DEPARTMENT OF
ECOLOGY
State of Washington

Draft Guidance on Choosing Mitigation Sites Using a Watershed Approach

Responses to Comments

December 2009
Publication no. 09-06-033

Publication and Contact Information

This document is available on the Department of Ecology's website at www.ecy.wa.gov/biblio/0906033.html

For the final guidance on *Selecting Wetland Mitigation Sites Using a Watershed Approach* (new title) refer to Ecology Publication no. 09-06-032, which is available at: www.ecy.wa.gov/biblio/0906032.html.

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Introduction

This document contains a table of all of the comments that the Department of Ecology received in the spring of 2009 during peer review of the draft *Guidance on Selecting Mitigation Sites Using a Watershed Approach*. For each comment submitted, the authors have prepared a response, describing what action(s), if any, were taken.

The final document, *Selecting Wetland Mitigation Sites Using a Watershed Approach* (new title, Ecology Publication #09-06-032), is available on Ecology's web site at: www.ecy.wa.gov/biblio/0906032.html.

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#	Section	Comment	Response to Comment/ Action Taken
1	General	Publication of the guidance will be an important step toward helping mitigation practitioners use the watershed approach to improve the performance of compensatory mitigation projects.	No change.
2	General	I think a systematic approach toward choosing mitigation sites is a good idea.	No change.
3	General	In general, this is an excellent guidance document.	Thank you. No change.
4	General	The document is a very useful and much needed tool to help guide compensatory mitigation using a watershed approach	Thank you. No change.
5	General	This will be great to have once it is finalized.	No change.
6	General	I think it is a good start that needs revisions.	Document was revised significantly based on peer review comments.
7	General	First, I want to commend you and your colleagues for developing the draft guidance document. It's a necessary tool and a big step in the right direction to providing applicants with a practical approach to mitigation site selection which, if implemented correctly, should result in better mitigation site selection, and, in combination with appropriate design, performance standards, and monitoring, lead to better results on the overall success of wetland mitigation generally. There has been a lot of discussion about what constitutes a watershed approach to mitigation, and your guidance on the subject will help inform users on the concepts underlying appropriate and feasible mitigation site selection.	Thank you. No change.
8	General	After a relatively quick review, I commend you on what appears to be a sound guidance document built on a good foundation of HGM and other methods.	Thank you. No change.
9	General	I believe that the overall technical logic flow of the guidance is scientifically sound.	No change.
10	General	I believe that good site selection leads to mitigation success and using the watershed approach helps pick the best sites. GIS provides many tools that are helpful and I found a new GIS link in guidance document that I think will be really helpful (thank you). I am glad we are starting to see more support documents such as this one on the subject. This document is a good start and discusses much of the issues one needs to consider to evaluate potential mitigation sites. However, I think use of the charts oversimplifies the mitigation site selection process which involves too many yes, no and maybes to easily chart.	Added discussion on complexities of choosing mit. sites and acknowledged simplification. Revised version is more sophisticated attempt to capture complexities. See "The Process for Selecting Mitigation Sites" in guide.
11	General	Generally, the NWIFC supports the idea that it is impossible to make fully informed wetland mitigation decisions without a detailed understanding of watershed conditions and processes. This is true, not only for compensatory mitigation decision-making, but also for deciding whether the avoidance and minimization requirements of the mitigation sequencing process have been met. The draft guidance is aligned with this key concept at the outset where it states: "Recent guidance recommends that mitigation be done in areas where ecological processes can best be restored, unless it is ecologically necessary to maintain the affected functions on the impact site (emphasis added)."	No change.
12	General	This document appears to have several intended audiences, but it's unclear which guidance applies to which audience. Potentially, the folks doing watershed characterization are not the same ones applying the site selection charts. I recommend adding a section that better describes who the consumers of this information are and how different entities should use the guidance.	Clarified intended audience of document and re-iterated that guide is not intended to describe how to do watershed characterizations.

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13	General	The document implicitly assumes there are policy decisions/prioritizations that influence: a) whether compensatory mitigation is the only feasible option, b) whether on-site mitig. is practicable, and c) whether on-site vs. offsite compens. mitig. is preferable. It does not attempt to provide assistance in making these policy decisions. Presumably the document is an effort to provide multi-agency-reviewed, scientifically-based, technical guidance. The decision points for these policy decisions should be explicitly indicated in the flow charts and text of the document so the line between criteria-based scientific and policy decisions is not blurred. For example, while terms and phrases such as: 'preferable to compensate' 'functions are more important in that watershed' 'high likelihood of being successful', ..'realistically be removed', could be associated with scientifically supported metrics, but they are not - they are all describing policy decision points. Since the document does provide science-based criteria at other decision pts. (e.g. would mitig. result in a WL of approp. HGM class), the policy versus technical decision points should be indicated as distinctly as possible.	Minimized use of value-based terms like "preferable" or "more important", or if using them, made clear what our assumptions are.
14	General	Knowledge of existing watershed conditions and processes and resource objectives is necessary to make an informed decision as to whether it is "ecologically necessary to maintain the affected functions on the impact site." The Commission looks forward to reviewing proposed guidance on what is required of applicants to demonstrate that they have taken all necessary steps to avoid and minimize impacts to wetland resources.	Guidance on avoidance not within scope of document - added references to documents that provide this information.
15	General	My questions are mostly related to implementation of the guidance. I see the site selection analysis as an essential component of mitigation banks and ILF's, especially as we start building the program. For permitee sponsored mitigation, the driver of site selection is very often, ownership and cost; it's not functions based. The guidance will help us shift this standard. However, in areas like the Lower Green River valley, most of the prime mitigation sites are encumbered (ie, farm preservation) or otherwise not available. I wouldn't want to require an analysis of off-site mitigation if we already know that ultimately they are just going to search for what's available and then justify it ecologically. So my comment is, I believe we need to preface this guidance as to how, and to what extent we will require adherence. It may be useful to provide case studies or examples. Examples could include banks and ILF's, yes 100% site selection analysis per guidance. On NWP's or in some watersheds where we already have a good understanding of what's available and what's not (Mill Creek for example), we could indicate greater flexibility.	This is a guide. Use of it is not required. The 2008 Federal Rule on Compensatory Mitigation requires the use of a watershed approach in mitigation planning, but does not specify one particular approach. This guide is one example of a watershed approach.
16	General	I commend you on developing the watershed approach for mitigation. However, I don't think it gets at the underlying problem that at least in Washington, the local regulatory arena was developed initially to address SEPA critical areas. Currently, almost without exception, local jurisdictions require on-site in-kind mitigation. Is there a movement toward making effective changes to SEPA, and local critical areas ordinances to make them comply with the work being done at the State and Federal levels? Until that change can be made most projects are forced into looking at on-site mitigation alternatives.	Added a footnote recognizing that local jurisdictions have varying requirements. However, cities and counties that have revised their critical areas ordinances in the last 5 years have typically added more flexibility in allowing for off-site mitigation. Many have moved towards incorporating a watershed approach in their review of permit applications. We see this as an increasing trend.

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17	General	I agree (with comment immediately preceeding). I'm a land use/enviro law attorney and have spent the past 19 years working with city and county governments working on these issues. At Snohomish County and worked on the update to many of its GMA policies and development regulations, including critical areas protection. I've been saying the same thing since I first heard about this idea. Offsite mitigation and watershed characterizations go together and its a great idea, but you can't make the offsite part of it "go" unless major changes are made to GMA and other statutes that require onsite mitigation in nearly every case. Once the statutory changes were made, you'd need to get the cities and counties to reopen their development regulations and GMA comp plans to allow for it. That won't be done happily unless they can be assured that they aren't opening themselves up to a new round of litigation before the Growth Boards (which is killing them all financially and has a political cost too). It certainly wouldn't be impossible to get that done, but someone needs to lead it and no one is doing that at the moment.	GMA does not require onsite mitigation, nor do other state statues. RCW 90.74 encourages innovative mitigation. The issue is more with older CAOs and changing those takes time. Adopting new approaches is often a slowly-evolving process.
18	General	The City of Bellevue is requiring [for SR 520 project] that all impacts within city limits be mitigated within the city at city owned property (there really aren't any privately owned sites left that would work), even though it might not make the most ecological sense. All the mitigation projects that the city wants WSDOT to do include enhancement only... I guess I'm trying to point out that the local jurisdictions need to be on-board with looking at mitigation using a watershed approach for the guidance to work. That being said, I know you have to start somewhere.	This issue goes beyond the scope of this guidance. Cross-jurisdiction mitigation may still be in the future but this document helps lay the foundation for that potential. Using a watershed approach is still preferable, even though its scope may be limited by jurisdictional boundaries.
19	General	I am concerned by the potential movement of urban wetlands to rural settings. Already there is a movement of urban wetland impacts to rural mitigation sites. This is in a large part because of land costs and availability but also the increase in amount of buffer typically required around urban mitigation sites in the joint guidance on mitigation favors rural mitigation sites. I am afraid that in the future we will (I already do) wish we had more wetlands in our urban landscape.	Expanded the discussion on the importance of urban wetland functions and why one might choose to mitigate in urbanized watersheds even when the hydrologic functions of the watershed are highly altered. Noted that these sites may not be sustainable without significant long-term maintenance. Defined "sustainability".
20	General	The Mitigation Site Selection Guidance presented here pushes for mitigation of urban impacts in rural areas particularly with the less than 10% impervious fork in site selection process in Chart B. My experience with wetlands in urban watersheds (>10 percent impervious) is that they usually do provide important wildlife benefits- often these wetlands are key in supporting native wildlife species in urban areas, providing resting sites for birds crossing urban areas, and as parts of wildlife corridors for mammals and amphibians to cross urban landscapes. Although scientific studies have shown that rural wetlands support have more diversity (plant and wildlife) does not necessarily mean that these urban wetlands are less important or less valued by humans or wildlife. Also, the evaluation of wildlife habitat for urban wetlands is not given much thought in the guidance document in functional way or in consideration of watershed/landscape processes.	Drew clearer connection between altered watershed functions and lack of sustainability. Expanded the discussion on balancing the importance of urban wetland functions with the difficulty of building sustainable mitigation in urban areas. See text box: "Sustainable Mitigation Site".
21	General	I would also be concerned about how urban municipalities will feel about the export of wetlands and wildlife habitat from their jurisdictions.	Modified Chart A (now Chart 1) to acknowledge regulatory requirements for replacing functions within urban growth areas. Discussed the need to split functions in some cases.

