the definition of isolated wetlands is likely to continue changing. Our recommendation to readers is to contact their local Corps district office for the most up to date information and definition.

Comments and Responses on Part 2

General Comments

G.1a Comment: The Guidance is very complete and comprehensive and should facilitate better wetland mitigation projects in Washington State. There are recommendations on mitigation and restoration that have come from Environmental Protection Agency, Society of Wetland Scientists, National Academy of Science that it might be helpful to append to the document. We have attached this information for your consideration.

Response: Thanks for the additional information. We have not appended the documents mentioned, however we did consider the information in the updates to the document. Below is a list of the attachments and a brief response:

1. National Academy of Science National Research Council (NRC) report, 2001: *Compensating Wetland Losses Under the Clean Water Act: National Academy of Sciences Report on Wetland Mitigation and Restoration* Press Release and Summary (June 26, 2001).
2. Excerpts from the 2001 NRC report. The entire document can be found at <http://www.nap.edu/books/0309074320/html/>.
3. Printout of definitions of types of mitigation (e.g., restoration, creation, and enhancement) from an EPA Web Page: <http://www.epa.gov/owow/wetlands/restore/defs.html>.
4. Society of Wetland Scientists, Wetlands Concerns Committee, Position Paper on the Definition of Wetland Restoration (August 6, 2000).

There are frequent references to the document mentioned in items 1 and 2 above (*Compensating for Wetland Losses Under the Clean Water Act*, NRC 2001) throughout the document and web links are provided. In Appendix B we provide the NRC's Mitigation Guidelines, "Incorporating the National Research Council's Mitigation Guidelines Into the Clean Water Act Section 404 Program." This document contains much of the same information provided in items 1 and 2 above. The mitigation guidance is consistent with NRC's guidelines and many of the recommendations are incorporated throughout the document.

We considered the definitions provided in items 3 and 4 above. Another commenter also referenced these definitions. To be consistent with the definitions currently being used by the federal agencies, this joint document uses the federal definitions, which are also referenced on the referenced EPA Web Page.

G.1b Comment: We also wondered if there might be many cases where compensatory wetland monitoring might not be phased so that after first year, monitoring might be reduced to plant survival and aerial, overview and transect photographs until year 5 and the same until year 10, 15 and 20 so that monitoring takes place over a longer time period but at reduced levels in interim years.

Response: Frequently, monitoring is phased so that some parameters are monitored more frequently than others and monitoring may take place every other year, etc. This is now reflected in Section 3.6.3.2.

G.2 Comment: Add this info below to both volumes:

EPA Region 10 maintains a Regional Office in Seattle, and small place-based offices in Olympia, WA; Portland, Eugene and La Grande OR; Boise, Prosser and Pocatello ID; Anchorage, Juneau, and Kenai, AK. The Regional Office is located at:

1200 Sixth Ave
Seattle, WA 98101
(1-800-424-4EPA)

The EPA Office of Water also maintains a series of web-based interactive courses called the Watershed Academy. The Academy provides dozens of on-line courses on everything from wetlands and watersheds to invasive species, and includes courses from other federal agencies as well.

To see a catalogue of courses go to

<http://www.epa.gov/owow/watershed/wacademy/catalog.html>

Response: This information has been added to a box in Appendix B, *Agency Contacts*. The link to the catalogue of courses has also been added to the *Tools and On-line Resources* at the end of the document.

G.3 Comment: The requirement for recording restrictive covenants should be placed on an applicant AFTER the mitigation project is complete and should be based on as-built project drawings rather boundary lines shown on final mitigation plans. The timing of the restrictive covenants as shown currently is unrealistic as even with final mitigation plans, there are potential modifications that could result in changes to their boundaries. For example:

- There is the potential that a permitted project is not constructed, were this to occur, the restrictive covenants are not required, and an additional filing would be required to remove the covenants.
- Unknown conditions (potential contaminated soils, changed groundwater conditions, etc.) may be found during construction making a permit modification beneficial. This could alter the mitigation boundaries and require new restrictive covenants.

Given these potential complexities and the need for clear, unambiguous legal descriptions, it seems prudent to make these filings following acceptance of an as-built report.

Response: This document does not require that a restrictive covenant be placed on sites at any particular time. We concur that, in most cases, restrictive covenants should not be recorded until the mitigation project is constructed.

G.4 Comment: (1)You mentioned that you learned a lot in the last 20 years but why don't you have pictures to show good and bad and what was successful. Very boring document (too technical). Non-technical folks will also read this document. (2)Notebook type so easier to update. How will you notify people of updates? By email? I subscribe to Sewer Talk, Water Talk, etc. where

I get questions or updates of regulations by email. Maybe notify mailing list (email) that they can download new updates of guidance document.

Response: This document is aimed at an audience of people engaged in reviewing, designing, and constructing wetland mitigation projects. As such, it is necessarily technical. We have attempted to define technical or unfamiliar terms so that non-technical readers can understand the material. While photographs can make a document look better, they require more time and cost to acquire and produce and they frequently present a misleading image of what “looks good.” We have attempted to focus on the critical factors that contribute to successful mitigation projects and streamline the review and permitting process. We will notify people on our mailing list when updates are available. You can sign up for the Wetland Information Listserv at <http://listserv.wa.gov/archives/wetlands-information.html>. In addition, any updates to the document will be posted at the following web page: <http://www.ecy.wa.gov/programs/sea/wet-updatedocs.htm>.

G.5 Comment: Part 2 of the Draft Guidance is extremely comprehensive and will serve as a valuable resource for compensatory mitigation. It is easy to read, well organized, and offers the appropriate level of detail for the target audience.

Response: Comment noted. We have made revisions to the document and hope that that revised document will prove just as valuable.

G.6 Comment: This section of the guidance relating to the various technical elements of a mitigation proposal is both complete and reflective of both best available science and the shift in focus to restoring landscape processes versus the historical “on-site, in-kind” focus. The comprehensive level of detail presented will greatly help reduce the uncertainty associated with submission and review requirements for future mitigation proposals.

However, there are critical pieces missing from the submission requirements. Specifically, what happens if an applicant proposes the use of a mitigation bank (or an in-lieu-fee, or buy-in into a Programmatic Mitigation Area plan?). What duty is incumbent upon the lead regulatory agency to inform the project applicant of the available options? What are the thresholds that must be met? What does the applicant need to demonstrate to qualify for use of one of these “non-traditional” methods? Granted, as suggested above, many of these programs are still evolving, and at least in the case of mitigation banks, Ecology will be implementing a pilot rule program in July 2004 for the approval of a few mitigation banks to test the rule.

While this uncertainty may be a mitigated risk to a would-be mitigation banker, many permit applicants may not only be discouraged from looking to banks as an available option, but they may also not even know that a bank is available for use. Further, assuming there is a mitigation bank available, an applicant would not know how to petition for its use and seek regulatory closure upon the transfer of credits.

We propose two changes to address these concerns:

- 1) As an interim measure: Within the existing draft guidance document, include a “placeholder” methodology for petitioning for the use of non-traditional mitigation methods (whether a mitigation bank, in-lieu-fee, or Programmatic Mitigation Area plan) to simply inform applicants that these options may be available, and instructions for seeking use of these methods to satisfy mitigation requirements.

2) Long term:

- a. Within the new program: As pilot and/or final rules are implemented for “non-traditional” mitigation methods, include a “mitigation user” section within each program to clearly define how use of the project will be governed. Specifically, applicants need to know:
 - i. Whether there is a qualified non-traditional alternative available;
 - ii. How to apply for use of the non-traditional mitigation method;
 - iii. What are the review thresholds that will govern an applicant’s ability to use the non-traditional mitigation method
 - iv. What guarantee does the applicant have that the non-traditional method will satisfy the mitigation requirement (ie. what happens when/if the rules change?).
- b. Amend this guidance: to reflect additional changes to the mitigation guidance that will both tie back to the new program, and expand upon and more clearly define the “placeholder” interim measures into one, fully integrated guidance document on all available compensatory mitigation options and their requirements.

It is encouraging to witness the shift from restoring “on-site, in-kind” resources (often to the exclusion of otherwise preferable restoration/mitigation sites located nearby) to restoring the natural landscape processes that are being lost as a result of unavoidable impacts to our nation’s wetlands. It is equally encouraging to see non-traditional mitigation methods emerging as available options to ensure higher quality environmental mitigation and greater overall ecological improvement. However, in order for the benefits of non-traditional mitigation methods to be fully realized, the regulatory community must not only allow for the use of these methods, but explain to the public how the process will work with the same care given to the current draft guidance (at issue) for traditional mitigation proposals. By fully instructing permit applicants on the proper use of all of the “tools in the mitigation toolbox,” applicants and regulatory agencies can fully examine all available options and ultimately select the best option that provides for the highest and best quality mitigation.

Response: Part 2 of this document addresses the development of mitigation plans for concurrent compensatory mitigation for individual projects. We have added language in the introduction to this document and in the section containing the outline of what should go in a mitigation plan to clarify that Part 2 addresses concurrent mitigation for individual projects and that applicants should be aware that other mitigation approaches may be available. Part 1 of this document explains the other approaches to mitigation and how the agencies view their use (see Part 1, Chapter 4). As the other mitigation approaches are further developed we will produce additional guidance on their use. In addition, we encourage applicants to approach the agencies with alternative mitigation proposals. The agencies will inform project applicants about any mitigation banks that may be applicable to their projects.

G.7a Comment: Part 2 appears to be very prescriptive, adding a significant level of complexity to the project-planning and compensatory-mitigation processes. Several new information requirements that were previously necessary only in rare instances would now be generally required and are potentially onerous. Examples include the following: water budgets for wetland impact sites, spring and fall vegetation sampling at emergent mitigation sites, outdated and unrealistic

monitoring requirements, and water quality monitoring at mitigation sites. These and other additional new requirements will result in significant increases in staff time and financial costs to develop mitigation.

Response: The document does not contain many new requirements that apply to all projects. The guidance in this document is intended to incorporate new science and lessons from past experience in order to improve the success of wetland mitigation projects. The agencies will only require the types of elements you mention as examples when they are judged to be necessary to ensure project success and where they are judged to be feasible and reasonable.

G.7b Comment: These additional documentation requirements would seem to also require Corps and Ecology staff to review and respond. In our experience, current staffing for post-construction mitigation report analysis and feedback seems to be very limited. Given these limitations, it is unclear how requirements for additional documentation will result in desired improvements in wetland mitigation success rates. We suggest that the Corps and Ecology would have significantly greater effect on the success of wetland mitigation efforts by initiating compliance tracking to ensure that plans are implemented, monitoring reports submitted, and appropriate management activities initiated. This would have beneficial effect of allowing state and federal regulatory staff to focus their attention on applicants and/or projects that are failing to meet performance objectives, without burdening all applicants with excessive and, at times, unnecessary requirements for pre- and post-project documentation.

Response: We concur that adding new requirements to individual mitigation projects will require the regulatory agency staff to spend the necessary time to review and respond. As such, we will not be burdening all applicants with excessive and unnecessary requirements for pre- and post-project documentation. We will only require what is necessary and reasonable: we have no interest in adding to applicants' or agencies' workloads unless it is warranted. We also concur that greater emphasis on agency monitoring of project compliance and success would be of great benefit. To that end, Ecology has received a 3-year grant from the EPA to conduct monitoring of wetland permit compliance and to report on the results of that monitoring.

G.7c Comment: These documents need to include citations throughout. While we understand that Ecology is trying to keep the document readable, it would be beneficial to find some middle ground using numbered citations or something. How will readers learn the details of your suggestions in order to adapt and implement them to the parameters of their particular projects? How will readers learn the science behind, applicability of the science to site-specific conditions, and presumably impetus for, the guidance? Ecology and the Corps should set the example for using the best available science, yet only a few gray literature reports are cited. [The commenter] finds this inappropriate since it is impossible to know where to look if we have questions or wish to establish the scientific basis for the recommendations.

Response: We decided not to add citations throughout this document for two reasons. 1. This document does not contain prescriptive or detailed requirements for science-based measures such as performance standards, planting schemes or soil amendments. It provides general guidance on what factors should be considered in selecting sites, designing projects, etc. and this guidance is based primarily on a few seminal scientific documents that provide recommendations for improving mitigation success. These documents are cited at the beginning of both parts of the document and other key documents are included in a list of references. 2. Adding citations throughout the document would decrease readability and would be repetitive since the key citations are limited to a few documents.

G.7d Comment: In the first half of the document, the plan components discussed (with terms such as "may" and consider") was thoughtful.

In the first half of Part II, don't require a standard format per se, but items that all documents need to include (more like this in the second half). Leave it up to the individual company, agency or author to develop specific format.

Response: The first half of the draft of Part 2 we discuss technical considerations for selecting designing, constructing, and managing mitigation sites. Words like "may" and "consider" were used as not all of the topics discusses would apply to every project. The information in this section is not meant to be documented per se. The recommended outline in the second half lists items that should be included in mitigation plans. One of the key recommendations from the literature and from current regulatory staff is to try to standardize documentation to streamline the review and approval process. If a standard format is used, it will make it much easier for all parties engaged in mitigation to rapidly and efficiently review and comment on mitigation proposals. The order in which the information is presented and the format used in the recommended outline provided (now in Appendix C) is, however, optional and is offered as an example. Because of the wide variety of types and sizes of projects we are not able to provide a list of items that will be required for all projects. Generally, items identified with an asterisk in the Mitigation Checklist are required only for larger, more complex projects. It is important to consult with the agencies early to determine what information they will need for review of a specific project.