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22	General	Development of watershed characterizations and designing mitigation that restores watershed functions and processes will be labor and resource intensive activities. Natural resource agency staffing cutbacks are likely to hinder these necessary activities. To the extent this is true, activities that trigger mitigation obligations may need to be held in abeyance until these processes are complete.	This guide does not force any natural resource agency to undertake watershed characterization. Nor does it trigger mitigation obligations. It provides options for using existing watershed plans and for making decisions in the absence of watershed plans.
23	General	A concern I have is- at what point of this guidance development process will an evaluation of the economic impact of utilizing this guidance [be done for]: 1) expanding the project area to include offsite mitigation locations would bring up ownership issues, more extensive reconnaissance, coordination, reports, and permits. 2) Criteria C5 –hydrologic studies.	Development of a guide does not trigger any federal or state requirements for an economic analysis, and none is planned at this time. Use of this guide is not required.
24	General	One potential benefit of this guidance is that provides a relatively simple way of making mitigation decisions. However, some sections are at risk of oversimplifying the considerations that are involved. Consider adding a section that acknowledges the complexities that are inherent in this topic and explains that the method makes some assumptions to help simplify the approach.	Added discussion on complexities of choosing mit. sites and acknowledged simplification. (See "The Process for Selecting Mitigation Sites". Revised version is more sophisticated attempt to capture complexities - see Part 2.
25	General	I have three primary concerns with the guidance in its current form: the document simplifies the site selection process too much, there appears to be bias for rural wetlands over urban wetlands and great caution should be used in providing wq features to mitigate for wetlands' wq function.	Added discussion on complexities of choosing mit. sites and acknowledged simplification. Revised version is more sophisticated attempt to capture complexities. Also added discussion on importance of urban wetland functions.
26	General	The first oversimplification: Basically this document's chart B implies that sub basins that exceed 10% impervious are not good places for mitigation and those that have less will probably have good sites. I would argue that, although 10% impervious (urban) is an indicator of the potential success and function of the wetland, there are many cases of mitigation success and functional gain in areas with more than 10% impervious and many failures in areas with less than 10% impervious (rural). By narrowing mitigation site selection so early into rural areas, good potential mitigation sites will be overlooked.	Removed impervious surface threshold. Revised so approach does not preclude mitigation in urban watersheds but clarified that hydrologic alterations will degrade mitigation sites in urban areas and that long-term maintenance will be necessary.
27	General	I would like to see the following added: 1) More discussion on how to focus your mitigation site search using GIS and maps, based on landscape ecology/wetlands functions/watershed processes. 2) Evaluation of watershed processes and how wetlands can contribute/improve them. 3) Use of an example – a project where this approach was used.	Provided links to examples of watershed characterizations that have been done in western Washington. Provided appendix that clarifies connection between processes, structure, and functions and includes examples of using basin plans.
28	General	If you have not tried out this approach on several real life examples, I would strongly recommend that you do before going public with this.	Noted. We are releasing document with request for public comment and plans to revise it periodically based on feedback.

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29	General	Generally, it was felt that this document was more "philosophical and conceptual" than actual guidance. Clearly, the reviewers (WSDOT staff) were hoping for greater detail and more specific guidance in the document on process and decision-making on mitigation site selection. There was concern that the guidance lacked the detail necessary to help guide practitioners trying to use it identify the most important needs within a watershed or to prioritize among several alternative mitigation opportunities. The document would be improved if it included a more of a quantitative basis for decision-making on site selection. As one of our reviewers remarked, "there is little guidance here that would help identify the most important needs within a watershed or to prioritize among several alternative mitigation opportunities".	This guide was developed to help identify potential mitigation sites that meet basic criteria in their potential to restore watershed processes. Prioritizing a list of mitigation sites is beyond the scope of the document because it would require information at the site-design level. This document is not intended to help mitigation plans for specific sites. However, we did add a tool in Part 2 to explore potential constraints at the site level.
30	General	Reviewers also commented that the guidance lacked methods for determining the extent to which watershed processes are impaired, even though it identifies that as the foundation of the "watershed approach".	Guide notes that the best way to determine the extent of process impairment is to conduct a watershed characterization, but that is not expected of individual applicants. Guide offers a simplified alternative to use in areas where no watershed plans exist.
31	General	It will be very important that the user of this guidance understand the context within which it is meant to be applied, and at what landscape "scale". It would be very helpful if this guidance could discuss and clarify the appropriateness of landscape scale when doing a "needs assessment" that does not depend entirely on local designations which are likely to vary by location and region. Clearly, a large-scale analysis will yield results very different than analyses conducted at finer scales of resolution. Stakeholders are currently involved in planning at the major watershed scale, (e.g., WRIA), which can be roughly the size of six-digit Hydrologic Unit Codes. It would be helpful if the guidance could clarify the appropriateness of scale when making evaluations and setting needs priorities.	Expanded and clarified discussion on the appropriate scale for an assessment. See text boxes: "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".
32	General	While it is clearly understood that the mitigation is associated with projects at the site scale, the title of this document and the terms used such as "watershed processes," "landscape scale," and "landscape ecology," give the impression that this is entirely an ecosystem, process-based approach. There is application of broader scale data (when implementing Criteria B1, B2 and part of C1) (pages 8-9) but it is important to clearly indicate at the start that this approach does require site scale analysis which necessitates the acquisition and application of site scale data.	The need to collect site-scale data does not preclude doing an assessment in a watershed context - both levels are needed. Added Figure 1 to clarify which steps in the mitigation process are addressed in this guide.
33	General	This document should address impacts to other aquatic resources, as the federal rule does, not just wetlands. However, if the intent is truly to focus on wetlands, that language needs to be used more consistently throughout the document and it should be explained in the background section why this document does not pertain to other aquatic resources. Our comments have assumed that the focus is broader than just wetlands, and have suggested edits to make that intent clearer. (Have changed "wetlands" to "aquatic resources" in numerous places throughout document).	Clarified that guide is intended to address only wetlands in western Washington. Changed title of guide and added section on scope of guide.

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34	General	There may be circumstances where there are multiple plans (with different foci and goals) within the watershed planning area (City, county, tribes, Puget Sound Partnership, etc). Some guidance on how (and what basis to use) one should/could combine these and/or set priorities where there are conflicting interests would be useful. This is going to be a critical issue for any In-lieu fee system where you may have different groups with competing interests and local jurisdictions wanting to keep mitigation within their local area.	The guide provides a list of characteristics that watershed plans should have if they are to be used to locate mitigation sites. If more than one plan for an area meets these criteria, then either plan could be used. Resolving competing priorities is often politically driven and is beyond the scope of this guide.
35	General	Several reviewers commented that they felt the analysis was too subjective an fish-centric. Is it possible to conduct a bona fide analysis of watershed function by focusing so much only on water quantity, water quality, and wood? We felt that this focused approach needs to be better justified an supported in the document.	We do not agree that this is fish-centric. The focus on hydrologic processes is due to the fact that they drive most of the processes in aquatic systems. Wildlife habitat is directly affected by these processes. See Appendix B for more discussion on this.
36	General	There is no assessment regarding what the level of uncertainty associated with the application of this approach. Validation of this sort of approach is relatively challenging since the decision criteria include various indicators (each with their own levels of uncertainty) and performance measures have not been defined. Nevertheless, some discussion of what defines 'successful mitigation' (e.g. a wetland that is sustained 20 years post-project? Measures of replaced functions – water quality, habitat?) and how using this approach provides greater certainty of achieving such success should be expressed. Where compromises would significantly reduce this probability of success should also be indicated and if information is known regarding (e.g. if data for impervious surfaces is not recent or the groundwater information is lacking).	A discussion was added regarding the sustainability of mitigation (see text box titled "Sustainable Mitigation Site") because that is the focus of this guide. Assessing success of mitigation is defined in many ways and is outside the scope of this document.
37	General	This watershed approach assumes there are no interactions between watersheds and focuses on freshwater catchment (surface and subsurface flow). There is no consideration of interactions between watersheds or transport of water, material and organisms in the marine environment where wind, waves, tides and currents provide significant forcing of the ecological functions. This is an important deficiency as most of the SOALs are marine influenced and many of the upland mitigation projects will likely affect marine SOALs.	Added sentence to "Scope of This Guide" to emphasize that the guide does not address estuarine processes.
38	General	1. Introduce the concept of wetland landscape profiles in the guidance. The draft document emphasizes how to select a place that is appropriate for a compensatory mitigation project. Selection is guided by an understanding of a site's suitability with respect to the goal of sustaining and restoring watershed processes. I suggest that the selection "paths" also be guided by the type of wetland (or aquatic system) that needs to be mitigated. The selection of wetland type is informed by an assessment of the "wetland landscape profile" that encompasses a project impact site and its paired compensatory mitigation site (e.g., mitigation service area). Criteria C3 begins to make that point with its reference to site suitability for a particular HGM wetland class. Added emphasis can be had by slightly rearranging and clarifying the "decision steps" in Flow Chart C. Then, a description of wetland landscape profiles can be added to the narrative that accompanies Criteria C3 (Page 10). See my suggestion #2 below.	The author's group has developed a very different approach on which he is suggesting that we base this guidance. The underlying assumptions are based on the "wetland landscape profiles" by which they draw conclusions on how the landscape processes are working. We are not using this approach in our guide, and have taken a different approach to analyzing the landscape.

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39	General	The theory behind using wetland landscape profiles is that the abundance, distribution and condition of wetlands in the landscape can be used to define hydrologic equivalence. Hydrologic equivalence serves as a goal for compensatory wetland mitigation (Bedford 1996, Bedford 1998, Gwin 1999, Johnson 2005). In other words, wetland landscape profiles provide a coarse structural measure of how well landscape processes are working in an area. A degraded profile is indicative of disruption in landscape processes, and vice-versa. Based on that relationship, we can assume that the delivery of ecosystem services is correlated to the cumulative condition of the wetland resource, as represented by its wetland landscape profile. Those services include the provisioning of habitat, flood control and water quality. Mitigation decisions should be made in a way that helps sustain or improve an area's wetland landscape profile vis-à-vis maintaining hydrologic equivalence.	See response to comment 38.
40	General	In the development of profiles, wetland abundance and distribution is documented by an accounting of wetland acreage by ecosystem class (See attached Figure #1. The reporting of wetland acreage can be done from wetland inventory maps. If those maps are unavailable or inaccurate, a coarse profile can be constructed using best professional judgment). Information about wetland conditions can be added to the profile as landscape scale and wetland survey information becomes available.	See response to comment 38.
41	General	The profile concept theorizes that the abundance, distribution and condition of wetlands in the landscape help sustain landscape processes and the delivery of ecosystem services. The factor we call "abundance" is significant. Its placement in the simple profile model suggests that we cannot decrease the amount of wetlands (acreage) in the landscape without disrupting processes. This is why the federal compensatory mitigation rule discourages mitigation acreage ratios of less than 1:1. The trading of an ecosystem structural component, like space/area, for improvements in another ecosystem component, like wetland condition or functional capacity, is risky. There is high uncertainty in predicting the environmental results of such a trade, as exacerbated by the problem of unintended consequences. All this is to say, the notion of "splitting functions" is problematic.	See response to comment 38.
42	General	While at King County I was fortunate enough to work on a document called the Ecological Lands Handbook. I'm attaching a copy for your reference. I bring it to your attention because it is directly relevant to the work that you are doing with respect to mitigation site selection. It begins with a discussion of underlying conservation principles, which are fundamental to understanding and implementing appropriate mitigation site selection. The principles are followed by examples, so that the reader can understand application of the principles in the context of a case study. (comment continues in next row with "For example...")	No change needed.
43	General	For example, the first principle is 'Landscape': (quotes several paragraphs from document - quote discusses varying landscape scales and takes approach that all property should be managed in a landscape context, even when a site is so small you can't see how it will affect ecological processes. Main point of quote: "Management of a property within the context of the landscape allows development of: (1) appropriate restoration/management decisions for the site based on the level of alteration of landscape processes; (2) avoidance of expensive restoration actions that may not be sustainable based on level of process alteration; and (3) larger scale subbasin or basin recommendations that will assist in the long-term restoration of processes and sustain recovery of structure and function on-site." - see comment letter for complete quote).	No change needed.

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44	General	I include this principle in its entirety because it is such a fundamental concept, one you allude to in your document, but one which I feel needs further clarification to be of greater use to applicants and users of your guidance. The text box on page 1 of your guidance, though meant to provide a quick overview, confuses the discussion between ecological processes, ecological structure, and function (you're really talking primarily about hydrologic processes as they occur in watersheds and affect aquatic resources aren't you? Rather than pollination, or population dynamics of a given species, or habitat, all of which are also, broadly, ecosystem processes). I know it's a subject upon which volumes could be (and have been) written, but ecosystem processes within a watershed context are so fundamental to this document that I think they deserve a greater level of attention than is currently provided in the text box and discussion on page one of your document.	We have clarified the disctinction between ecological processes and watershed processes
45	General	The discussion in your 'Making Mitigation Work' document is an excellent starting point, as is the work that Ecology has done v.v. watershed characterization. See also NWNewsletter Volume 31, No. 1, *Linking Ecosystem Processes to Sustainable Wetland Management* Jan-Feb 2009, as well as recent articles by these same authors (Euliss, Smith, Wilcox and Brown) in Wetlands over the last year. See also the bibliography in the Ecological Lands Handbook. (Like I said, there are volumes of information on this topic).	These are good references but provide a level of detail that was not appropriate for this guidance. Ecology has more detailed guidance on how to make mitigation work better.
46	General	I fully agree with the third paragraph under page 1, "Background" of your guidance that begins with: "The Agencies promote…." There are two concepts here that are implicit, but not discussed in the document. The first pertains to context, the second to what we called 'the Hierarchy Principle' by which we intended that any action on the landscape should: 1) maintain and restore basic ecological processes, 2) maintain and restore ecological structure, 3) maintain and restore ecological function, 4) maintain and restore particular ecosystem attributes, habitats, and species (this last one is likely not appropriate to mitigation sites, as you correctly point out).	No change needed.
47	General	The main point here is that these concepts are hierarchical and nested. We often cannot act upon the level of process (e.g. if removing Bonneville Dam is not an option….), but we can focus our actions on structure and function that are sustainable within the context of the existing processes. For example, if you cannot remove the dam (landscape scale), and you cannot breach the dike (site scale), you can still restore both structure (vegetation) and function (nutrient cycling, habitat, flood control) behind the dike by removing the grazing cattle and re-planting the wetland and floodplain to a native species community.	No change needed.
48	General	This concept of hierarchy, or a nested approach to mitigation seems to be missing from your guidance. My over-riding concern is that you may unintentionally deny mitigation sites which may provide both improved wetland structure and function (and even acreage), but does not restore driving ecological processes. Unless I misunderstand the chart on page 7, there is no way to successfully complete this chart EXCEPT by selecting process-based restoration sites. While I strongly agree that process-based restoration is the highest priority, it is not always possible or practical, and may not even be an appropriate goal for many small impacts within the existing regulatory framework. Process-based restoration is almost by definition extremely costly, and therefore likely NOT the goal of the vast majority of compensatory mitigation projects, many of which are related to relatively small wetland impacts (1 acre or less).	We have changed our approach to mitigation to reflect the latest scientific information. This is described in Part 2.