G.8 Comment: In this time of shrinking budgets for state regulatory staff and increased time to process permit applications, we are concerned that increasing the complexity of the requirements of the mitigation plan will result in a longer review time. Because the state reviews the application after the ACOE has granted the permit we are sometimes in the position of pleading with the state to complete Section 401 water quality certification so that we can allow contractors to proceed, and work is sometimes delayed. Is there some vehicle to get early concurrence from the state on the mitigation plan, during the ACOE review?

Response: The state does not need to wait until the Corps has issued the permit to review an application or mitigation plan. Many applicants do so out of ignorance or a desire to work with one agency at a time. In other instances, Ecology has issued a 401 certification prior to the Corps completing their review. This document emphasizes the importance of working with all of the regulatory agencies early in the process. Ecology staff will work with applicants concurrent with the Corps process.

Page by Page Comments

Page iii

P.1 Comment (3rd point) **: Complex planting schemes are discouraged. Instead, plantings should be kept simple with attention paid to the basic principles of plant succession. This is a wonderful statement and these agencies should be congratulated on this simple but important point. Perhaps you could expand on what you mean by simple, for example, early successional plantings, fewer planted species overall, one wetland type, etc.

Response: This statement no longer appears in Part 2. The text can be found in the introductory chapter of Part 1, Section 1.3. The text now reads, “The emphasis of mitigation designs should be shifted from climax communities and complex planting schemes to paying attention to the basic principles of plant succession and keeping the planting scheme simple (see Part 2 for more discussion of vegetation).” More information on this appears in Section 3.4.1.3. Also, see Comments P.33a, P.35a.

Page 1

P.2 Comment (3rd paragraph): The first sentence could be expanded to give examples of the problems with past compensatory mitigation so that the reader can better understand the baseline and the reasons for this revision of the guidelines.

Response: This section no longer appears in Part 2. The text can be found in the introductory chapter of Part 1. We added a new section, *Changes in Wetland Mitigation* (Section 1.4), which provides some background and context. Going in to much more detail about the history of mitigation, however, is beyond the scope of this document. It is meant to describe current policies and technical information available.

Page 2

P.3 Comment (footnote #2): Confusing: It is unclear what the “this document” in sentence 3 refers to...the action plan or our guidance. How about changing the third sentence to read: “However, please be aware that the mitigation checklist has been modified to more appropriately reflect the needs of the Corps, EPA and Ecology in Washington State, and the modified version is provided in Appendix H.” (Or use footnote 7 from pg 49...)

Response: The text has been revised. As part of the National Wetlands Mitigation Action Plan (NWMAP), a multi-agency compensatory mitigation plan checklist (Appendix E) was developed at the national level for use by permit applicants, regulatory agencies, and others. It has since been modified for use in Washington State (Appendix D).

Additional information on NWMAP can be found at:
<http://www.mitigationactionplan.gov/index.html>.

An explanation is provided on the cover page for Appendix E. “The checklist, and associated supplement, found in this appendix is one of the products associated with the National Wetlands Mitigation Action Plan (NWMAP). Released on December 26, 2002, the NWMAP identified 17 tasks to complete to improve the effectiveness of compensatory mitigation. One of those

tasks was to develop a model mitigation plan checklist for permit applicants, which is now used by each district of the U.S. Army Corps of Engineers.

The mitigation checklist on the following page was developed at the national level and then modified to more appropriately reflect the needs of the Corps, EPA, and Ecology in Washington State. The modified version is found in Appendix D.”

Page 6

P.4 Comment (2nd paragraph, 2nd bullet point): If the use of HGM is being promoted, training should be made available to agency staff and consultants.

Response: The Department of Ecology will be developing a wetland training curriculum in 2005 and 2006. We will consider this comment when planning and prioritizing the development of wetland training. Updates of training will be sent out to Ecology’s Wetland Information Listserv. You can sign up for the list at <http://listserv.wa.gov/archives/wetlands-information.html>. Many of the trainings will be conducted through the Coastal Training Program so you can check the following web page for a list of upcoming trainings: <http://www.coastaltraining-wa.org/default.asp>.

P.5 Comment (3rd paragraph): The document states that a functional assessment using WAFAM may be required. Does this mean the BPJ is no longer accepted?

Response: It depends on the size and complexity of the project. In Section 3.1.2.1, *Characterizing Wetland and the Function They Provide*, the document states, “At a minimum, the functions provided by the lost or degraded wetland should be described by a qualified wetland professional (see Appendix G, *Hiring a Qualified Wetland Professional*) using best professional judgment (BPJ) or using the 2004 revised wetland rating systems for either eastern or western Washington (Hruby 2004a and 2004b). A detailed *function assessment* may, however, be needed to determine the functions impacted. This will depend on the size of the development project and the size and character of the wetland being altered. One such detailed assessment, mentioned above, is the *Methods for Assessing Wetland Functions* (also known as the Washington State function assessment methods or WFAM [Hruby 1999 and 2000]).”

P.6 Comment (4th paragraph): Like several other paragraphs elsewhere, does not get across the idea that 3 assessments are needed...you need to assess functions on the mitigation site for both pre mitigation and proposed post mitigation conditions, if you want to evaluate the lift on the site. Then the lift (not the post mitigation function) is compared to the impact site, to see if replacement has occurred. Too many people just compare impact and mitigation sites. But if the mitigation site is already highly functioning, there may not be adequate new replacement.

Response: We have revised the text to clarify that three assessments are needed. A shaded box has been added to the end of Section 3.1.2.1, *Characterizing Wetland and the Function They Provide*, which states,

“Three Assessments Are Typically Needed

1. How the functions at the impact site will be affected.
2. Functions of the wetland site used for mitigation prior to its construction, particularly if enhancing or rehabilitating.

3. Functions of the wetland site used for mitigation that will result from the conditions proposed in the mitigation plan (how will the wetland function by the end of the monitoring period based on the proposed mitigation actions?).”

P.7 Comment (Site Selection): This section offers a good discussion on site selection and properly emphasizes its importance in compensatory mitigation.

Response: No change to the document necessary. Selecting an appropriate site is necessary to ensure that the impacts are being adequately compensated for. The site selected should be the one that makes the ecological sense.

Page 7

P.8 Comment (top of page): This states that a watershed context should be used and location of the mitigation site near the impact site may not be desirable. What is the agency guidance? How, when, and by whom will this be determined? What criteria should be used to satisfy this requirement?

Response: A shaded box has been added to provide some additional information (see shaded box in Section 3.3, Selecting sites using a landscape-based approach). New tools are being developed to help make decisions on site selection at the watershed scale. The document provides a list of factors (criteria) that should be considered during site selection. The applicant should provide documentation that they considered those factors in selecting a site and justify that the site makes ecological sense in relation to the impacts and the larger landscape.

P.9 Comment (3rd paragraph): It is important to make sure that proposed mitigation will provide the desired functions and will be ecologically effective over the long-term. At the same time, individual regulators can become very prescriptive about site (permit) requirements. Care should be taken that reasonable goals and objectives and achievable performance measures are not lost during the permit negotiation.

Response: No change to the document is necessary. Section 3.4.2 discusses the development of reasonable goals and objectives and achievable performance standards. When the document is complete, internal training will be provided for the agencies involved in permit review (Corps and Ecology primarily), in order to help eliminate inconsistencies between individual staff. The goal is not to be prescriptive, but to have reasonable assurance that the impacts will be compensated for.

P.10 Comment (paragraph 5 - last paragraph): In Lieu of Fee programs are referenced. It does not seem Washington State yet has an effective In-Lieu of Fee program. It seems that an In-Lieu of Fee program would be most effective in replacing losses that occur from cumulative impacts of projects that fall below permit thresholds.

Response: The option for compensation should be the one that makes the most ecological sense. We agree that in-lieu fee programs would be most effective for cumulative small impacts that could not be effectively replaced with other forms of compensation. In Part 1, Chapter 4, *Approaches to Compensatory Mitigation*, we emphasize that there is currently no state approved in-lieu fee program.

P.11 Comment (note in box): This statement is true. The end result of the mitigation effort should be determined by presence of absence of a wetland. No interim hydrology monitoring is necessary for achieving compliance, only an end of monitoring period jurisdictional wetland determination.

Response: No change to the document is necessary. There are two separate issues here: achievement of wetland area at the end of the monitoring period and achievement of the targeted hydroperiod. At the end of the mitigation monitoring period a wetland delineation should be conducted in order to determine if the required acreage of wetland was established. In Section 3.4.1.1, the text states "The environmental conditions at a site, as well as the project-specific goals, should influence how the project, including its hydroperiod, is designed...The mitigation design should not only ensure there are sufficient amounts of water but also that the hydroperiod is appropriate. The presence of water may produce a wetland, but it is the hydroperiod of a site that affects the functions that will be provided...The hydroperiod should support the goals, objectives, and functions that have been targeted." Therefore, in order to determine if the targeted functions will be provided, some interim hydrologic monitoring may be required.

P.12 Comment (2nd paragraph): Water budgets are unreliable, conceptual, and unnecessary. Consider relying on water table, hydroperiod, catchment, soils, and precipitation/runoff data instead.

Response: We agree. Water budgets have been used in that past as a way to estimate the inflows, outflows, and changes in storage for an area. Many hydrologists now agree that water budgets result in an oversimplification of the information. For example, understanding how human activities change the water budget is important. A water budget in itself is of limited value. After considering this information, water budget has been removed from the text. The text now reads (see Section 3.3.1.1), "The methods used to monitor the water regime will be determined case by case, based on local conditions...An analysis of hydrologic conditions will usually include: examination of the groundwater/water table fluctuations; frequency, depth, duration, and timing of surface inundation (flooding); precipitation and surface runoff data; the area contributing surface water to the wetland (contributing basin); and soil type. If available, data on historic hydrologic conditions of the site, such as aerial photographs, can also help in the analysis. In addition, potential future changes to the water regime due to human activities (e.g., changes in land use), should also be considered (see Section 3.3.1.4, *Land Use*).

P.13 Comment (2nd paragraph, bullet "b"): This statement has problems. Hydric soils are soils that develop under anaerobic conditions (Federal Register, July 13, 1994). Under anaerobic conditions, organic carbon may accumulate. Some amount of organic carbon is necessary to provide an energy source for microbial activity. How the presence of organic matter fosters the development of hydric soil conditions needs further explanation. While the presence of organic matter may help retain moisture in the soil, the presence or absence of organic matter is unlikely to influence whether soil saturated for sufficient periods to become anaerobic.

Response: Thanks for noting the problem with this statement. The statement mentioned in the comment is "Does the soil have organic content? Organic material is often necessary to foster the development of hydric soil conditions. If there is no organic material it may be necessary to augment the soil." This is better stated in the following sentence, which has been added (see Section 3.3.1.2): "What are the levels of organic matter and nutrients in the soil? These

characteristics can often influence the success of plantings and provide certain functions associated with improving water quality. Analysis of organic matter and nutrients should be done, especially if the site has previously been in agricultural production. A soil analysis can also aid in identifying appropriate soil amendments.”

P.14 Comment (point d, last sentence): Add words ripped and before amended so that it reads “can be ripped and compacted.”

Response: The words “ripped and” were added so that the text now reads, “However, compacted soils can be ripped and amended.” See Section 3.3.1.2.

P.15 Comment (item c.): I’d move the part starting with “However, a site downstream....” and insert it after paragraph 4 on page 12...it seems to fit better there

Response: The complete sentence is “However, a site down stream from a contaminated site, such as a dairy, could provide important water quality improvement functions.” It is important to mention this under item c. as well as in the discussion of land use. If the site you are looking at is contaminated with toxic metals or organic compounds then you may want to consider selecting a site downstream. The sentence has been changed to, “However, a site down stream from a contaminated site may still provide important water quality improvement functions, if that is a goal for the compensatory mitigation project.” This paragraph is specifically related to toxic contaminants, therefore the example of a dairy has been deleted from the discussion. See Section 3.3.1.2 for the revised text.

P.16 Comment: There is something wrong with the last part of the last paragraph....

Response: The paragraph was, “Regulatory agencies may or may not require an applicant to provide compensatory mitigation of the same HGM class as the permitted impacts. Replacing the HGM class means that the wetlands are more likely to be functionally equivalent to those lost. However, this assumes that the compensatory wetland is not an atypical HGM class. For example, a depression wetland is lost. And the applicant proposes to excavate a depression in a slope or a floodplain, both of which are atypical hydrogeomorphic locations for a depression (see p. 16, Hydrologic Considerations for a discussion of hydroperiod).” The paragraph has been revised. See Section 3.3.1.3 for the revised text.

Pages 11-12

P.17 Comment (Land Use): In addition to historical, current, and future land use, adjacent land use should also be considered in evaluating the effect on potential compensatory mitigation sites.

Response: Adjacent land uses are addressed in the section on land use. See Section 3.3.1.4.

P.18 Comment (Land Use): Additionally, there should be some discussion on how compensatory mitigation projects may affect current, future, and adjacent land uses. For example, the removal of dikes along a river may restore acres of agricultural land to wetlands but it also may impact current land use along the river by periodic flooding.

Response: The example suggested in the comment has been added to the discussion of land use. See Section 3.3.1.4 for the revised text.

Page 13

P.19 Comment (Habitat Connectivity, last sentence): GIS may not be the only spatial analysis tool that can assist in site location. Edit text to read: “The use of spatial analysis tools (i.e., Geographic Information Systems (GIS)) on a regional...”