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49	General	That doesn't mean that improving ecological structure and function should not be considered. In fact, because of the regulatory requirement to consider wetland acreage and function, it is far more likely that wetland mitigation projects become focused on functional replacement by de facto, and fail to even acknowledge landscape setting or ecological process context. In this light, clarity in your guidance to a watershed approach based on prioritizing process-based restoration within a hierarchical context (process, structure, function – in that order) is key to your overall success, and deserves much more elaboration in your document.	This issue in now addressed in Part 2.
50	General	DNR program staff reviewed this document with respect to: 1) clarity of the document in addressing stated objectives, 2) ensure that scientifically sound information is cited in support of the approach, 3) ensure that assumptions are explicitly stated and logical, 4) limitations and uncertainty in the approach is acknowledged and reasonable, and 5) relevance for management of State-Owned Aquatic Lands (SOALs).	No change needed.
51	General	The Draft Guidance highlights the importance of sound guidance for both impact avoidance and watershed characterization. All three must be seamlessly linked – a difficult task when they are being developed separately. Given the importance of these various documents for the future of mitigation and habitat restoration in Puget Sound, it would be appropriate to seek review of these guidance documents by the Puget Sound Recovery Implementation Technical Team.	Unfortunately we have not received any comments from PSP when this document went out for public review, however, we will accept comments at any time. We expect that the document will be revised periodically.
52	General	This is such an important topic, and there are so many knowledgeable and articulate people in this area who could help inform this subject, I wonder if you might consider taking the time to develop a workshop, perhaps in partnership with the Environmental Protection Agency or the Puget Sound Partnership, or Tribal interests in the area (or, preferably all of the above) who could help to create a unified vision of what we believe a watershed approach to mitigation might look like.	This is a good suggestion but we currently have no plans for such a workshop.
53	General	Some sites, such as reed canarygrass infested wetlands, may need to be avoided because of the sheer hopelessness of restoring there; alternatively, we have had really good luck controlling rcg with willow staking, then in-planting with other woody wetland species (such as western red cedar).	Invasive are now addressed in Question 3F.
54	General	While this approach is valuable and makes sense for many situations, it is not really structured to deal with estuarine wetlands. Some of the processes that allow the formation and persistence of estuarine wetlands are substantially different from those that support other types of wetlands and the approach outlined in this document promotes out-of-kind mitigation. Consequently, I am concerned that this will lead to a net decline in the protection and restoration of the processes that support estuarine wetlands.	Section on "Scope of This Guide" emphasizes that the guide does not address estuarine processes, and that estuarine impacts should be replaced in-kind.
55	General	The watershed approach makes better sense in the humid parts of the state than it does in the semi-arid areas east of the mountains. Even though the WRIA maps seem to indicate a coherent set of drainage basins, there are large portions of Eastern Washington that are not effectively drained because there is no effective runoff. In these dry landscapes the drainage system is so weak or ephemeral that it does not provide any valuable integration to the regional ecology. For such places the protocol of selecting a mitigation site according to the WRIA map polygons may not be as important and as ecologically sensible as selecting an appropriate, nearby sites that lies outside of the documented and mapped drainage basins.	The watershed approach can be used in the more arid environments but it will require some modification. We clarified in "Scope of this Guide" that guide is intended to be used only in western Washington. Separate guidance for the eastern Washington will be forthcoming.

#	Section	Comment	Response to Comment/ Action Taken
56	General	Eastern Washington is a huge slab of basalt that subtly tilts this way and that to create well defined drainage basins. However, vast areas of the basalt slab are not connected to the drainage basins. Water simply runs into concave positions in the basalt landscape and evaporates because it can not infiltrate and has no place to go. When these depressional wetlands are filled, replacement wetlands of the same type can be created anywhere on the basalt slab where conditions permit wetland creation. Finding a wetland creation site that will funtion as designed is infinitely more important than the location of the creation site. Whether the water ponds and/or evaporates in one drainage basin or another is irrelevant. Let biologists create wetlands in areas where creation can be successful rather than within lines arbitrarily draw on a map. There are obvious reasons for the replacement of slope and riverine wetlands within the same drainage basin, but in most cases those reasons do not apply to depressional wetlands.	See response to Comment 55.
57	General	I agree with comments by Ms. Z and Mr. X. Beside the fact that the local CAO 'S are designed to address SEPA requirements and prefer onsite mitigation. In addition the nature of the majority of the wetlands in most of eastern Washington are associated with the scablands or seasonal streams and by nature are isolated , discrete depressional or slope wetlands that are not well integrated into a well defined drainage or watershed. So mitigation should address the loss or impact on that discrete "pothole" type wetland and be preferably onsite and inkind. Often in a semi-arid landscape, or for that matter an urban landscape, the isolated wetland has a strong oasis character in terms of vegetation and wildlife and is the "only game in town" so making sure that proximity mitigation occurs is ecologicaly criticaly important.	CAOs are increasingly more flexible in allowing for a watershed approach to wetland mitigation - see footnote on page 2 of document. Clarified in "Scope of this Guide" that it is intended to be used only for western Washington. It is our hope to develop a separate guide for use in eastern Washington.
58	General	I think the watershed approach is appropriate for managing the majority of wetlands in Washington counties and WRIAs east of the Cascade Crest. Yet the diverse geography and ecology of Washington east of the Cascades requires a comprehensive and flexible approach to defining the contextual boundaries of meaningful, legitimately functional wetland mitigation and banking. The dry lower eastern slopes of the Cascades, the Columbia Basin and the Okanogan highlands are surrounded by more mesic landscapes. Moreover, exclusive of the Okanogan Highlands and Blue Mountains, the geology and hydrology of the region is dominated by the effects of the great Missoula floods. This influence includes the Palouse, not just the channeled scablands and plateaus.	See response to Comment 55.
59	General	Locating mitigation outside a defensible ecological and geographic context is a slippery slope. One “pioneering” wetland bank in the Colville River drainage was used to credit wetland impacts 45 or 50 miles away to the south, across the Spokane River on the West Plains of Spokane County, at Medical Lake. These two locations are substantially different in geology, hydrology, soils, watersheds, ecology, and wetland types. The wetland impacts at Medical lake were not compensated or mitigated.	Guide does not advocate locating mitigation outside of major river basins. Clarified in "Scope of this Guide" that it is intended to be used only for western Washington. It is our hope to develop a separate guide for use in eastern Washington.
60	General	What WRIAs are, and what they aren’t: But let’s be clear at first about WRIAs, which are water resource inventory areas. A few of them are actual watersheds, though the majority are not, and their boundaries run along major receiving streams, or bisect larger order streams. Those along the Spokane River are good examples. Other boundaries are the state lines with Oregon and Idaho, and the international boundary with Canada. So, while WRIAs might make convenient, easily recognized administrative units, we can’t consistently rely on them for legitimate wetland banking or mitigation.	Our guidance advocates using locally-designated watersheds, not WRIA's. See text boxes titled "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".
61	General	WRIAs may work in more areas of eastern Washington than Mr. X asserts, but should not be confused with watersheds.	See response to Comment 55.

#	Section	Comment	Response to Comment/ Action Taken
62	General	Watershed and other boundary contexts: Let's return to the question of wetland function and a watershed-based analysis for management and mitigation. While Mr. X is right about some wetlands in the Columbia Basin, more are in well defined catchments which experience significant runoff and more importantly, infiltration. Even in very arid parts of the Columbia Basin, drainages like Crab Creek, Lake Creek, Sinking Creek and Wilson Creek are associated with wetland complexes. Southern Spokane County has hundreds of wetlands in a forested scabland matrix which drains generally southwesterly, as parts of either the Palouse or Crab Creek watersheds. The forested wetland complex of the Medical Lake area is the headwaters of Rock Creek which drains to Crab Creek, and the wetland complex at Reardan is the headwaters of the main stem of Crab Creek itself. Even in very dry parts of eastern Washington, there are large areas that are ecologically integrated as functioning drainages. I agree that places like the Big Bend country of the Waterville and Omak Plateaus experience less drainage, but they are nevertheless integrated ecologically, in part by hydrology.	See response to Comment 55.
63	General	Ultimately, no wetland banking scheme is legitimate which fails to retain wetland function and values in the ecological and landscape context where the impacts are allowed to occur. This reality demands appropriate and legitimate criteria which define these contexts. Watersheds will often be appropriate units of analysis for this purpose. Other "units" might include particular landforms, like the West Plains of Spokane County, or the potholed, glacially deranged landscapes bisected by the Columbia River in Grant and Okanogan counties, mentioned above.	See text boxes titled "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit" for discussion on scale of hydrologic unit to use. Also see response to Comment 55.
64	General	Wetland functions should also be considered. A fifty acre palustrine emergent marsh does not have the same habitat functions as 50 one-acre palustrine emergent marshes in the same ecosystem, even though they may share some functions and species. The smaller systems sustain more amphibian breeding and don't have predatory fish. The 50 one-acre wetlands will have many more edges and littoral areas than the larger wetland, sustaining many more migrating shorebirds, for example.	This guidance is not meant to address the suitability of individual projects at replacing functions. We have tried to clarify that issue in Figure 1.
65	General	Many vertebrate species are inconveniently "site philopatric", using specific locations for breeding, wintering and migration over many generations. This is as true for seasonal movements of resident species as it is for those which migrate long distances annually. Even some arthropods like monarch butterflies use highly specific migratory paths, waypoints and destinations for breeding and wintering. Many shorebird species return to the same few square meters to breed after long intercontinental migrations from traditional wintering grounds. Wetland impacts are much more disruptive than we typically want to think about, so that every aspect of "in-kind" mitigation, which some have characterized as unduly limiting and constraining, should actually remain paramount in priority when possible. When not possible, mitigation ratios should be scaled up substantially, and attempts to label compensatory mitigation as replacing impacted function should be rigorously avoided.	Guide emphasizes in #7 under Part 1 that it may be difficult to show that out-of-kind mitigation is justified without doing a watershed characterization.
66	General	My perspectives here don't address ongoing wetland impacts in densely populated part of western Washington, but future development in larger markets in eastern Washington will continue to blur these distinctions. Many wetland functions simply will be lost permanently if mitigation and banking standards are not honest and rigorous. We should accept this and communicate honestly about likely outcomes to the public, and to executive and legislative stakeholders.	These are policy issues that are beyond the scope of this guidance. We have edited the text to reflect the difficulty of maintaining functions in urbanizing areas.

#	Section	Comment	Response to Comment/ Action Taken
67	General	Analytical units for determining wetland banking service areas and for scoping wetland mitigation: Watersheds; WRIAs; Wildlife migratory corridors and traditionally used habitat components; Geomorphic units like the West Plains of Spokane, Waterville Plateau, Omak Plateau, Mima Mounds, major river deltas and estuaries; Fluvial process (see Watersheds); Combinations of these features.	There are many ways to scope areas for analysis. We are focusing on watersheds because the Federal rules now mandate a watershed approach. Other classification schemes may work for specific goals, and we did not attempt to address all of the different ways this can be accomplished.
68	General	The one concern that I have involves the desire to compensate with like HGM classes (Criteria C3). On the East side, riparian wetlands can be very difficult to replace in-kind - particularly in the dryer areas and watersheds that have been cleared for agricultural production. The seasonal runoff is often gone before the growing season, making it difficult to establish hydrology at the wetland site. And the runoff can be quite destructive, making it difficult to keep grading and plantings in place. We would like the flexibility to focus functions instead of HGM. For example - The Palouse - water retention/flood flow attenuation is needed in the watersheds. So when we replace a bridge over a stream and need to mitigate for adjacent wetland impacts, replacement depressional wetlands can be allowed because they will replace the flow attenuation function. That still incorporates the spirit of the watershed approach, with some latitude given to site-specific circumstances.	Such issues will need to addressed in the guidance for eastern Washington, but they are not appropriate for western Washington.
69	General	I have a general question concerning watershed characterizations: How long are watershed characterizations considered to be current or valid? In watersheds on the urban fringe where conversion to urban uses is most active, conditions may change dramatically within a few years. Is there a standard for revisiting watershed characterizations to ensure that they accurately reflect conditions on the ground?	This guide is written with the intent to modify it as new information becomes available.
70	General	Generally support watershed approach, although I believe in most cases on-site mitigation would be ecologically necessary to maintain the affected functions on the impact site. I think urban areas in particular still need wetlands mitigation on-site, even if poorly functioning, it is better than none.	No change needed.
71	General	There is a Watershed Characterization that DOE has drafted for Clark County. It would be helpful if this could be finalized and we could get associated GIS layers in order to help implementation of the guidance in our region.	Comment noted. No change needed.
72	General	Is the Draft Guidance consistent with recovery of listed species, including Puget Sound Chinook, Hood Canal Summer Chum, and Southern Resident Killer Whales? To what extent are new watershed impacts (and associated mitigation with varying levels of effectiveness) consistent with the need, identified by NMFS, to increase salmon habitat productivity? The Draft Guidance needs to address these issues.	These are policy issues that are beyond the scope if this guidance. We have edited the text to reflect the difficulty of maintaining functions in urbanizing areas.
73	General	The definitions regarding watersheds and subbasins need to be better defined. The definition for watershed is too broad. As described on page 1, the guidance would allow wetland mitigation to occur outside of the impacted WRIAs based on the definition of watershed. Also, I am unaware of watershed that has data for its entire impervious surface coverage readily available for use by applicants and their consultants. In contrast, many subbasins (i.e. WRIA 8's Bear Creek basin) have data about the extent of impervious surfaces.	See revised text boxes titled "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit" for discussion on scale of hydrologic unit to use.

Responses to the comments received on Draft Guidance on Choosing Mitigation Sites Using a Watershed Approach

(Draft sent out for peer review during the spring of 2009)

#	Section	Comment	Response to Comment/ Action Taken
74	General	There are some terms and phrases associated with the technical decisions where scientific criteria are not provided, but should be, or the associated assumptions clearly stated. Examples include: 'high water level fluctuation' 'habitat connectivity' (page 8) 'sustainable' (pages 1, 2, 5, 7 11) 'successful' (pages 2, 5).	It was not the intent of this guide to provide a detailed procedures for answering the questions. As we say in the introduction, this tool is to be used by experienced wetland scientists who should be able to answer these questions to the level of accuracy we were expecting in this guide. We have also simplified the questions in the table to reflect some of the comments we received.
75	General	It was suggested that something like "organic debris" be substituted for "wood".	Term was deleted
76	General	The terms mitigation and restoration are used somewhat interchangeably throughout the text, which may create some confusion from a policy standpoint. I recommend clarifying these terms and adding definitions, so that the policy implications are clear.	We have revised text to avoid this confusion
77	General	The narrative and graphical presentation is easy to follow.	Comment noted. No change needed.
78	General	This document flows well and the content is concise and clear.	Comment noted. No change needed.
79	General	Thanks for the opportunity to review this document. It's well-written and the flow charts are intuitive.	Comment noted. No change needed.
80	General	The flow charts could use some work in terms of readability and it might be useful to have an accompanying manual for a more in-depth examination of the GIS approach or a step-by-step with a specific (real) example site to give it better context. Therefore, I see 2 documents; 1 overview of the approach and background and 1 for site-specific example and step-by-step GIS guide. We could even help them prepare the technical GIS manual if they would be interested in getting support if there is money.	Document was revised to increase clarity and ease of use. We do not foresee splitting this into two documents or providing additional manual at this time. A link is given to a separate document that instructs users on how to conduct a GIS-based approach to watershed characterization.
81	Title	The title of the document should clearly indicate that this is guidance for *compensatory* wetland mitigation (page 1).	Title revised to include "Wetland".
82	Intro, 1st para	It looks like this guidance is not just talking about on-site vs. off-site, but also in-kind vs. out-of-kind.	Guide notes that out-of-kind mitigation may sometimes be best choice to restore watershed processes, but this is not emphasized. Different types of mitigation have been clarified in the definitions section.
83	Background, 1st para	Isn't the bias a result of regulatory requirements? If so, it should be stated as such.	Guide acknowledges government role: "Our past policies and practices have over-emphasized…". No change.
84	Background, 1st para	Add to end of 3rd sentence: ", including the 1990 MOA, which created specific policy guidance to undertake mitigation 'in close proximity to' the impact."	No change. Comment is more detailed than we intended for this section.
85	Background, 1st para	You are implicitly raising the issue of ecological context here (4th sentence) – needs more elaboration in text.	Comment is not clear. Added Appendix B to provide more background on ecosystem-based approaches.

#	Section	Comment	Response to Comment/ Action Taken
86	Background	It might be good to include a paragraph describing how this approach would tie in to local government regulations – For example, the City of Tacoma does not allow wetland impacts within the City to be mitigated for outside of the City, so it is difficult to implement this approach in the case of this particular jurisdiction.	Addressed limitations of local CAOs in new footnote. Watershed approach is not precluded by staying within city boundaries - see text box: "Defining Geographic Scales in Watersheds".
87	Background	On a similar note to the previous comment, it would be helpful if this approach somehow included consideration for local politics/social issues, land use constraints, etc. – as these will often pose as challenges to adhering to this methodology.	Introduction to Path 2 acknowledges other considerations in mitigation planning, but emphasizes importance of choosing mitigation sites that restore watershed processes.
88	Background 2nd para	In the Background section, page 1 line 15, you characterize a tendency toward on-site mitigation as a reason for failed mitigation; as I read those documents, an absence of aftercare or even failure to carry out the restoration were the main causes of failure.	No change. This section notes that the studies identify a number of reasons for mitigation failure.
89	Background, 2nd para	We also hear from applicants that local governments have not been as willing to accept a watershed approach.	Implementing watershed approaches will be a gradual process. Added footnote on evolving perspective at local jurisdictions.
90	Background, 2nd para	Re: 3rd sentence - Isn't the intent to clarify agency policy? Purpose is to clarify steps from agency perspective so that applicants will understand what's anticipated/expected. There is no national uniformity on this process, which is at least partially why you're writing this, right? So it's to get you all on the same page, so that the applicants can use an agreed-upon approach/framework/analytical tool? The tone here may not be what you're striving for, or accurate.	No tone or judgement is implied. No change needed.
91	Background, 2nd para	In last sentence, add "provide a consistent approach to applying these concepts." and delete "close this gap" at end of last sentence.	No change.
92	Background, 2nd para	RE: last sentence - Isn't the ultimate goal to achieve a higher rate of mitigation site success? Providing practical tools to achieve these concepts is a great goal.	Comment noted. No change needed.
93	Text Box	In re: the text box, use of 'processes function' is confusing in this context. Ecological processes related to watersheds and wetland formation in the landscape is really what you're talking about here, right? More specificity and clarity would be helpful here.	Text box revised to clarify wording.
94	Background, 3rd para	In 1st sentence, add "structure and function," after "restoration of watershed processes". (see hierarchy principle in Ecological Lands Handbook)	No change in this sentence, but added Appendix B to provide background on relation of processes to structure and functions.
95	Background, 3rd para	Is there any existing examples where offsite mitigation is more effective and sustainable? If so they should be stated here as examples.	Added text box: "Sustainable Mitigation Site". We did not add specific examples because they might be misinterpreted as the only solutions.
96	Key Point 1	Watershed defintions include entire WRIAs. I fail to see how even a large wetland mitigation bank in a subbasin would restore watershed processes for an entire WRIA. The scale is too large and should be at a subbasin or smaller level.	Revised text boxes: "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".