Response: The suggested change has been made to the text. See Section 3.3.1.5 for the revised text.

P.20 Comment (last paragraph, (2)) **:: How and by whom is “environmental harm” defined? If native grass seeds cannot be obtained, is it more harmful to allow erosion or to seed with a non-native grass seed mixture?

Response: No change to text required. The term “environmental harm” is used in the National Invasive Species Council definition for invasive species and is not defined. In most cases, erosion control using best management practices is a required condition of a construction permit. Erosion control devices should be suitable to prevent an exceedance of state water quality standards. Regulatory agencies will often recommend a seed mix to prevent erosion until other required planting is completed. Seed mix should not consist of invasive species. In the state of Washington a noxious weed list has been developed which contains species that could be considered “environmentally harmful” (http://www.nwcb.wa.gov/weed_list/weed_listhome.html). Similarly, local weed boards maintain lists (http://www.nwcb.wa.gov/county_bds/county_bd_home.html).

Page 15

P.21 Comment (Site Ownership): Make sure use consistent language in Part 1 page 66 & 67 – long-term protection.

Response: The language has been changed to be consistent with Part 1. See Section 3.3.2.2 for the revised text.

P.22 Comment (Site Ownership): Refer to comments on Part 1 regarding WDNR’s role in authorizing uses on and management of state-owned aquatic lands. Consider adding the following language: “If the mitigation site is proposed to be on state-owned aquatic lands, authorization to use the lands for compensatory mitigation must be issued from the WDNR.”

Response: A shaded box has been added to the section on *Site Ownership* with the above text in quotations. See Section 3.3.2.2 for the added text.

Page 16

P.23 Comment (Introduction, 2nd paragraph): The site design should not be done before the site is chosen. A design concept can be done before choosing the site. We suggest you change the word design in this paragraph to concept. Then the design can be done to meld the site and the concept.

Response: It is agreed that a complete site design should not and cannot be done before the site is chosen. The word concept has been added to the text to clarify this (see Section 3.4 for the revised text).

P.24 Comment (Hydrologic Considerations, 1st paragraph, last sentence) **: This sentence states that there should be inundation or saturation to the surface for 10% of the growing season. A clause in parenthesis states (that generally means about 30 days beginning in mid-March). This would mean that the growing season is 300 days. That may be the case in some select areas of the state, but it is not by any means the norm. We suggest the clause in parentheses be deleted.

Response: The clause in parenthesis has been deleted and replaced with the following text (see Section 3.4.1.1), “The growing season for much of the low elevations of Western WA is considered to be March 1st to October 31st, and inundation or saturation to the surface would be required for about 24 days. The growing season in the rest of the state is highly variable because of the climatic differences between eastern and western Washington. The growing season can range from 100 days in the mountains to close to 300 days on the Pacific coast. The growing season for specific areas can be estimated using the climate data found in most Natural Resources Conservation Service (NRCS) county soil surveys. Contact the local Washington NRCS office or Conservation District for site specific information. The definition of growing season was also added to the glossary.

P.25 Comment (2nd paragraph): This paragraph nicely describes a problem in mitigation. When unrealistic performance measures for invasive species are imposed, such as <10% cover by reed canarygrass or saturation to the surface for 30 consecutive day without regard for drought years, mitigation site designers frequently deepen an excavation to ensure adequate hydrology. The result is an unintended change in HGM class, usually at the expense of emergent wetlands.

Response: No change to text required. As stated in the shaded box in Section 3.3.1.1, “Droughts are not predictable and are always possible. A mitigation site with an adequate source of water, however, should still show wetland characteristics by the end of the monitoring period despite a year or two of drought.” Sites should be designed with this in mind.

P.26 Comment (2nd paragraph) **: (“...wait a year after construction to observe the hydroperiod before planting. In these cases the Corps recommends a seed mix to prevent erosion and limit infestation of invasive species.”) Research shows that grasses are serious competition for nutrients and water with woody plants. Consequently, if we follow this recommendation, we would be planting competition for the other plants we are installing. In addition, there are no guarantees that the year the site is monitored will be a “normal precipitation” year. While some sites may benefit from this management treatment, it is unnecessary for many other sites for which we will have collected one or more year(s) of groundwater data.

Response: This document is guidance and changes to the text (see Section 3.4.1.1) were made to clarify that this recommendation will be made on a case by case basis if it is determined that waiting a year will help ensure that the compensatory mitigation project will be successful. We agree that grasses provide competition for nutrients and water. In most construction projects, however, a seed mix is required to help prevent and control erosion in order that state water quality standards are not exceeded. There are non-competitive species, including annuals that would provide less competition for woody species. Also, you could consider a native wetland seed mix. If there is a concern on a particular project that waiting a year would have a negative affect, options should be discussed with the regulatory agencies. Again, this is guidance and some sites may benefit from this management treatment. Also see response to Comment P.78.

P.27 Comment (1st paragraph): Please provide a reference for the minimum 3% organic content for redoximorphic processes, and its relationship to reduced levels of wetland function. Also, please specify what functions are reduced when <3% organic content is present.

Response: The text referenced has been deleted. See Section 3.4.1.2 for the revised text. We realized that we were providing very specific technical information for some topics and not for others. This document is intended to provide general guidance on what one should consider when developing a compensatory wetland mitigation plan. The point of the referenced paragraph is that organic matter is important and that one may want to consider some kind of organic matter augmentation. The reference for 3% organic content comes from an August 1995 technical paper by Vepraskas et al, entitled “Development of redoximorphic features in constructed wetland soils.” The results of the study “showed that some types of redoximorphic features can form during short periods of inundation when soil organic matter percentages are greater than 3%...Redoximorphic features did not appear to form in materials whose soil organic matter percentages were 1.5% or less.” In addition, a recent report by ELI (“Measuring Mitigation Success: A Review of the Science for Compensatory Mitigation Performance Standards”) suggests that 3% minimum organic content, or a similar threshold could serve as a performance standard.

P.28 Comment (2nd paragraph): The idea of characterizing the soil conditions at a reference wetland for a proposed wetland class at a mitigation site is good. M. Vepraskas (personal communication, Nov. 11, 2003) at North Carolina State has taken the idea a step further, and is recommending a specific plant community that the soil will support. This represents a paradigm shift. In most cases the site designer (and prescriptive regulator) will try to change the soil conditions to support desired plantings, rather than planting species that the soil conditions will support.

Response: We agree that the vegetation and soils should be appropriate for that landscape and that characterizing the vegetation and soils at a reference wetland is one way to help determine what type of soil augmentation may be necessary and what plants would be appropriate. We revised the text to clarify (see Section 3.4.1.2): “The type of organic amendment that should be used will depend on the characteristics of the site and the functions being proposed. A soil sample from a nearby *reference wetland* (i.e., of the same Cowardin and HGM classifications as the proposed compensatory mitigation wetland) may serve as a model to establish the type of soil needed. Soil amendments incorporated into the subsoil should try to duplicate the texture, bulk density, and organic matter content of the reference wetland (see Section 3.4.3, *Using Reference Wetlands for the Design of a Mitigation Site*).”

In addition, in the discussion of vegetation we revised the text (see Section 3.4.1.3) to address this idea. It now reads, “Plants for the wetland mitigation project should be those that tolerate and thrive in the hydroperiod and soils targeted for the site.”

P.29 Comment (3rd paragraph): There is no such thing as *sterile soil* amendments (implying ready for an operating room). You must mean pasteurized (for example, spent mushroom compost is steam pasteurized before selling) or unlikely to carry weed seeds (for example, properly treated compost or baled peatmoss).

Response: Sterile soil is a standard horticultural term which refers to a soil that has been heated to remove plant pathogens. In this case we were referring to soils that are weed-free. The text

has been revised to clarify (see Section 3.4.1.2). It now reads, “To minimize the introduction of plant pathogens and invasive species, sterile and weed-free organic soil amendments (i.e., have been properly composted to kill weed seeds) should be used.

P.30 Comment (3rd paragraph): . . . *applicants may want to look into inoculating the resulting soil with mycorrhizal fauna. Inoculation of mycorrhizae is most effective when used for the recovery and rehabilitation of marginal land, such as subsoil or sterile soil.* The research we have seen makes it clear that it can be beneficial to inoculate poor soils in dry climates. However, the little we have been able to find about inoculating field sites in the coastal PNW shows very mixed results, and the researchers mostly conclude that there is little point to it on the west side of the Cascades unless the disturbance sites are very large and very bare. Since coastal PNW air carries the highest fungal spore load in the world, field sites mostly get inoculated naturally within about one year of disturbance. Question – if it’s not ok to plant non-native or non-local genetics for plants, why would it be ok to bring in non-native or non-local fungal genetics? The inoculum you buy will not be grown from spores collected near your project site, and probably not from WA State, as we know of no labs here producing inoculum.

Response: The text has been changed. We agree that the research has provided mixed results. This document is guidance and we suggest that in some cases inoculating the soil with mycorrhizal fungi may make sense (e.g., salvaged topsoils and/or organic amendments are not readily available or cost prohibitive). The research we found suggests that many mycorrhizal fungi do not disperse with the wind like other types of fungi, but instead move by growing from root to root, or by moving with quantities of soil. Unless the site is within a few feet of healthy native vegetation, mycorrhizal fungi are very unlikely to show up fast enough to benefit plants in the critical early stages. Dr. Mike Amaranthus at Oregon State University (email communication, 10/29/2004) explained that endomycorrhizae (fungus enters the root of the cell) are slow to colonize areas.

In response to the comment on the introduction of non-native or non-local fungal genetics, we revised the text to suggest that the type of inoculant used should be from a local source and be appropriate to the soil type and climate of the site. Mycorrhizal Applications, Inc. out of Oregon has endomycorrhizae that are native to Washington (email communication 10/29/2004). Fungi Perfecti in Olympia also has a native inoculum called MycoGrow (personal communication 10/28/2004). These two companies are doing further research and there may be others.

The text now reads (see Section 3.4.1.2), “In disturbed and/or freshly graded sites, native mycorrhizal fungi are often destroyed or missing. Though the results are mixed, more and more research is being done on the use of mycorrhizae, particularly for the recovery and rehabilitation of marginal land (i.e., very large and bare areas that have sterile soils or subsoil). Some benefits may include improved plant survival, resistance to root disease, building of soil structure by the network of mycorrhizal fungi, increased plant diversity (by allowing survival of seedlings), and resistance to the invasion of weeds (most weeds do not need mycorrhiza and therefore outcompete native species if they are absent).

Salvaged topsoils can be used to introduce mycorrhizal fungi, or they can be added by inoculating the existing subsoils. The mycorrhizae used for the inoculation should be from a local source and be suitable for the soil type and climate of the site. For example, introducing mycorrhizae in areas that are inundated for extended periods of time may not be effective.”

P.31 Comment (5th paragraph, 1st sentence): 2 feet is not a common depth for ripping; we recommend changing 2 feet to 18 inches. Moreover, compaction can be measured and may be shallow. The depth of compaction should be checked in the field and ripped to that depth and a little below.

Response: We made the recommended change. The text now reads (see Section 3.4.1.2), “To loosen and aerate the soil a chisel or ripper shank should be pulled to the depth of compaction, usually about 18 inches. The depth of compaction may be shallow and should be checked in the field and ripped to that level and a little below. Care should be taken to not rip too deep as you wouldn’t want to needlessly disturb subsoil or penetrate an aquatard...”

P.32 Comment (6th paragraph) **: suggests a reed canarygrass control measure of cutting and rolling the sod mat. Where has this method been successfully completed? What is the research behind this method? This is a perfect example of why Ecology needs to give citations throughout the document. Ecology cannot expect applicants to try new things without reading about where innovations have been tried, and how, under what circumstances, etc. It would behoove Ecology to make things as straightforward as possible for applicants to access best available science.

Response: This information came from several wetland mitigation projects in the Whatcom County area. The information is not published and is therefore anecdotal. After reviewing this comment we realized that this example does not add to the discussion of topographic variability and therefore the text has been deleted. The text now reads (see Section 3.4.1.2), “It is also important to establish topographic variations when excavating or re-grading. Minor differences in the topography (microtopography) can result in different hydrological regimes. Thus, re-contouring should be done carefully. Nearby or adjacent *reference wetlands* may aid in planning the elevations that are appropriate for the mitigation site.”

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P.33a Comment (last paragraph) **: *In general, the planting plan should include a diversity of species rather than a monoculture. . . . planting a diversity of species in each proposed cover class (e.g., herbaceous, shrub, tree) helps to ensure that some species will survive and become established. Furthermore, diversity of species generally fosters a diversity of organisms, thereby improving overall wildlife diversity. Good idea but don’t let it contradict your earlier statement that “plantings should be kept simple with attention paid to the basic principles of plant succession.”* (p. iii, 3rd point).

Response: The document has been revised. The concepts of natural recruitment, species diversity, and planting for succession are covered in Section 3.4.1.3, *Vegetation*. We believe the revised text does not contradict the underlined statement. See also Comment P.1.

P.33b Comment (last paragraph): In addition, the second to the last sentence states that diversity of species in each proposed cover class helps to ensure that some species will survive and become established. We agree with and like this statement, and, consequently, question why agencies commonly require 100% survival of the planted material at the end of the first year’s growing season. We have seen some species not do well on a site and negotiated a change with the contractor to replace them under his first year guarantee with species that were doing well. This made the site a little less diverse (by one species), but it was using adaptive management while keeping the desired component (in this case evergreen coniferous trees). So the same idea that the site can and does dictate what will grow should start with the first year and not the second.

Response: Performance standards are not meant to preclude appropriate adaptive management. The 100% survival standard is included mainly because it is the contractor's responsibility to replace dead plants after the first year. We agree that vegetative success should be measured more by success of the original goals of the compensatory mitigation than by the success of individual species. If after the first year it is determined that replacing the dead plants with the same species is not appropriate, this change and the rationale for the change should be documented and discussed in the year 1 monitoring report.

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P.34 Comment (1st paragraph): *Salvaged plants can be stored until needed . . .* Salvaged plants start dying the moment they are dug out of the ground and can only be kept for a limited amount of time without being heeled-in or replanted into a temporary or permanent site.

Response: The text has been changed to clarify the discussion (see Section 3.4.1.3). We agree that salvaged plants cannot be stored until needed if appropriate actions are not taken to keep the roots moist and protected. The text now reads, “If salvaging plants or topsoil it is recommended that the material be moved quickly from the development site to the mitigation site to increase the success of the transplant. If salvaged plants need to be stored it is necessary to keep the roots moist. For short periods of time the salvaged plants can be “heeled-in” to an organic medium. For longer periods of time the salvaged plants should be potted and placed in capillary beds⁶ . . .” (summarized from personal communications with Erica Guttman at the Native Plant Salvage Project and Scott Moore at the Snohomish County Native Plant Program, October 2004).

P.35a Comment (2nd paragraph) **: *In addition, red alder (Alnus rubra) and Oregon Ash (Fraxinus latifolia) do not need to be planted or salvaged if a nearby seed source exists. We are not aware of Oregon ash doing this, although we’d be interested to see it. We have, however, seen natural forested wetlands composed exclusively of Oregon ash. Why is this a problem? Red alder does an excellent job of fulfilling it’s role as a pioneer species in damp to wet disturbed sites. It can rapidly increase nitrogen and organic matter in the soil, thereby making conditions suitable for the later growth of a wide variety of other species. Why is this a problem? Seems to me that you are contradicting your earlier statement that “ plantings should be kept simple with attention paid to the basic principles of plant succession” (p. iii, 3rd point). Consequently, we recommend that you strike the following phrase: “All the above mentioned species can be invasive and create monocultures in their cover classes, so... .” This is overstated. These, especially alder and ash, self thin as they age and can be a good first stage if underplanted later. Also, this contradicts the last two sentences of the 4th paragraph that talk about planting early successional species first.*

Response: The phrase, “All of the above mentioned species can be invasive and create monocultures in their cover classes, so...” has been deleted. We revised this to refer back to *Typha* and *Juncus effusus*. “Some believe that cattail (*Typha latifolia*) and soft rush (*Juncus effusus*), though native species, should not be planted or salvaged. Both of these species can be rapid colonizers that create monocultures. The final choice, however, should depend on the functions that need to be attained at the site. Cattails, for example, can be very effective at

⁶ Capillary beds are short, four-walled structures usually lined with plastic and filled with a fine-grained medium such as sand or mulch. Water is delivered through drip irrigation or some other method to the bottom of the bed and water travels via capillary action up through the medium to the roots of the plants.

trapping sediments and removing toxic compounds if these are the functions desired.” See Section 3.4.1.3 for the revised text.

P.35b Comment (2nd paragraph): A group of researchers at UW have been looking at the effect of red alder on invertebrate abundance in small streams on the Olympic Peninsula (Volk et al 2003). Their findings indicate that streams surrounded by alder have a higher abundance of inverts than those surrounded by old growth forest, and that alder leaf litter provides important nutrients and food web support in streams in western Washington, and may be important in mitigating for the loss of ocean derived nutrients in systems with reduced salmon returns. Also see Kimbirauskas *et al.* (2004).

Additional benefits of alder include nitrogen fixing properties and abundant leaf litter production, both of which may improve soil conditions at recently graded sites where poor soil conditions may limit vigorous plant growth. We have also noticed that most nonnative invasive species are greatly reduced on sites where a canopy of *Populus balsamifera* or *Alnus rubra* develops rapidly. We do not believe that we should be making judgment calls on the desirability of native species that are filling an ecological niche and providing important functions (shade, cover, organic matter, nitrogen inputs, and invasive species control by shading and out competition) at a faster and more-efficient rate than other native species. Other literature states that growth of trees of the following genera has been shown to increase under the influence of associated alder: *Fraxinus*, *Picea*, *Pinus*, *Populus*, and *Pseudotsuga* (Tarrant 1968).

Response: This paragraph has been revised to clarify that what you plant ultimately depends on the goal and objectives of the project. It was not our intent to make a judgement call on the desirability of the plants but rather to have people think about what they are planting. We agree that red alder performs important functions, but we also wanted to note that a monoculture of certain species may not be desirable depending on the goals and objectives of the plan. The text now reads, “Ultimately, what is included in the planting plan should be based on the goals and objectives of the wetland mitigation project. For example, if one of the goals is to shade out and compete with non-native invasive species, a fast growing and early succession tree like red alder (*Alnus rubra*) could be planted to provide cover even where a nearby seed source exists. However, in order to prevent a monoculture, consider under-planting with species that will diversify the tree canopy over time.” See Section 3.4.1.3 for the revised text.

P.36 Comment (2nd paragraph): We concur that there are some native species such as cattail and spirea that are aggressive and do not need to be planted. However, Oregon ash is major provider of structure in some wetlands and usually requires planting. There are times when even alder would need to be planted instead of waiting on natural recruitment from nearby seed sources. However, where natural recruitment is feasible it should be encouraged.

Response: See the responses to Comments P.35a and P.35b. Also, a sentence about passive recruitment has been added to the discussion on vegetation. “In addition, if conditions are appropriate, some species will often appear on their own. This is referred to as passive recruitment. For example, some species (e.g., red alder [*Alnus rubra*]) may not need to be planted or salvaged if a nearby seed source exists. Where feasible, passive recruitment of vegetation can be used and should be encouraged.” See Section 3.4.1.3 for the revised text.

P.37 Comment (3rd paragraph) **: *To take advantage of bare root plant material, planting should generally occur between December and April.* My experience in western WA is that bare root nurseries generally don’t start digging until late Dec. and so plants are not available until January. Planting should end in March, preferably in mid-March. If you plant in April and it’s

not an unusually cold spring, the plants will come out of dormancy and begin opening leaves before the roots have established themselves in the soil enough to absorb water, resulting in decreased vigor and increased mortality. We called an eastern WA bareroot nursery and they told us that they dig from mid-March to mid-April (due to frozen ground), but that the actual period varies from year to year depending on air temperature. In addition, if containerized plants are used, planting is most desirable between November and March west of the Cascades and between October 15th and November 30th east of the Cascades.

Response: Thanks for providing and researching this information. We checked with several other nurseries and confirmed that generally the information provided in the comment is applicable throughout WA. The text has been changed (see Section 3.4.1.3) and now reads, “When to plant depends on the source of plant material (e.g., containerized plants, cuttings, bare root) and when it is available... Bare root plant material should generally be planted when the vegetation is dormant. It is good to check with local nurseries that supply bare root plants to determine when they are usually available. For example, in western Washington, a nursery may start digging plants in December and have the plants available in January. In eastern Washington, however, plants may not be dug until mid-March or April due to frozen ground. Container plants should generally be planted between November and March west of the Cascades and Mid-October to the end of November east of the Cascades. Local nurseries and landscape contractors with experience in restoration and compensatory mitigation can provide more specific information on planting specifications for particular species. Also see response to Comment P.79.

P.38 Comment (4th paragraph) **: *Instead applicants should plant early successional species first, such as willow (Salix sp.), cottonwood (Populus balsamifera ssp. trichocarpa), and shore pine (Pinus contorta). And red alder, if no seed source is nearby. It’s an excellent pioneer species and we need to get over this logger attitude about it being a “trash tree.” See 2nd paragraph comments.*

Response: The suggested change has been made. Red alder has been added as an early succession, pioneer species with the caveat that no existing seed sources are in close proximity to the site. If however “one of the goals is to shade out and compete with non-native invasive species, a fast growing and early-succession tree like red alder (*Alnus rubra*) could be planted to provide cover even where a nearby seed source exists.” See Section 3.4.1.3 for the revised text.

P.39 Comment (4th paragraph) **: *Planting later successional species as underplantings is a terrific concept. We have had success with this at a few sites where regulators allowed us to try it. Hopefully, now red cedars will no longer be put to their quick death in the sun.*

Response: No change to text required.

P.40 Comment (vegetation recommendations): Red alder, Oregon ash, and other native pioneer species often do need some planting in sites where an existing seed source is located nearby. Many sites contain conditions that prevent native species from establishing though they do have potential for growing such species. The obvious example is the all too common fallow field dominated by thick cover of nonnative pasture grasses. Planting natives that grow and spread quickly should be encouraged. Other natives that grow more slowly should also be planted as appropriate. Careful planting design and maintenance can prevent fast-growing natives from crowding out slow-growing ones.

Response: We agree that planting fast-growing natives can be a useful method for dealing with invasive species. We have added text to clarify and encourage this when appropriate. “For example, if one of the goals is to shade out and compete with non-native invasive species, a fast growing and early-succession tree like red alder (*Alnus rubra*) could be planted to provide cover even where a nearby seed source exists. However, in order to prevent a monoculture, consider under-planting with species that will diversify the tree canopy over time.” See Section 3.4.1.3 for the revised text. See also the responses to Comments P.35a, P.35b, and P.38.

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P.41 Comment (1st and 2nd paragraphs): Tubes on tree and shrub plantings can be important to reduce loss from rodent girdling. Seedling release, mowing or at least knocking the grasses and weeds around each plant, is often needed around tree and shrub plants for two years to reduce tree and shrub mortality. Seeding release should be part of every restoration plan in which woody vegetation could be covered by grasses and weeds.

Response: Change to text made. We included language to discuss methods for dealing with competition between woody plantings and grasses and weeds. The additional text (see Section 3.4.1.3) reads, “Finally, remove unwanted grasses and weeds in the immediate vicinity of newly planted trees. This can be accomplished by mowing, cutting, raking, or knocking them down in order to reduce competition for the first couple of years or until plantings are well established. I clarified with the commentor that “Seeding release is a phrase that refers to releasing a seedling from competition usually by mowing, cutting or raking down competing plants around a seedling thus releasing it to the sunlight. The problems with planting trees in restoration efforts on lands with weed seeds in the soil is a luxurious growth of the weeds that overtop and prevent seedling growth and development and frequently fall on top of the seedling in winter breaking or smashing it.” The additional text addresses the comment.

P.42 Comment (2nd paragraph): *Rodents can also be deterred by painting the lower stem of trees and shrubs with a mix of paraffin wax and cayenne pepper.* Please site a reference for research, as there is a lot of unsubstantiated anecdotal information about browse control out there, some of which is incorrect.

Response: This information is anecdotal. The text has been revised to clarify this. This document is guidance and we would like to suggest that there are other methods out there and that the agencies would be willing to accept other methods. The text now reads, “Rodents may also be deterred by using other methods. One site manager, for example, had success by painting the lower stem of trees and shrubs with a mix of paraffin wax and cayenne pepper.” See Section 3.4.1.3 for the revised text.

P.43 Comment: Need to insert a reference to the noxious weed list in appendix D somewhere here, with the comment that this is a starting list, and that counties may add additional plants into their own county

Response: A reference to Appendix D was added to this section (in a shaded box) and refers to county as well as state weed lists. See Section 3.4.1.4.

P.44 Comment (4th paragraph): At times it can be important to get late summer and fall erosion control before planting with native plants the following spring. A non-aggressive annual such as common barley has been successfully used to accomplish this.

Response: We agree. We added text discussing the benefit of seed mix for erosion control. We also discuss the need for application of seed mix to control erosion where we discuss timing (the option of waiting a season before planting to determine the hydroperiod of the site). See Sections 3.4.1.4 and 3.5.4.

P.45 Comment (4th paragraph): *planting taller shrubs and trees that can compete with and/or eventually shade out the reed canarygrass will probably be more successful than planting low-lying groundcover.* Please don't give people the impression that you can plant cottonwood stakes in a field of reed canarygrass and walk away, expecting the woody plants to survive. Even lawn grasses are fierce competitors with trees for water and nutrients, newly planted trees stand little chance against a field of mature reed canarygrass. Reed canarygrass must be controlled to give the woody plants a head start on growing. It's not just a matter of competition for light, what's equally or more important is competition for root space, water, and nutrients.

Response: It was not our intention to "give people the impression that you can plant cottonwood stakes in a field of reed canarygrass and walk away, expecting the woody plants to survive." We were using reed canary grass as an example that knowing the characteristics of the invasive species is important in determining many things, including what types of plants to plants and what type of maintenance may need to be required. The text (see Section 3.4.1.4) has been changed to clarify. "...Thus a plan that calls for taller shrubs and trees, in comparison to groundcovers, will be more successful at competing with and/or eventually shading out the reed canary grass. The site design and maintenance plan will need to include control of the reed canary grass to enable woody plants to become established since reed canary grass is a strong competitor for water and nutrients."

P.46 Comment (5th paragraph, first sentence): add "in western Washington" between "cases," and "the".

Response: Change to text made. See Section 3.4.1.4 for the revised text on invasive species.