Responses to the comments received on Draft Guidance on Choosing Mitigation Sites Using a Watershed Approach

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#	Section	Comment	Response to Comment/ Action Taken
97	Key Point 1	Need to define what you mean more specifically (by "watershed processes") – you're really talking about hydrologic processes here I think (well, that, and glaciation in Western Wa, but that gets us into the Time Principle – See Ecological Lands Handbook).	Added "ecological processes" to Definitions page and revised definition for "watershed processes". Also added Appendix B to explain processes.
98	Key Point 1	The resource and mitigation considerations identified on page 2 of the Draft Guidance are internally contradictory and fail to identify necessary goals. For example, the very first key point declares: "Mitigation should be located where it will help to protect or restore watershed processes as much as possible." (emphasis added). Which is it – protect or restore? The correct answer should be that compensatory mitigation restores habitat, as necessary to offset the unavoidable habitat impacts that triggered the compensatory mitigation obligation. Mitigation that merely "protects" habitat is not mitigation and simply leads to "legitimized" habitat degradation. Similarly, qualifiers such as "as much as possible" need to be excised from the text. They open the door to the kind of exercise of discretion that has resulted in the dismal record of mitigation ineffectiveness that the Draft Guidance seeks to reverse.	Deleted "as much as possible". Mitigation activities can both protect and restore ecological processes. Preservation is a valid mitigation goal (see new charts in Part 2).
99	Key Point 1	There may be narrow circumstances where protection of wetlands may be deemed appropriate as mitigation. Such a course may be permissible in circumstances where the "protection" action results in increasing the assurances that watershed processes will be restored. These narrow circumstances need to be carefully delineated so that they do not undermine the overall goal of compensatory mitigation.	The agencies believe that preservation is a valid mitigation option. This guide does not emphasize preservation except to mention in the new charts in Part 2 that a site that is functioning well may be suitable for preservation.
100	Key Point 2	I agree with this as a key point, but it would help to clarify who does the characterization. Acknowledge that it is typically a 'one time' effort that can inform multiple mitigation decisions. This will make it clear that characterization is not required on a project by project basis.	The section, "Choosing One of Two Paths" clarifies that users of this guide will either use existing watershed plans, or answer the questions in this guide to select mitigation sites. They are not expected to do watershed characterizations themselves.
101	Key Point 2	Re 2nd bullet - See Hierarchy Principle –Process, Structure, function. You can't have the function without the structure.	Added Appendix B to explain the relationship between processes, structure, and functions.
102	Key Point 2	The first step should be to identify critical locations within the watershed where projects must be avoided. We need to be protecting key habitats in watersheds that are so crucial that no impact is acceptable. After we have done this, then we can get to the question of "where" to mitigate by connecting compensatory mitigation to those key habitats or at important, yet altered process locations (e.g., next bullet)].	Yes, but the main way this goal is achieved\ is in comprehensive planning and in watershed planning. The users of this document are needing to provide compensatory mitigation. Links to references were added to guide users on avoidance and minimization of impacts.
103	Key Point 3	Where a suitable watershed plan is unavailable additional guidance would be beneficial for insuring that the priorities are clear and understood. Any assessment based on landscape principles will be greatly affected by the scale of the assessment. This issue of scale needs greater attention in this guidance document.	Revised text boxes: "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".

#	Section	Comment	Response to Comment/ Action Taken
104	Key Point 3	The Draft Guidance makes the convincing point that compensatory mitigation, as it has been practiced, has failed to provide the habitat compensation/restoration that was intended. It is equally convincing in stating that mitigation decisions must be made with an understanding of watershed ecological conditions and functions. From there it is a natural, appropriate, and necessary step to call for characterization of watersheds in advance of mitigation so that decisions address what watershed processes and functions need to be restored. The disconnect occurs when the guidance declares that when a watershed characterization is not available, mitigation sites "can be selected using knowledge of basic landscape principles." This exception is contrary to what the guidance admits is essential to achieving necessary improvements in mitigation effectiveness. This "knowledge of basic landscape principles" (whatever that is) does not provide the context needed to determine whether avoidance and minimization requirements have been met nor does it provide adequate guidance regarding the choice of doing mitigation on-site or off.	Revised Key Point 3 to note that the "principles of landscape ecology" are those used in Charts 2 and 3. One uses these charts if there is no watershed plan for an area. Document also clarifies that we assume that minimization and avoidance has been done prior to use of the guide.
105	Key Point 3	"Landscape principles" is a bit vague, landscape ecology?	Sentence was reworded.
106	Key Point 3	Again, defining these ("Landscape principles") upfront would be extremely helpful here. If you have defined landscape principles up front, then the relationship of the landscape to the ecological processes may become more clear.	Revised Key Point 3 to note that the "principles of landscape ecology" are those used in Charts 2 and 3. One uses these charts if there is no watershed plan for an area.
107	Key Point 3	Unclear what is meant by basic landscape principles. Is it appropriate to reference the use of the watershed plans here since this is a main component of the subsequent guidance?	Revised Key Point 3 to note that the "principles of landscape ecology" are those used in Charts 2 and 3. One uses these charts if there is no watershed plan for an area.
108	Key Point 4	Consider simplifying this to state that onsite mitigation may be appropriate when these two factors are present—leaving the issue of characterization to the previous bullet. In many cases characterization may not provide enough site-scale information to determine if a particular on-site option is appropriate.	Revised Key Point 4 accordingly.
109	Key Point 4	Re 1st bullet: Context - need to understand what those processes are and how they're impaired to get to this.	This point is further explained in Charts 1 and 2.
110	Key Point 4	Re 2nd bullet: This is a key point, if we can't be reasonably assured of success, then we need to be willing to deny permits that affect critical, difficult to replace habitats].	No change needed.
111	Key Point 5	"Functions" = natural environment. "Values" = built environment – the context within which we live and in which many systems find themselves. Human development IS a major process on the landscape which has fundamentally impaired many ecological processes from functioning.	Key Point 5 was reworded and its focus changed.
112	Key Point 5	Could be read as if the functions and values can be replaced, it is okay not to avoid, which would conflict with the 404b1 guidelines. Impacts should be avoided to the extent practicable regardless of whether their functions and values can be replaced. We have run into issues where the impact is at a low quality site that could be avoided, but mitigation would create a higher value wetland. This type of situation is difficult to permit/determine compliance with the 404b1 guidelines.	Key Point 5 was reworded and its focus changed.

#	Section	Comment	Response to Comment/ Action Taken
113	Key Point 7	This sentence needs to be modified, as the document should not be tailored so specifically towards wetlands. However, this also needs to make it clear that out-of-kind mitigation should not be used for impacts to unique, limiting habitat in a watershed – these should be replaced in-kind. If like habitats cannot be located for mitigation, then impacts need to be avoided	Key Point 7 reworded to emphasize that resource trade-offs must be justified. Clarified in title and section on scope that document addresses wetland mitigation only.
114	Key Point 7	It would be helpful to know more about out-of-kind mitigation and what set of circumstances are needed to justify that approach for mitigation.	Key Point 7 reworded to emphasize that resource trade-offs must be justified. Noted that is difficult to do in absence of watershed characterization.
115	Key Point 7	I am really concerned that this will result in a shift away from protecting estuarine wetlands in favor of protecting other wetlands. The watershed characterization approach is very valuable, but is not designed to deal with estuarine processes.	Key Point 7 reworded to emphasize that resource trade-offs must be justified. Added sentence to "Scope of This Guide" to emphasize that the guide does not address estuarine processes, and that estuarine impacts should be replaced in-kind.
116	Key Point 7	Could using a watershed approach also result in mitigating freshwater impacts with estuarine wetlands and vice versa? In the mitigation guidance we say that estuarine wetlands are usually compensated in-kind (i.e., with another estuarine wetland) and freshwater wetlands are rarely acceptable as compensation for impacts to estuarine wetlands.	Added sentence to "Scope of This Guide" to emphasize that the guide does not address estuarine processes, and that estuarine impacts should be replaced in-kind.
117	Key Point 7	It provides no information as to the efficacy of doing off-site mitigation that restores different functions than those that are being unavoidably harmed. (See Key Point #7, Draft Guidance at 2).	Key Point 7 reworded to emphasize that a watershed characterization is the best method to assess whether function tradeoffs are appropriate.
118	Key Point 7	Add to end of 2nd sentence: "or have been more impacted by historic land uses (e.g., historic salt marshes or estuaries that were converted to agricultural lands)."	Key Point 7 reworded to change emphasis. This suggested change no longer fits with new wording.
119	Key Point 7	More explanation of what these rare instances would be helpful here. What criteria would be used to evaluate appropriateness?	Key Point 7 reworded to emphasize that a watershed characterization is the best method to assess whether function tradeoffs are appropriate.
120	Key Point 7	Please provide an example of the rare instances.	Key Point 7 reworded to emphasize that a watershed characterization is the best method to assess whether function tradeoffs are appropriate.
121	Text Box	Watersheds it too broadly defined elsewhere in the guidance document; therefore this dialog box needs to be changed to subbasin or smaller scale.	Clarified scale by revising text boxes: "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".