P.47 Comment (3rd paragraph): The final two sentences in this paragraph are unrealistic. A wetland with a seasonal drawdown is unlikely to have high organic content. When any accumulation of organic carbon is exposed to aerobic soil conditions, aerobic bacteria will quickly begin to consume the carbon. A hydrologic change resulting in seasonal aeration of existing organic soil is likely to result in subsidence of organic soil.

Response: We agree. You probably can't have both a seasonal wetland and one with organic soils unless they are in different parts of the wetland. Not all indicators for a particular function can be built into one wetland. The goal of this paragraph was to highlight that if you impact water quality functions one of the goals for the design of the compensation site should be to provide water quality functions. We re-wrote the paragraph so as not to imply that all of these indicators for a particular function (e.g., water quality) will necessarily be built into one wetland. See Section 3.4.1.5 for the revised text.

P.48 Comment: Wetland “values” and “uses” should be introduced to give their own distinction. The following provides additional information on these:

<http://water.usgs.gov/nwsum/WSP2425/functions.html>,

<http://www.wwtlearn.org.uk/indexO.html?factfile/five-secrets-wetlands.htm&2>, and

http://ww.wetlands.org/pubs&/pub_online/SocioEcs/Pert2.pdf.

We sent an email to the commentor asking for clarification on how this fits in to the discussion of Goals, Objectives, and Performance Standards. Here is their response:

When I worked for the USACOE years ago in the 404 regulatory program, we tried to outline the wetland functions, values, and uses up-front, so as to set the stage for permitting. On the draft wetland mitigation guidance, my suggestion was intended to spell out very early in the document, language that identifies relevant wetland components in a consolidated manner. Presenting this information at the start of the document (in one section or chapter) would familiarize the reader of the document with the perspective of wetlands to man, and place the document in better focus right from the start. Much of wetland values, uses, and functions are already contained throughout the draft, but not in one synthesized location that necessarily captivates immediate attention.

I suggest adding a section/chapter, probably in the Introduction (after Organization) entitled “Wetland Functions, Values, and Uses”. This section wouldn’t really need a lot of work necessarily, just perhaps bullets under each term to provide examples, such as the following

Wetland Functions

- among the most productive habitats globally
- sediment and nutrient trapping; water quality improvement
- sediment control
- stabilization of river banks; shoreline protection
- diversity of wetland plants
- storage of water; floodwater retention/protection; flood conveyance
- reduces flow velocity
- ground water recharge or discharge
- influences atmospheric processes
- food, water, and shelter for fish, shellfish, birds, amphibians, mammals, and reptiles
- important life stage components (breeding, nursery areas, etc.) for numerous animal species
- suitable and preferred habitat for threatened and endangered species
- waterfowl feeding and nesting habitat
- fish spawning areas
- soil formation; peat formation
- serves as ecotone transition between open water systems to upland landscapes; provides growth of living matter
- interface between ground water and surface water
- normally self perpetuating

Wetland Values and Uses

- human recreation (hunting, fishing, furbearer trapping, shrimping, bird watching, etc.)
- human food

- economic value such as commercial fishing, shellfish harvest, rice production, or timber products
- areas of special scenic beauty; aesthetics
- livestock forage and watering scientific and educational studies

Sorry – I don’t have time right now to further develop this, but it can perhaps add some meat and potatoes to the document.

Response: Part 2 provides technical guidance for developing wetland mitigation plans. We decided that a discussion of wetland functions, values, and uses is too general for Part 2. Functions are briefly defined as “The physical, biological, chemical, and geologic interactions among different components of the environment that occur within a wetland. Wetlands perform many valuable functions and these can be grouped into three categories: functions that improve water quality, functions that change the water regime in a watershed such as flood storage, and functions that provide habitat for plants and animals.” This definition infers that wetlands are valued. Wetland values are defined in the glossary as “the wetland processes, characteristics, or attributes that are considered to benefit society.” See also Chapter 2 in Part 1, *Wetlands and Their Functions*, which discusses functions as well as values (or social functions).

P.49 Comment: Change “Performance” to Final Success. It is clearer terminology. There are intermediate performance standards and final success standards. The goals and objectives should lead to the final success.

Response: “Performance” has not been changed to “Final Success.” The term “performance standards” is commonly used to refer to interim and final success standards. Performance standards are defined in the document. “Performance standards are measurable criteria for determining if the goals and objectives are being achieved. Performance standards document a desired state, threshold value, or amount of change necessary to indicate that a particular function is being performed or structure has been established as specified in the design...” See Section 3.4.2.

P.50 Comment: Goals, objectives, and performance standards are very well thought out and presented. Offering this guidance and requiring this level of consideration on the part of the proponent should significantly improve compensatory mitigation.

Response: Comment noted. No change to text required.

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P.51 Comment: It would behoove Ecology to please consult with the [the commenter] wetland monitoring staff about the monitoring section of this document, particularly regarding methods and performance standards. [The commenter’s] monitoring team provides technical assistance to designers regularly on what proper goals, objectives, and performance standards should include, regardless of what quantity/status is negotiated, and they have a lot of insight into this topic. Specific to the performance standard section, many of the “good” examples are not specific enough and/or do not include the 6 components of a performance standard, correctly stated on page 27, that are needed. Please refer to *Measuring and Monitoring Plant Population* (Elzinga et al) and/or [the following] website <http://www.wsdot.wa.gov/environment/biology/docs/MethodsWhitePaper052004.pdf>.

Response: Pages 28-32 addressed performance standards. We acknowledge and recognize the expertise of the commenter in the areas of monitoring and performance standards. We sought additional review and comments from [the commenter] as we finalized the document. The publication *Developing Performance Criteria for Wetland Mitigation Projects* (Ossinger 1999) was also consulted for the discussion of performance standards. Some changes to the text have been made based on the commentors additional suggestions and to ensure that the 6 components of a clear and complete standard are included in all of the examples. See Section 3.4.2 for the revised text.

We also acknowledge the difficulty in developing meaningful and achievable ecologically based performance standards. We will continue to work with applicants, their consultants, and agency staff to make improvements in performance standards in the coming years.

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P.52a Comment (bullet point on Water and hydroperiod): The first part indicates that all mitigation plans need a performance standard requiring (at a minimum) saturation for 10% of the growing season. This fails to address drought years, and is in conflict with the note on pg. 9. At the end of five years, the measure of success is whether or not a wetland exists. Other site benchmarks for hydrology (such as levels of inundation on specific dates) are very difficult (or impossible) to predict when excavations of any depth are proposed.

Response: The referenced performance standard has been modified. See Section 3.4.2 for the revised text. It is recommended that all mitigation projects have the following performance standard or a similar one, "The area of compensatory mitigation will be inundated or saturated to the surface for a minimum of 30 consecutive days during the growing season for each monitoring year." This is based on inundated or saturated to the surface for 12.5% of the growing season (March 1st to October 31st). It is also stated that, "Applicants believing that a different minimum, performance standard for hydroperiod is warranted for their sites are responsible for proposing a different hydrologic standard. They should submit the necessary information to support the rationale for using a different hydrologic standard. For example, a hydrologic standard could also be tied to a *reference wetland* to address local climactic conditions (e.g., the area inundated and/or saturated in the compensation wetland will not be less than that found in "reference wetland x" for the first 5 years of the project). This would help reduce the potential problems during years of drought."

In the past performance standards have been focused on wildlife habitat with little attention paid to the source of water. The agencies are now requiring permittees to provide performance standards related to water and hydroperiod. Monitoring is necessary to document the progress of the site in attaining wetland conditions and to ensure that the site will be a wetland at the end of the monitoring period.

The note on page 9 states that, "Droughts are not predictable and are always possible; however, a site with an adequate source of water should be a wetland by the end of the monitoring period despite a year or two of drought." Therefore, it is necessary to document the hydrologic conditions of the site throughout the monitoring period to make sure the site is on the right trajectory despite a year or two of drought.

P.52b Comment (bullet point on Water and hydroperiod): Other site benchmarks for hydrology (such as levels of inundation on specific dates) are very difficult (or impossible) to predict when excavations of any depth are proposed.

Response: We agree that it is difficult to predict the hydroperiod on a specific date. The example performance standards have been changed from specific dates to more general time frames or ranges. In addition, we changed the example from height of inundation to area of a certain water regime (e.g, seasonal inundation). All performance standards need to be tied to the goals and objectives of the project. For example, if one of your goals is water quality your objective may be to increase removal of nitrogen by re-establishing a seasonally inundated wetland. Your performance therefore would be set up so that you could measure the area of seasonal inundation as that is where the nitrification/denitrification process would occur. Measuring height of inundation may be appropriate if you are trying to measure the amount of live storage if your goal or objective is to hold back water during flood events,etc. See Section 3.4.2 for the revised text. See also Comment P.52a.

We also acknowledge the difficulty in developing meaningful and achievable ecologically based performance standards. We will continue to work with applicants, their consultants, and agency staff to make improvements in performance standards in the coming years.

P.53 Comment (last bullet point): Does this mean that a site is unsuccessful if the range is exceeded? A minimum threshold is less ambiguous.

Response: The performance standard has been revised to provide a minimum threshold. Ranges, however, can be useful if a maximum threshold is desired. See Section 3.4.2 for the revised text.

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P.54 Comment (1st bullet point) **: Please provide some reference that supports this type of equally distributed diversity in natural wetlands: 10% cover of 6 species. In our experience, this does not exist in nature in the Pacific Northwest. You might find a wetland with 2 or possibly 3 dominant native woody species that contribute at least 10% aerial cover, with perhaps a few more non-dominant species present but providing very low cover in western Washington (Celedonia 2002). This would be even less in Eastern Washington. We suggest you make a more reasonable example that not only commonly exists in Washington, but also is achievable for a mitigation site, especially given this document's emphasis on ecological succession and simple design.

Response: Thank you for pointing this out. We have deleted the specific numbers from the example above. We also clarify that performance standards for species richness and abundance, should be based on the species richness and abundance of other existing wetlands under a similar regime of disturbance as the mitigation site. See Section 3.4.2 for the revised text.

P.55 Comment (2nd bullet point) **: Maximum thresholds for invasives are only achievable if (1) there is some evidence that natural wetlands in the areas support the same level of invasives, and (2) the specific species of concern are listed. Your example does not address the first of these.

Response: We have clarified that performance standards for invasive species should be realistic and based on the surrounding and existing on-site conditions. The example has been revised and specific numbers deleted from the example. The %cover should be based on the site location, etc. See Section 3.4.2 for the revised text.

P.56 Comment (Performance standard 2b2): This is ambiguous, immeasurable, and unachievable. Standards should distinguish between woody and herbaceous plantings. The survival rate of planted herbaceous species cannot be measured (dead herbaceous planting can disappear quickly, and living individuals are difficult to distinguish for many plants). For woody plantings, even one dead specimen would mean the performance standard is not met. A suggested alternative is, “In year 1, survival of planted woody vegetation will be 100% . . . If all dead plantings are replaced, the standard will be considered met.” Use aerial cover or density for herbaceous plants. This example also contradicts the last sentence on page 21, which recommends planting a diversity of species because not all species will survive.

Response: We agree. Thank you providing an example. The referenced standard has been deleted from the section. A similar standard has been added to Table 2, which provides examples of performance standards to avoid. See Section 3.4.2 for the revised text. If a standard for survival is used in the first year we agree that the standard would be considered met if all plantings are replaced. 100% replacement of dead or dying plants is generally part of a planting contract. In addition, appropriate substitutions for dead plants can be made as long as they are documented (i.e., if you plant a diversity of plants and some species survive while others do not based on site conditions, appropriate substitutions could be made for the species that did not make it). We also agree that measuring survival of herbaceous plants would be difficult and that measuring aerial cover or density would be more appropriate (see Comment P.65).

P.57 Comment (Performance standard 2b3): We are glad to see the shift to density of woody species after the first year. This gives a much more accurate depiction of what is on-site.

Response: Comment noted. No change to text required based on the comment. Some changes to this section however have been made. See Section 3.4.2 for the revised text.

P.58 Comment (pitfalls to avoid): Please add another bullet point. Performance standards that are unachievable, such as excessively low cover values for weeds, extremely high diversity, or excessively high requirements for woody cover.

Response: Suggested change has been made. See Section 3.4.2 for the revised text.

P.59 Comment (Table 1, 1st example): How about 20%? (10% is unrealistic with RCG)

Response: We agree that in many cases, particularly for sites surrounded by reed canary grass, it will be unrealistic to achieve less than 10% cover of reed canary grass. We have deleted all specific numbers from the examples in this text. The performance standards need to be tied to the goals and objectives of the project and be realistic - based on the site location etc. See Section 3.4.2 for the revised text.

P.60 Comment (Table 1, 2nd example of a “good” performance standard): Our data shows that 65% aerial cover by woody species in five years is unachievable on most sites. In the Puget lowlands, 50% aerial cover in five years is more realistic.

Response: We have deleted all specific numbers from the examples in this text. The performance standards need to be tied to the goals and objectives of the project and be realistic, based on the site location, current available science, etc. See Section 3.4.2 for the revised text.

P.61 Comment (WAFAM performance standard): The example of the increase in function performance level as indicated by WAFAM is unrealistic. Firstly, most sites that have a score of 6 for sediment removal, nutrient removal, and/or toxin removal probably don't need much improvement. Secondly, improvement of such functions will likely not be adequately measured by WAFAM given its insensitivities. Thirdly, vowing to increase any function to the highest level is probably a rose with far too many thorns.