#	Section	Comment	Response to Comment/ Action Taken
122	Text Box	Consider qualifying first sentence to say "In some urbanizing areas…" Urban areas have been located without regard to watershed characteristics, so this concept is problematic. What happens if that watershed characterization shows the "urbanizing area" as the most important area for water processes? Be careful not to over simplify the issue of urban/non urban. Also, it would help to provide guidance on how one reconciles this with the "avoidance" bullet above (#5).	A qualifier was added to this sentence.
123	Text Box	Use of the phrase "in nearby watersheds" may be interpreted as "out of basin" mitigation and complicates the discussion of watershed characterization and how it can be used to make decisions on siting mitigation projects. Might be helpful to rephrase this using terms defined below.	Word usage has been changed to "hydrologic unit of the same scale."
124	Text Box	Some functions cannot be transferred to another site but must be performed on site or nearby (flood storage). Perhaps we can list typical functions that can be transferred easily and functions that are not so easily transferred. I don't want people to do mitigation off-site and necessarily think they are done. I would rather they have the up-front knowledge because it can cost more. This paragraph (text box) only leads them to conlcude that they can wholly mitigate offsite.	Charts and text have been revised to better address the issues of transferring functions and sustainability.
125	Text Box	In your text box on page 2, I find so many things to not like. One is that by avoiding urban areas, you are failing to serve urban areas. When you use the watershed approach, I think you are going to have to be vigilant that all of your restored services start creeping upstream in the watershed. Downstream and urban areas can benefit from restored services, even if it is harder to sustain them. Remember, there are more reasons than restoring function to do a restoration: there is constituency building, getting public buy-in for a project, cultivating politicians, etc. And though it takes more subsidy to make a project work in an urbanized area, there are more resources to feed into a project. Finally, the title, "Making Science-based Choices…", really seems to be refutable as simply making a value decision about where to do restoration because it is harder to do in the city.	Charts and text have been revised to better address the issues of transferring functions and sustainability. Some functions may not be adequately maintained in disturbed hydrologic units, and a policy decision has to be made to allocate societal resources to continually maintain them if it is desired that they be kept there. This guidance does not attempt to make such policy decisions.
126	Text Box	Suggest changing title of box. It is often difficult, less expedient, and more expensive, therefore less preferred to locate mitigation in the same watershed as the impact, but it is incorrect to say that is a science-based approach. The science is pretty definitive that if you degrade or remove wetlands from a watershed you will adversely impact the habitat functions of the receiving waters. When practiced on a scale such as what has happened in the watersheds leading to Puget Sound, this policy can turn one of the richest estuaries in the world to a home for starving Orcas in less than a person's lifetime. The sustainability of ecological functions provided by wetlands in urbanized areas is based, in large part, on the level of ecological functions provided. A science-based approach would seek to increase ecological functional capacity in low functioning watersheds, not further diminish it; particularly in a regulatory climate of protective critical areas ordinances. Then there is the practical challenge of how to scientifically trade off watersheds functions? How would a net gain be demonstrated?	Title of text box changed to "Making Choices Using a Watershed Approach". Also revised box to clarify that we are not precluding siting mitigation in urban areas but that urban mitigation is often not sustainable without long-term management.
127	Text Box	(Continued from previous comment.) The ultimate outcome of allowing extinction of urban watershed functions in favor of other watersheds is the death of nature in urban areas. It is the swan song of urban residents connectivity with the earth that provides them with life. It means fewer childhood memories of exploring the neighborhoods wet treasures and inhabitants.	Text box revised to emphasize that urban wetlands often provide significant recreational and educational opportunities.

#	Section	Comment	Response to Comment/ Action Taken
128	Text Box	This is an important point, but compensation for impacts to these wetlands should probably include off-site mitigation focused on sustainable functions/watershed priorities AND enhancements on–site that provide some of the lost functions, although not in the same way – e.g., LID retrofits with native landscaping, treatment/storage wetlands that provide amenities in urban areas but are not required to provide or replace all functions…..Your charts capture this so maybe just provide a link to those here.	Text box revised to make clear that it may be necessary to split mitigation and provide some functions on-site.
129	Text Box	Second sentence – I would say this is particularly true of wetland fxs (functions) related to water quality and habitat – but water quantity-related fxs (i.e. flood storage) become even more critical in these types of systems – and these functions cannot be exported off-site. I like the idea of this text box, but it needs to be tightened up to be more clear.	Text box revised to make clear that it may be necessary to split mitigation and provide some functions on-site.
130	Text Box	It is unclear how the guidance provided in this text box relate to Critical Area Ordinances, or how this might be implemented given local restrictions. Although we appreciate the underlying premise presented here, there are special recreational and educational values associated with remnant urban wetlands that should be addressed.	Text box revised to emphasize that urban wetlands often provide significant recreational and educational opportunities.
131	Text Box	If we are simply talking ecological processes, and one can prove that those processes have been jeopardized in that urban setting more so than in a non-urban setting, than this statement may be appropriate. Wetlands in an urban setting can function similarly to a non-urban setting if factors impacting the wetland can be addressed long-term. Such things as preventing road dissection or proximity to wetlands (and subsequent runoff) without mitigation thru culvert or overpass inclusion, housing developments in proximity to wetland, runoff to wetland from non-point, etc. It comes down to ensuring those impacts are not allowed over time; where that assurance cannot be obtained, then mitigation sites outside UGA might be appropriate. However, assumed “safe” locations outside UGA can find themselves in a precarious state as growth continues and development expands, especially any locations on perimeters of UGA that are later annexed. Whether within or without a UGA, it comes down to identifying key habitats throughout the jurisdiction and working towards protecting those from all future uses (and their connectors) thru the cooperation of the jurisdiction or state growth management act.	There are many policy implications to using this guidance. We only note that local jurisdictions may require modifications to this. We do not attempt to address this because there are so many different options
132	Text Box - Watershed Definitions	Consider consolidating definitions sections – some definitions are provided here, while most are provided at the end of the document. If consolidation is not possible, it might be helpful to include a statement that explains that definitions are provided in those two locations. Also, it would be helpful to have a cohesive definition of “sub-unit” here.	Definitions critical to the discussion are highlighted in text boxes. Words that may have multiple meanings are defined in the glossary.
133	Text Box	While the Draft Guidance endorses taking a watershed approach to mitigation and seeks to explain both terminology and scale (p.3), more information is needed to address some of the complex real world situations in Puget Sound. For example, in south Puget Sound, there are several WRIAs that are made up of multiple independent drainages to marine water. They may be first, second or even third order streams, but they are independent drainages. To lump these together in a “watershed” and allow mitigation locations to cross independent drainage boundaries may be appropriate in some cases but should not be presented as an acceptable general guidance. Biological and physical resources are sometimes distinct in these systems. This underscores the importance of consulting with fish and wildlife managers when off-site mitigation is proposed.	Scale issues have been clarified in a text box
134	Text Box	Add "4th digit HUC" to broad scale in graphic in text box, and "6th digit HUC" and "sub-basin" to Mid-Scale.	Scale issues have been clarified in a text box