Response: We agree that the numbers listed (6-10) are not appropriate. We have deleted all specific numbers from the examples in this text. The performance standards need to be tied to the goals and objectives of the project and be realistic - based on the site location, current available science, etc. We have also provided a caution that WFAM is not recommended for detecting small changes in functions. If, however, say you are enhancing a wetland that provides sediment removal at a low level and your objective is to provide a significant increase in removal of sediment. This type of performance may be appropriate. See Section 3.4.2 for the revised text.

Page 32

P.62 Comment (Table 2, 2nd improved standard): 90% cover may be unrealistic

Response: We agree that 90% may be unrealistic for many sites. We have deleted all specific numbers from the examples in this text. The performance standards need to be tied to the goals and objectives of the project and be realistic - based on the site location, current available science, etc. See Section 3.4.2 for the revised text.

P.63 Comment (Table 2, lower right hand corner): This reads: "If 80% survival is not achieved, appropriate species of volunteer plants will be counted for each dead or missing plant." Volunteer native plants in same vegetated structure category (Cowardin class) that are non-aggressive should count toward success unless there were specific requirements to plant a specific species.

Response: This standard has been modified. It is confusing and somewhat ambiguous. We agree that non-aggressive, volunteer native plants in the same vegetated structure category should count towards success. A new standard reads, "Native woody species (planted or volunteer) will maintain an average stem density of X in the scrub-shrub wetland in all monitoring years." We have deleted all specific numbers from the examples in this text. The performance standards need to be tied to the goals and objectives of the project and be realistic - based on the site location, current available science, etc. If certain species are of concern or if an objective is to establish a diversity of plants for particular wildlife, other more specific standards may be needed. See Section 3.4.2 for the revised text.

P.64 Comment (Table 2, last improved standard): This should include a better description of "appropriate species", such as "facultative or wetter."

Response: We agree that "appropriate" species is an ambiguous term. The performance standard has been modified. See the response to Comment P.63 and Section 3.4.2 in the document for the revised text.

P.65 Comment (Table 2): Please be absolutely specific on all success standards and make sure you have all of the elements needed. Please review this entire section (p 30-32) for completeness. For example, the second “good” success standard does not include an action, such as “achieve”. Also, in the last standard, 80% cover of planted species could be interpreted as woody *and* herbaceous plantings, the latter of which is impossible to measure. This standard should be just for woody plantings and volunteers. A separate density or cover standard should be stated for herbaceous plantings. Please see comment for Performance standard 2b2.

Response: The section on performance standards has been revised based on a number of Comments (P.49-P.65). Changes to the text have been made to ensure that the 6 components are included in all of the examples. In addition, the last standard has been clarified. See the responses to Comments P.63 and P.64. We agree that a separate density or cover standard would be needed for herbaceous species. See Comment P.56. See also Section 3.4.2 for the revised text.

Page 33

P.66 Comment (2nd and 3rd paragraphs): It seems that a reference wetland would be one that is fully functional and that has reached equilibrium on the landscape. This would not be the same age or successional stage of development but would likely be an undisturbed wetland in the same landscape location. For example, a forested wetland may take 100 years to fully function and have the structure similar to a wetland that was impacted. At some point at which tree survival is assured, one could expect under normal disturbance regimes that the structure components would be reached in a certain time period but also realize that it would take an additional amount of time for all the functions to be present. If a mature forested wetland with snags and down woody debris is impacted by a development and the compensatory wetland is five year old alder stand underplanted with cedar seedlings, full functional replacement might be anticipated but would not be on the landscape for a significant period of time. So one would not measure and compare the mitigation wetland only with another 5 year forested wetland.

Response: In the example above, we agree that one should not measure and compare the mitigation wetland only with another 5 year forested wetland. A 100-year old forested wetland as well as a younger wetland developed for compensatory mitigation can both provide information that can be utilized when designing a wetland mitigation site. Either way, certain criteria should be considered, including that the reference wetland and proposed wetland mitigation site are susceptible to the same or similar land use activities and potential disturbances. See Section 3.4.3 for the criteria.

Page 33-34 primarily (also throughout Part 2)

P.67 Comment (Reference Sites): Be clear if reference sites are required for all projects. We have found that they are sometimes a good idea, but sometimes are not necessary, and often difficult to find.

Response: We agree that they are sometimes a good idea, sometimes they are not a good idea, and that it can be difficult to find a good one. The text states (see Section 3.4.3) that reference sites could provide a source of information and a model for the design of a wetland mitigation site. A list of criteria for selecting an appropriate reference site is provided. If the proposed reference site matches few if any of the criteria, a new reference site should be chosen or reference sites should not be used at all.

P.68 Comment (1st paragraph): This is a better option for hydrology monitoring as it accounts for dry years. That is assuming a reference site can be located, and will require some pretty crafty planning if any significant site excavation is required.

Response: No change to text required. We agree that this is a good option for hydrologic monitoring. We also acknowledge the difficulty in finding an appropriate reference site. Reference sites are simply another source of information that should be considered when designing a wetland that will be used for compensatory mitigation. See Section 3.4.3 for a discussion of reference wetlands.

P.69 Comment (2nd paragraph): This is also an improvement. As in the last comment, it will be dependent on finding a reference site. This approach could be expanded to include the option of determining the cover provided by invasive species at the impact site, and setting a reasonable threshold for the mitigation site based on that.

Response: We acknowledge the difficulty in finding an appropriate reference site. Also, see Comment P.68 above. As stated in the text (see Section 3.4.3), in some cases the impacted wetland, in a pre-impact state, may serve as a reference for designing the mitigation site. A mitigation site, regardless of whether a reference site is used, should be designed to replace the area and functions lost or degraded at the development site. In some cases, it may be appropriate to determine the cover provided by invasive species at the impact site (if it is an appropriate reference) to set reasonable standards for the mitigation site. The text as written does not preclude this.

P.70 Comment (3rd paragraph) **: Ecology recommends monitoring a site twice a year due to seasonal variability. This seems excessive and will greatly increase our monitoring costs.

Response: This section was combined with the section on *Site Management After Implementation* (see Section 3.6.3). As described some indicators are best monitored in the spring (e.g., hydrologic indicators), while others are best monitored in the late summer (e.g., vegetation). Frequency of monitoring will depend on the performance standards and methods developed for ensuring that they are met. For projects with longer monitoring periods (i.e., greater than 5 year) monitoring of some parameters may be conducted less frequently.

P.71 Comment (4th paragraph): Maintenance is often an organizational component with defined responsibilities. We advocate for using the term *site management* in place of *maintenance*. This also invokes a more active role and conjures up adaptive management concepts.

Response: The title for the entire section has been changed from “Post-Construction Maintenance and Monitoring” to “Managing the Site After Implementation” (see Section 3.6). The section includes a discussion of monitoring, maintenance, contingency plans, as well as adaptive management. Each being important components of site management.

P.72 Comment (3rd paragraph): We would probably never put up a split rail fence to mark our boundaries. It is too expensive and is not permanent enough without ongoing maintenance. We use a smooth 3-strand wire fence. It is unobtrusive, does not block wildlife migration, is relatively inexpensive, and does a good job of marking the boundaries.

Response: We agree that a split-rail fence is often not appropriate or feasible. We have changed the text to indicate that fencing should be considered on a case-by-case basis and that any fence used should be unobtrusive and should not block wildlife migration if that is one of the goals of the compensatory mitigation plan. See Section 3.6.2 for the revised text. Also refer to Part 1, Section 3.9.6, *Long-Term Protection*, which includes a note on fencing specifications.

Page 36

P.73 Comment (3rd paragraph): This requires an as-built survey before the finish grade has been established. This seems a costly and unnecessary task since the finish grade needs to be verified, not the subgrade.

Response: We agree. The text has been changed to clarify that a contractor may need to provide an as-built survey after the finish grade. See Section 3.5.1 for the revised text.

Page 37

P.74 Comment (bottom paragraph): *collected plant material*. . . Delete the “collected” because “collected” means plants that were stolen or without a permit. You likely mean salvaged.

Response: The change has been made. See Section 3.5.2 for the revised text.

P.75 Comment: We recommend that the wording wetland professional, wetland specialist, biologist,” etc be consistent throughout the document, and limited to "qualified wetland professional" or similar. Moreover, since some landscape architects have training and qualification to do wetland mitigation work, we recommend that you expand the definition of "qualified wetland professional" to include qualified landscape architects. Conversely, many biologists would not be qualified to do wetland work. It is the knowledge and experience of the designer that produces good mitigation, not the title. **This comment also applies to Page 38, 5th bullet and 3rd paragraph; Page 40, 7th item in table; Page 41, Documenting “As-Built” Conditions; Page 106, Appendix G; Page 62, #10, item d)**

Response: We agree that there needs to be consistent use of terms throughout the document. All terms have been replaced with the term “qualified wetland professional.” The description of a qualified wetlands professional found in the appendix does not preclude a landscape architect from conducting mitigation work. If a landscape architect or biologist meets the trainings and qualifications described in the appendix, then he/she would be considered qualified for conducting wetland mitigation work. We agree that it is the knowledge and experience of the designer that produces good mitigation and not the title.

Page 38

P.76 Comment (8th bullet point): Allowing an on-site biologist to authorize minor adjustments such as excavation will only work if an as-built drawing is provided for the site.

Response: For clarification we provided a note indicating that any adjustments to the plan should be noted in an as-built report or illustrated on an as-built drawing. See Section 3.5.2 for the revised text.

P.77 Comment: Protection of Sensitive Areas and Erosion Control: The best management practices (BMPs) should be better explained or referenced because there are a great variety of BMPs that can be implemented.

Response: We agree that there are a great variety of BMPs that can and should be implemented depending on the particular construction site activities. We cannot go in to detail about all of the different types of BMPs in this guidance. Therefore, we refer people to the stormwater management manuals for eastern and western Washington. Particularly the sections on source control BMPs, which would most often apply to compensatory mitigation site construction activities. See Section 3.5.3 for the revised text.

P.78 Comment: Timing. The section on compensatory mitigation timing needs another look. It recommends waiting a year after construction to observe hydroperiod before planting. It then recommends planting during the dormant period. Given that construction normally occurs in summer and the dormant season occurs in late fall to early spring, the document appears to be recommending waiting about 1.5 years before planting. Instead, the document should allow for a 0.5-year waiting period if a hydrologic monitoring during this time is sufficiently rigorous and supported by reliable background information (nearby gauge data, general descriptions from landowners, etc.).

Response: The text has been revised. The agencies recommend waiting a year or through at least one wet season to monitor and observe the hydroperiod. This is a recommendation and therefore will not apply to all projects. In addition, when to plant will often ultimately be dependent on the source of plant material and when it is available. See Section 3.5.4 for the revised text. Also see response to Comment P.26.

P.79 Comment (end of 3rd paragraph): *In general, it is recommended that planting occur when plants are dormant (November to March).* This is too general a statement to be useful and is definitely not accurate for both east and west of the Cascades. Additionally, container plants are best planted in the fall as soon as the rains start, even though they are not dormant then.

Response: We agree that this is general information. It is difficult to provide specific recommendations when the actual timing is dependent on a number of factors. The text has been revised to clarify: When to plant depends on the source of plant material (e.g., containerized plants, cuttings, bare root) and when it is available. See Section 3.5.4 for the revised text. Also, see response to Comment P.37.

P.80 Comment (3rd bullet): Add “compost or wood chip berms” to the list of erosion control devices. Compost can be left after construction or bladed out to add to the organic component of the soil. They also do a better job of filtering sediments and other detrimental components of runoff.

Response: “Brush barriers” have been added to the list of erosion control devices. Brush barriers can be constructed out of chipped site vegetation, composted mulch, or wood-based mulch (hog fuel). Refer to the stormwater manual for western WA (BMP C231) <http://www.ecy.wa.gov/pubs/0510030.pdf>. See Section 3.5.3 for the revised text.

P.81 Comment (5th item in table, Possible Solutions): Add “Bring contractor back to fix with an expert operator.”

Response: The text has been changed to address the comment. See Section 3.5.3 for the revised text.

Page 42

P.82 Comment (Maintenance and Contingency Plans, also applies to top of page 52): It seems as if photographs could play an important role in identifying when maintenance and contingency plans are needed. These photos should include annual aerials, site overview and photos from fixed transect points that could indicate problems that need immediate attention to correct. WSDOT has aerial photographs within 1000 feet of roads and can be an important source of historical information.

Response: We agree that photos are an important monitoring tool. Monitoring data and photos should be used in combination to determine when and if appropriate contingency actions should be implemented. Appendix L provides an outline of what should be included in a monitoring plan, which includes photos (pans as well as along established transects).

P.83 Comment (4th paragraph): Due to the large number of [the commenters] mitigation sites that require monitoring and reporting, it is impractical to provide reports more frequently than annually.

Response: As stated in the document, monitoring reports will generally be required annually or every other year. In some cases, more frequent submittals of monitoring reports for specific projects may be required. See Section 3.6.3.2 for the revised text. Also, see Comment P.70.

Page 43

P.84 Comment (Adaptive Management): Adaptive management should be better explained in its respective section. An apt definition is the systematic process in which lessons learned from evaluating operations are applied to improvement management policies and practices. As well explained in the website: www.for.gov.bc.ca/hfp/amhome/Amdefs.htm, adaptive management is a cyclical process that begins with problem assessment and continues after adjusting management necessary to address issues identified after the initial design has been implemented. A key factor in this process that is often overlooked is creating design that facilitates adjustment. Designs without experimentation or without phasing produce projects that are more resistant to changes that may need to occur after initial establishment. For instance, planting an entire site in one event does not readily allow for adjusting the species planted if one or more species are found to be inappropriate during the monitoring period. Instead, adjusting the species composition is more readily accomplished when a phased approach is taken and fewer plants need to be replaced.

Flexibility of design is especially warranted in larger and more complex mitigation projects. This should be encouraged in the guidelines. One way of doing so is to include a subsection on adaptive management in the Site Planning and Design section.

Response: We agree that adaptive management should be emphasized and that this includes creating designs that facilitate adjustment. Adaptive management has been defined as “a systematic process in which modifications to a compensatory mitigation plan, including

monitoring, maintenance, and contingency plans, are made based on what has or has not been effective. Adaptive management is a feedback loop in which monitoring information is used to determine how site management may be adjusted if the project's performance standards are not being met." The following text has been added to the discussion about designing mitigation projects (see Section 3.4), "In addition, the design should be flexible to allow adjustments for unforeseen problems (see Section 3.6.5, *Adaptive Management*)." A discussion of phased planting and incorporating experimentation in to compensatory mitigation plans was already included in the text.

P.85 Comment (2nd paragraph) **: appropriate plantings of early succession species. Good to emphasize this point. Thank you.

Response: Comment noted. No change to text required.

P.86 Comment (5th paragraph): We won't know exactly who is doing the maintenance at the time of the mitigation plan. Describing our maintenance plan several years before the site is designed does not allow for adaptive management. If we see an issue emerging, we'll adapt our management of the site to try to take care of it.

Response: We agree that adaptive management is important when dealing with unforeseen circumstances that cause problems on a mitigation site. It is also important when determining the best approach to deal with common problems (e.g., invasive species) on a particular site. However, it is also important to discuss contingency and maintenance plans for common problems that are encountered on mitigation sites. And maintenance often needs to be included when determining project costs/budget. In regards to who is responsible for maintenance the text has been revised and now reads, "If known, maintenance plans should also include contact information for the parties responsible for maintenance..." (see Section 3.6.4).

Page 44

P.87 Comment (last paragraph): It looks like you are trying to define a close-out process here, which [commenter] supports wholeheartedly.

Response: Comment noted. No change to text made.

Page 46

P.88 Comment (2nd paragraph): While the increased emphasis on hydrology is understandable, requiring water budgets for every site is a huge effort that often does not help.

Response: Water budgets will not be required. See response to Comment P.12.

Page 48

P.89 Comment (2nd paragraph): This continues with Conceptual Mitigation Plan requirements outlining specific plan requirements. It seems a pre-application meeting with the agencies would be useful for large projects where this information could be formally presented with supplemental documentation. Production of another mitigation report seems unnecessary. This will increase project costs and timelines.

Response: We agree that a pre-application meeting with the agencies is very useful for large projects. Presenting information to the agencies prior to or at the meeting is very helpful. A

conceptual plan should briefly describe the mitigation concepts and other items as described in the document. In some cases, a presentation may be an appropriate substitute for a written plan. Contact the agencies for specific projects to see what they need. See Chapter 2 for the revised text.

Page 51-69 and 113-114 (Appendix I)

P.90 Comment: The annotated outline for wetland mitigation plans includes a considerable amount of information that is not always needed for each plan. Local regulatory agency staff may request information included in the outline simply because they are uninformed and do not want to miss anything. We suggest making many items on the list “optional” or “when appropriate.”

Response: We have indicated with an asterisk the items that are required vs. may be required. These are also identified in the mitigation plan checklist. See Appendix C for the revised text.

Page 51

P.91 Comment (item 3, 2nd bullet): This states that the general site map needs to show the immediate watershed. Does this mean sub-basin? How will the sub-basin be determined?

Response: By “immediate watershed” we mean the catchment that drains to the subject wetland. Catchment is defined as the smallest unit within a subwatershed that demarcates the area that drains to a wetland (or stream). We have clarified this in the guidance. We also provided a reference to the *Methods for Assessing Wetland Functions* (Hruby et al. 1999 and 2000), which provides guidance on delineating watersheds. A hydrologist may need to be consulted to determine the drainage catchment area from a topographic map. See Appendix C for the revised text.

P.92 Comment (item 3, 3rd bullet): This requests the size and location of developments in adjacent uplands. What distance away from the impact areas mitigation site should this be collected? How will we collect this information?

Response: The text has been clarified. A local area map showing the development site and mitigation site(s) and zoning designations and land uses of adjoining parcels is recommended. See Appendix C for the revised text.

Page 52

P.94 Comment (top of page, 4th bullet): This requires a map showing all existing wetlands, streams, and lakes within 300 feet of the mitigation site. Do these items need to be delineated and surveyed? What level of detail is suggested?

Response: In most situations the consultant will not be able to delineate and survey wetlands and other waterbodies on adjacent properties. The level of detail will depend on the quality of information available (e.g., NWI maps, recent aerial photos, recent studies, critical area inventories, USGS maps, etc.). The text has been clarified to say “approximate location.” See Appendix C for the revised text.

Page 52 and 53

P.93 Comment: I didn't review the annotated outline, but in looking for acronyms, my eye fell on P52 and 53 where we refer to STR and T/S/R. We need to be consistent, and I think its usually referred to as T/R/S. We need to add these to the acronym section too.

Response: Change has been made. Thanks for noting the inconsistency. T/S/R has been changed to STR. STR has been added to the acronym list.

P.95 Comment (Executive Summary): Why include such an extensive executive summary on a 10-page mitigation plan? This seems repetitive and cumbersome. Is Ecology saying that all mitigation reports should be large documents? If that is the case, how will Ecology and other agencies have the time to read and process these vastly larger documents?

Response: As noted throughout the guidance document, the level of effort spent on details in a mitigation plan should be proportionate to the level of impact associated with the project. The executive summary may be a half page to 2 ½ -page summary of the report contents, depending on the complexity of the project. Language has been clarified. See Appendix C for the revised text.

P.96 Comment (Executive Summary): It seems that the 6th bullet on comparing impact to mitigation site could have two additional subcomponents: landscape position and connectivity to riparian or protected areas.

Response: The executive summary is meant to provide a brief summary of the contents of the mitigation report. Landscape position and connectivity to riparian or protected areas is provided in the more detailed section on wetland impacts. See Appendix C for the revised text.

Page 53

P.97 Comment (3rd and 4th dash): *Where has the mitigation approach been done before?* This seems an odd and unnecessary requirement. It also requests a *description of the stormwater facilities* (in wetlands, streams or buffers). Please clarify this requirement. Does Ecology want only the description of these facilities that impact the sensitive areas listed or all the facilities associated with the project?

Response: We agree. The last two items have been deleted from the executive summary. There is however a section called, *Examples of Similar Mitigation Projects*. This section would be needed for larger, complex projects that have a higher degree of risk associated with them. See Comment P.104 and Appendix C for the revised text.

Page 54

P.98 Comment (Survey of current contours of the impact site): How is this relevant? This is not done now, unless the impact site is also the mitigation site.

Response: We agree. A small-scale site map should provide sufficient topographic information. *A survey of current contours* has been deleted. See Appendix C for the revised text.

Page 55

P.99 Comment (item e), 2nd and 4th bullets): These bullets request information on the existing water regime of the impacted wetlands that seems to require the installation of groundwater monitoring wells in the wetland impact areas, an expensive and time-consuming task. It is unclear what value this additional information would provide.

Response: The text has been changed to address the comment. The section, *Existing Water Regime*, has been clarified. A qualitative description of the hydrologic regime of the affected wetlands is what is being requested. See Appendix C for the revised text.

P.100 Comment (item g), 2nd bullet): This bullet requests information about the relative abundance of each plant community and requires a sketch drawn in the summer season (late spring *and* fall for emergent wetlands). For such an expensive new request, it is unclear how this data will be used.

Response: This is not a new request. This can also be found in publication #94-29 (*Guidelines for Developing Freshwater Wetlands Mitigation Plans and Proposals*). Many of the items in that publication are also found in the new guidance; however portions of it have been updated.

We acknowledge that collecting this information can be relatively expensive. The intent is to get a clear understanding of the existing ecological conditions at the development site. Estimating the relative abundance of dominant and subdominant plants should provide sufficient information. The text has been changed to “Estimated relative abundance of dominant and subdominant plants.” This information can be drawn from the delineation report for the site unless more detailed data are available. See Appendix C for the revised text.

Page 56

P.101 Comment (item l): This requires descriptions of buffer vegetation, DBH, density, snags, canopy coverage, and etc. 300’ from the wetland impact. This seems unnecessary and will increase project costs and timelines. It is unclear what value this additional information would provide.

Response: The intent is to get a clear understanding of the existing ecological conditions at the development site. And to understand the ecological functions that will be affected. The language has been changed to indicate that it is the buffer areas affected by the project that should be characterized. See Appendix C for the revised text.

Page 57

P.102 Comment (Water quality): Are all of these necessary to measure in the impact wetland or, more importantly, in the mitigation wetland? It is unclear what value this additional information would provide.

Response: We agree that all of these are not necessary for every site, however it is important to describe any observable sources of pollutants on the development project and how the development activities will affect water quality on the site. This section has been revised to clarify. See text in Appendix C for changes.

P.103 Comment (7b-c Mitigation Approach Goals, Objectives, and Performance Standards):**
This seems an odd location for performance standards since it will precede the description of the

proposed mitigation activities. We suggest including this after the site and mitigation description, near the monitoring and maintenance plan.

Response: We agree. A brief discussion of the project-specific goals for the mitigation should be described up front. However, the more detailed discussion of site-specific goals, objectives, and performance standards has been moved to precede the section on monitoring. See Appendix C for the revised text.

Page 58

P.104 Comment (7d): This requires a description of previous mitigation completed using this approach. This is completely unnecessary. The mitigation design should stand on its own merits, not the merits (or failures) of previous projects.

Response: We disagree. If the mitigation project is perceived by the designers or agency staff to have a heightened degree of risk, then the mitigation plan should describe the experience the designer has had with this type of mitigation and provide examples of sites where the approach has been used successfully. A high-risk design will require higher mitigation ratios. The language in the document has been clarified. This section has been moved to the section on the Mitigation Site Plans/Design (in Appendix C).

Page 59

P.105 Comment (8b Proposed Compensation Site, Site Selection Rationale): We recommend combining section 8b with 8d, since they are somewhat redundant with 8d.

Response: We agree. The sections have been combined and the text clarified. See Appendix C for the revised text.

Page 61

P.106 Comment (9a): Requires a water right permit to guarantee hydrology in perpetuity. Securing a water right permit is not an easy or expeditious task. This requirement will severely delay our project delivery.

Response: Language has been clarified to indicate that a water right may be needed if the project results in the withdrawal of surface or groundwater. See Appendix C for the revised language.

P.107 Comment (9c Preliminary Plan/Design, Schematic drawings): These don't include soils "drawing", but will include "soil preparation" sheet showing soil preparation.

Response: Soil "drawing" has been deleted from this section. See Appendix C for the revised language.

P.108 Comment (10a) **: Bullet item 1 requires a 6-inch contour interval for seasonal water fluctuations of less than 2-3 feet. It is unclear why this fine resolution is necessary and what the value would be. Where is the data to support the need for this level of grading tolerance for the water level fluctuations listed? Construction to this level of detail will be expensive and time consuming. Small landowners may not have the resources to survey sites at 6-inch contour.

Response: Language has been clarified (see Appendix C). “Contours at one-foot intervals are typically sufficient for most mitigation plans. Contours at 6-inch intervals may be desirable in certain cases where the seasonal fluctuation of water levels is low or in specific areas on the mitigation site where it is critical to have a high level of accuracy (e.g., wetland outlets, water control structures, areas where vegetation is proposed that has a narrow range of tolerance in water depths and fluctuations in depths).”

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P.110 Comment (Note): I disagree with this statement. In seasonal wetlands, hydric soils dry out and become oxygenated. In my discussions with soil scientists who study soil microbes, they tell me that the anaerobic microbes go dormant and the aerobic microbes break dormancy and become dominant until the soil becomes saturated again. If this can be backed up with research that supports the statement please cite it. Otherwise delete the note.

Response: The note has been deleted.

P.111 Comment (10d, 2nd bullet): requires source of nursery stock in the plan. This information is not controllable. The contractor will purchase plant material from their sources; by law [the commenter] cannot direct him or her to purchase plant material from a specific nursery.

Response: The bullet asks for the source of the material. It does not direct the purchase from a specific nursery. The purpose is to document where the material came from, not direct the acquisition. The language can now be found in Appendix C.

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P.112 Comment (item e): This requires construction specifications to be included in the mitigation plan, which is unnecessary. This would require the submittal of a Standard Specifications Manual with every mitigation report. Regardless, reviewers would not understand WSDOT special provisions with or without the manual. The number and dates of site inspections is unnecessary and useless for reviewers, even if it were possible to determine this before a project has been awarded.

Response: We agree. Item e has been deleted. See Appendix C for the revised text.

P.113 Comment (11, 4th bullet): Individual vegetation monitoring sampling methods (belt transects, line intercept, points-on-lines, or many other methods) must be appropriate to the site conditions and population attributes of interest at the time of the monitoring event. This information cannot be determined when the mitigation plan is proposed. Mandating this prescriptive approach will lead to an inaccurate assessment of conditions, and can directly contribute to mitigation site failure.

Response: The text has been revised (now in Appendix C). A typical element in a monitoring plan is “A map of the sampling locations for each variable. Or describe the methods that will be used to determine sampling locations for each monitoring event. Permanent sampling locations may be the best choice for some variables, but for others, such as percent cover of vegetation, sampling locations may be varied through random selection or other methods for each monitoring event. The map should include clearly identifiable markers on the ground to act as reference points for orientation. These may include roads, benchmarks, and permanent structures.”

P.109 Comment (item a) **: *Permanent monitoring and sampling markers.* Although we have now adopted modern monitoring methods, we have extensive experience (1988-1999) using older permanent transect methods and marking permanent transect locations on mitigation sites. The idea of permanent plots is outdated, does not represent the “best available science,” and is a poor choice for monitoring dynamic plant communities such as mitigation sites. There is no mention of any randomization for placing sampling units on a site. Without randomization, sampling data are not statistically defensible, cannot be reported with confidence levels, and are subject to sampling bias. Instead encourage randomly placing sampling units each year, parallel to the environmental gradient, to get a representative sample of the entire site. Also, permanent transects and markers can lead to skewed management of only transects or plots. If permanent markers are mandated by a regulatory agency, the locations should be GPS'd so they can be verified in the future. Please refer to [the] website <http://www.wsdot.wa.gov/environment/biology/docs/MethodsWhitePaper052004.pdf>, *Measuring and Monitoring Plant Population* (Elzinga et al), and/or *A comparison of two vegetation monitoring strategies on 4 WSDOT wetland mitigation sites* (Bergdolt and Thomas, 2001).

Response: Comment noted. This section on possible elements for monitoring has been deleted from the recommended outline. Appropriate monitoring methods should be tailored to specific performance standards.

P.114 Comment (Monitoring Plan, items a-g) **: This section is misplaced and belongs with the section on developing performance standards. The guidance makes it seem that *all* of the items are required to be monitored at each site, regardless of the performance/success standards. This laundry list of variables is inconsistent with objective-based, site-specific monitoring, described on page 63. If a parameter should be monitored, a performance standard should be developed for it during permitting and planning, triggering monitoring of that variable. Spend time, staff, and resources to gather data about variables that aren't tied to performance standards is not wise. Put this with the section on developing success standards as some *possible* variables for standards.

Response: We agree. This section on possible elements for monitoring has been deleted from the recommended outline. Appropriate monitoring methods should be tailored to specific performance standards.

P.115a Comment: Photographic monitoring can be a valuable tool for demonstrating how a site progresses over time. Taking pictures of each sampling site (sampling unit? transect?) is not effective. (For example, we may have 5,000 sampling points on a site.) Specific photo protocols for each site should be driven by the goals, objectives and performance standards for the specific site. Factors to consider are location of the photo points, angle of the shot, height of the tripod, and attribute that is being recorded. *Ground-Based Photographic Monitoring* (Hall, 2001) is a good reference on the subject.

Response: Good comment. We were not suggesting that every sampling point be photographed, but rather that photo points be established, as you recommend. This section has been deleted from the outline.

P.115b Comment: Requiring an individual estimate of percent cover for every species is nearly impossible if it is to be done with any statistical confidence; some species will undoubtedly have

extremely low cover and high variability, requiring nearly infinite levels of sampling to reach statistical confidence. We suggest that accurate estimates of specific species of interest, such as facultative and wetter species, dominant species, or cover provided by reed canarygrass, will result in a more accurate representation of site conditions, and lead to better site management decisions.

Response: We agree. This section has been deleted from the outline.

P.115c Comment: Dead herbaceous plantings generally disappear quickly on a mitigation site. It is also difficult or impossible distinguish between individual plantings of many herbaceous species that clump. Because of this, survival rates of herbaceous species cannot be accurately estimated. Woody plantings can also disappear within a season of two on most mitigation sites. Estimates of survival for woody species beyond the first year are likely to be inflated. Density of woody species after the first year, and density or aerial cover of herbaceous species are preferable.

Response: We agree. This section has been deleted from the outline.

P.115d Comment: Monitoring the water regime (before and after site construction) is very valuable for making site management decisions when some aspects of the site are struggling, especially in the establishment of desirable vegetation. However, water regime monitoring will only give you information about how recent/current weather conditions are affecting the site. It will not tell you if the site will support hydrophytic vegetation. In the short term (3-5 years) that can only be determined through a delineation (presence or absence of hydrophytic vegetation)(see your note on pg. 9). Hydrologic data is of little use in a monitoring report.

Response: We disagree. The water regime monitoring can provide important information on the depth, frequency, duration and seasonality of the water on the site. The delineation does not. This section however has been deleted from the outline.

P.115e Comment: It is appropriate to record site soil conditions to track change over time. Appropriate characteristics to monitor include soil color, particle size distribution, organic carbon content, and documentation of hydric soil characteristics. These characteristics should be recorded in the first and final year of monitoring. Redox potential and pH are subject to change on an hourly basis, and such data would be of no value in a monitoring report. A better definition of monitoring soil microbial activity, and rationale for requiring it should be provided. Appropriate processes for measuring soil microbial activity are laboratory based, and the samples are very sensitive to exposure to oxygen (the microbe population will change very quickly to current conditions). And most importantly, we do not understand how this information will be used to determine site success.

Response: Comment noted. This section has been deleted from the outline.

Page 65

P.116 Comment (item e):** Stormwater impacts should be evaluated in connection with stormwater permits, not via wetland mitigation monitoring. Most sites that discharge stormwater to wetlands must get Section 402 NPDES Permits or Section 404 permits, which are requirements of the Clean Water Act. The Ecology stormwater manual and HRM both require runoff (water quality) treatment prior to discharge to a wetland, and the success (effectiveness) of runoff treatment BMPs is determined on a programmatic basis, as is required by CWA Section 402 permits. Projects that get Section 404 permits are required to get Section 401 Water Quality

Certifications, also a requirement of the Clean Water Act. The 401 Water Quality Certifications "certify" that projects will not generate stormwater discharges that could degrade wetlands. The 401 Water Quality Certification may require monitoring if there are additional water quality concerns. Therefore, requiring water quality monitoring on a project-level basis and/or as a separate function of wetland mitigation monitoring is duplicative and unnecessary.

Response: Comment noted. This section has been deleted from the outline.

Page 66

P.117 Comment (Section 12): The contractual relationship (i.e., lease) issued by WDNR for the use of state-owned aquatic lands for compensatory mitigation should be included in this section.

Response: Comment noted. This section is titled "site protection" and is not the correct location to discuss WDNR lease requirements. This applies to site ownership and a footnote has been added to the recommended outline where we discuss ownership of the mitigation site is listed (now found in Appendix C). "If the compensatory mitigation site is proposed on state-owned aquatic lands, authorization to use the lands for compensatory mitigation must be issued from the Washington State Department of Natural Resources." This text can also be found within the text in Section 3.3.2.2 where we discuss legal protection mechanisms.

P.118 Comment (Section 13): Many of those topics are under the contract (planting areas free of weeds, etc.). The person/entity responsible for maintenance carries the ultimate responsibility, but the contractor may not be known or how they'll designate to do the work. We could submit an estimated schedule and tell them what the final condition will be, but we cannot tell them the dates and exactly how to do it. We can say that the contractor may be considering the use of spray, has to abide by water quality permit, etc., but not the level of detail asked in the guidance. This information is not known during the design phase.

Response: Some changes to the text have been made to address the comment. For example, we added text that "Frequency of the activities may change through the monitoring period so maintenance plans should be written with room for flexibility." See Appendix C, *Recommended Outline for Draft and Final Mitigation Plans*, for revised language.

Page 68

P.119 Comment (item b, Monitoring Schedule): *Sampling times for the five to 10 years of monitoring should be specified to within a two week period.* This is too tight a time frame to specify that far into the future. It doesn't give enough flexibility to respond to weather extremes, flooding, workload changes, or other events that cannot be predicted that far in advance. Specifying monitoring visits within a four- to six-week week period would be more realistic.

Response: We agree. The text has been deleted and replace with "Provide a timetable for reporting monitoring results to the agencies. Generally, tie the specific dates to the start of construction (e.g., the first year's monitoring report will be submitted 15 months after the start of construction)." The text can be found in Appendix C, *Recommended Outline for Draft and Final Mitigation Plans*.

Page 71

P.120 Comment (Glossary): Need consistency: Sometimes the second words start with a capital letter, sometimes not (e.g. Adaptive management vs Environmental Processes).

Add “mitigation sequencing”

Following each term with a colon and taking out the many “means that” or “is” which start many of the definitions would crisp it up

-Conservation easement: is a deed restriction placed upon...

-Cultural resources: ... (this term is a catch-all term that is....

-Deed restriction: An imposed restriction placed on the property title in a deed (a signed written instrument that conveys title to real property) that limits the use...

-Environmental processes: means the conditions (factors?) that control long-term patterns of ecosystem structure ecosystems and functions in the landscape. These processes include movement of....., and the climatic, geologic, soil, and topographic factors that control this their movement - climate, geology, soil, topography

- Mitigation banking has been defined as "wetland restoration, creation, enhancement, and in exceptional circumstances, preservation undertaken expressly for the purpose of compensating for unavoidable wetland losses in advance of development actions, when such compensation cannot be achieved at the development site or would not be as environmentally beneficial." (1995 Federal Guidance on Wetland Mitigation Banking)

-State Historic Preservation Officer is the Washington State Office of Archaeology and Historic Preservation, located in _____.

- Tribal Historic Preservation Officer includes one of Oversees??? 4 tribes ...(something odd about this definition)

- Waters of the United States: Taken from Defined in 33 CFR 328.3 means as "(1)...

- Wetlands: Definition taken from The Washington State

Response: The suggested changes have been made.

Page 76

P.121 Comment (Web addresses): Add in: EPA Watershed Academy (online training courses on wetlands, invasive species, watersheds, etc)

<http://www.epa.gov/OWOW/watershed/wacademy/acad2000/>

Response: The suggested change has been made.

Page 78

P.122 Comment: Add WDNR’s web page as a reference, www.dnr.wa.gov.

Response: The suggested change has been made.

Page 87

P.123 Comment (Section 6): The contractual relationship (i.e., lease) issued by WDNR for the use of state-owned aquatic lands for compensatory mitigation should be included in these sections.

Response: No change to the Appendix was made. This comment refers to the section on Site Protection and Maintenance in the Supplement to the Multi-Agency Checklist (now Appendix E). We cannot change the language in this Appendix as it is verbatim language. It is provided

as information only. It is to show people what is expected in a mitigation plan at the national level. A note has been added at the beginning of this document indicating that the checklist has been modified to meet the specific needs of the agencies in Washington.

Page 92

P.124 Comment (Appendix B, EPA contacts): Joan....change to read mitigation/restoration, mitigation

Dick.....add enforcement

Krista....add regulatory/permit process

Ralph...add monitoring add in : Linda Storm: Ecological restoration, monitoring and cultural resources (206) 553-6384

Response: The suggested changes have been made. See Appendix B for the revised text.

Page 96

P.125 Comment (Checklist for Delineation Report): The wetland delineation checklist has numerous unnecessary items. The necessary things are the items 1, 2, 3, 9, and 10 (data sheets, good site plan, discussion of rationale, NHP data and WDFW Priority Habitat and Species info). The other items are not necessary. Local regulatory staff, often not experienced wetland regulators, use Ecology Guidance Documents and checklists. They could and often do require all the items on the checklist because they are uninformed and do not want to miss anything. Consequently, we urge Ecology to separate items into two lists: items that are necessary on all projects, and items that are that are sometimes useful.

Response: We agree that items 1, 2, 3, 9, and 10 (data sheets, good site plan, discussion of rationale, NHP data and WDFW Priority Habitat and Species info) are necessary. The other items were listed as background information that should be included if pertinent. To clarify, we removed the check boxes and included these items as examples of potential sources of information. We also provided a footnote: “These are potential sources of information that may have been helpful in making a determination, but not all listed sources of information may be applicable to a given situation. The delineator is not required to obtain information from all of the listed sources of information.” See Appendix H for the revised text.

Appendix A - Reviewers of the Document

Individuals and organizations that provided written comments, suggestions, and materials during the public review period (Name, Affiliation at time of comment):

Bill Null, Washington State Department of Transportation
Bob Zeigler, Washington Department of Fish and Wildlife
Bonneville Power Administration (BPA), Fish and Wildlife Program
Environmental Restoration, LLC
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Greg Mazer, PWS, Senior Ecologist, URS Corporation
Jim Kelley, PhD, Senior Ecologist, Parametrix
Port of Seattle, Aviation Environmental Programs
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Washington Department of Natural Resources (WDNR), Aquatic Resources Division
Washington State Department of Transportation (WSDOT), Environmental Services
Washington Wetlands Network (WETNET) of Audobon

Individuals and organizations that provided written input during pre-draft focus group meetings, the on-line comment form etc. (Name, Affiliation at time of comment):

Brian Johnston, Snohomish County
Emily Teachout, U.S. Fish and Wildlife Service
Glenn Scholten, City of Cheney
Jeff Dixon, City of Auburn Planning Department
Jim Wiggins, ATSI
Karen Walter, Muckleshoot Indian Tribe Fisheries Division
Kristen Andersen, David Evans and Associates
Kristie Dunkin, Parametrix
Lyn Morgan-Hill, Whatcom County Planning & Development
Michael Muscari, Pentec Environmental
Washington State Department of Ecology Wetland Technical Advisory Group
Washington State Department of Transportation Wetland Mitigation Technical Group

Appendix B – Special Public Notices