#	Section	Comment	Response to Comment/ Action Taken
135	Text Box	Watershed definition is too broad as defined here for purposes of this document.	Text box revised to clarify that assessments should be done within hydrologic units at a smaller scale than major river basins.
136	Text Box	Assuming a mitigation site could do so, I fail to see how restoring wood or hydrology in one watershed mitigates for these lost functions in another watershed.	We have tried to clarify the distinction between a sustainable mitigation site vs. one that replaces needed functions in a hydrologic unit. These are two completely different issues. The guide emphasizes that users should look for mitigation in same hydrologic unit as impact site unless mitigation is unlikely to be sustainable.
137	Text Box	I would move this section towards the front of the document as watershed is used several times in pages 1-2 but only first defined on page 3.	This text box is located in the document as early as we could reasonably fit it. No change possible.
138	Following 1 of 2 Paths	The discussion in this section seems to contradict what is said in the box on page 5 "Choosing watershed area". Here it says watershed characterization is best done at a large scale that covers a county, WRIA or major watershed. On page 5 it says to "Use the smallest unit defined by the local jurisdiction; … sub-unit, drainage or other term". This is confusing and needs clarification. Which is it? Does it depend on site specific circumstances, and if so what?	Text has been modified to clarify that characterization is done at county-scale but choosing a mitigation site starts from hydrologic unit that includes impact site.
139	Following 1 of 2 Paths	Are the two paths 1) Use an existing watershed plan to select a mitigation plan 2) Where a watershed plan is lacking, use criteria identified in this document? If so, I think you state that clearly by adding Path 1 title and Path 2 titles below.	Text has been modified to clarify the distinction between path 1 and 2.
140	Following 1 of 2 Paths	Re 1st para: This paragraph seems out of place here. What if you moved it below under "Identifying an Appropriate Watershed Plan"?	Text has been modified to clarify the distinction between path 1 and 2.
141	Following 1 of 2 Paths	Re 1st para: First sentence - Not sure of the intent of this word here (comprehensive).	Text changed to make it clearer the level of analysis that is involved in characterizations.
142	Following 1 of 2 Paths	Re 1st para, 2nd sentence: Somehow here I think you need to capture that it is not just the need to take a larger area into consideration but that there is a need to use units or boundaries that are based on HOW critical processes operate – so that our characterization/planning units align with ecological process units. i.e., this avoids many of the existing problems we've created as a society by managing natural systems as disconnected pieces rather than integrated systems.	Text changed to explain why characterizations are done at broader scale - the county line is not important, but the broad landscape approach is.
143	Following 1 of 2 Paths	Re 1st para, 2nd sentence: Mention HUCs since they are so often the default unit of mapping elsewhere – 4th digit HUCs.	HUCs are now defined in the text box: "Defining Geographic Scales in Watersheds". They are not discussed further as watershed planners do not use HUCs much in Washington.
144	Following 1 of 2 Paths	Re 1st para: I agree that jurisdictions that cover larger areas should be involved in characterizations; however, I think the small jurisdictions in the watershed must also be involved as they are the keepers of wetland information in their jurisdiction. Even King county does not have one master map of all wetlands in King County as much of the County is incorporated now.	Comment noted. No change needed.

Responses to the comments received on Draft Guidance on Choosing Mitigation Sites Using a Watershed Approach

(Draft sent out for peer review during the spring of 2009)

#	Section	Comment	Response to Comment/ Action Taken
145	Following 1 of 2 Paths	Re 2nd para: Who did a plan to restore ecological processes? I am only aware of salmon recovery plans; floodplains and some fish habitat plans. I don't think anyone has looked at the entire suite of ecological processes including all predators/ prey, sediment transport, wood transport, etc for a WRIA.	A link is now provided in this section that leads to a list of example landscape planning documents that have used a watershed characterization approach.
146	Following 1 of 2 Paths	Consider using a less subjective/more explicit qualifying term, e.g., agency-sponsored plans… and or give specific example of what is considered "appropriate." Or add a pointed to the text that follows below.	Section revised to avoid the term "appropriate". Now in new text box titled "Characteristics of Watershed Plans for Selecting Mitigation Sites".
147	Following 1 of 2 Paths	Re last para: Is this a realistic expectation? Do we think the person with a 2 or 4 lot short plat with a wetland is going to do this work or pay consultants to do so?	Guide has been revised to clarify that users either find existing watershed plans that have already done the tasks the commenter is referring to, or they use the flow charts in this guide to walk them through the landscape principles.
148	Following 1 of 2 Paths	Re last para: Yes, mention hierarchy principle here. (Process, structure, function).	Added Appendix B to explain the relationship between processes, structure, and functions.
149	ID-ing a Watershed Plan	To get the most out of this document, it would be helpful to have a more detailed explanation and/or specific examples of which watershed plans are "appropriate." The bullets below are helpful but may still leave a decision maker wondering which plans to consider. It would seem that some salmon recovery plans meet all of the criteria. The lack of reference to these plans may be intentional, but begs the question… why?	Guide now provides a link to several plans that used watershed characterization.
150	ID-ing a Watershed Plan	If possible expand this section to provide a more complete discussion of the various plans that are available and how the reader would evaluate them using the bulleted criteria to find potential mitigation sites.	Guide now provides a link to several plans that used watershed characterization.
151	ID-ing a Watershed Plan	Although these watershed plans may discuss recovery of endangered salmon species, this consideration doesn't appear to be a requirement of the approach described herein – Given the fact that (1) this document is intended to provide watershed-level guidance, and (2) salmon species have one of the broadest spectrums of watershed-level habitat utilization that makes them uniquely suitable to be biological indicators of watershed conditions pertaining to habitat functions and ecological processes, the guidance lacks consideration of salmon presence and habitat use in the decision making process associated with the selection of mitigation sites.	We are trying to keep this guide from being species-specific. Species specific restoration may be a good policy goal but does not address all the possible processes in a watershed that may need to be restored. This guide is meant to identify sites for mitigating impacts to wetlands. Many of the functions thus lost are not linked to salmon.
152	ID-ing a Watershed Plan	As written, the guidance does not acknowledge the fact that many Indian tribal governments also have watershed-based management plans and/or programs, permitting authority, and jurisdiction over land use both on their reservations and on trust lands located off-reservation.	Tribal planning departments are mentioned in the first paragraph under "Following One of Two Paths" and the section on tribal regulatory jurisdiction has been revised (see text box "Permitting Requirements".

#	Section	Comment	Response to Comment/ Action Taken
153	ID-ing a Watershed Plan	Re 1st para: Referring to the first sentence: I am not aware of any watershed plan that comprehensively looked and improving stream flow for fish by considering all water withdrawals and stormwater inputs, groundwater conditions, hydrography and water routing changes, etc.	A link is now provided in this section that leads to a list of example landscape planning documents that have used a watershed characterization approach.
154	ID-ing a Watershed Plan	Re 1st para: This reads as guidance for someone developing a watershed plan, not as guidance on determining if an existing plan is “appropriate.”	This issue is addressed in a text box
155	ID-ing a Watershed Plan	Re 1st para: This paragraph seems to blur the lines between aquatic resource mitigation and terrestrial habitat mitigation, as terrestrial habitat rely heavily on hydrology as well. Need to be careful with these statements	Comment noted. Cannot understand how text should be changed.
156	ID-ing a Watershed Plan	Re 2nd para: Consider asserting that this is the preferred method of watershed analysis and the other path is only if this method cannot be completed.	This is now stated in the first paragraph under "Following One of Two Paths".
157	ID-ing a Watershed Plan	Re 2nd para: Should cite some of the other tools available (besides ECY landscape tool) since this mentions a "variety of tools".	A link is now provided in this section that leads to a list of example landscape planning documents that have used watershed characterization approaches.
158	ID-ing a Watershed Plan	Re 3rd para: Give examples or list local jurisdictions that have completed watershed characterization.	A link is now provided in this section that leads to a list of example landscape planning documents that have used watershed characterization approaches.
159	ID-ing a Watershed Plan	Re 3rd para: Since I think there are only 3 (Whatcom, Kitsap, and Clark) it seems worth mentioning them specifically here, but also noting that many other jurisdictions have implemented watershed management plans.	A link is now provided in this section that leads to a list of example landscape planning documents that have used watershed characterization approaches.
160	ID-ing a Watershed Plan	Re 3rd para: Suggest that these are not watershed plans (text implies they are a form of one) but they may be used in lieu of watershed plans when they identify restoration priorities for an area.	We use the term "watershed planning efforts" loosely and refer to a variety of types of documents that may be useful to help in finding sustainable mitigation sites.
161	ID-ing a Watershed Plan	Re 1st bullet: As you’ve pointed out, most of the approaches are very focused on physical processes (water, sediment movement) and/or a single species (fish). There is a real need to incorporate biological processes – specifically including biodiversity plans or addressing processes, structures, and functions affecting wetland dependent or associated species would be very helpful.	Habitat processes have been added to the the discussion in Part 2.
162	ID-ing a Watershed Plan	Re 1st bullet: Clarify when we mean to refer to restoration and when to protection.	Restoratin and protection have very specific meanings in compensatory mitigation and we use them in that context.
163	ID-ing a Watershed Plan	Re 2nd bullet: What exactly is meant here? This needs clarification. (Refers to ""Provides a framework for protecting and restoring watershed processes.")	Text modifed to clarify this point.

Responses to the comments received on Draft Guidance on Choosing Mitigation Sites Using a Watershed Approach

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#	Section	Comment	Response to Comment/ Action Taken
164	ID-ing a Watershed Plan	Re last bullet: See Rarity principle in Ecological Lands Handbook – unlikely to be an appropriate goal for a mitigation site. Good to call this out here.	Comment noted, no change needed.
165	Lacking a Watershed Plan	In the absence of an approved watershed characterization, the prudent course would be to avoid causing impacts. Given the documented ineffectiveness of mitigation actions, the applicant needs to shoulder a greater proportion of the risk – perhaps through additional bonding requirements and a requirement that all affected state, federal, tribal, and local governments must agree to the proposed mitigation.	This guide emphasizes the need to avoid and minimize impacts prior to mitigating but recognizes that total avoidance may not be possible, including in areas that lack watershed characterization. We do not propose any changes to existing regulatory requirements.
166	Lacking a Watershed Plan	2nd sentence - Could really benefit from much more specificity here (referring to principles of landscape ecology). Even a citation would be helpful, or listing out the ones that you believe are most relevant.	This section revised to clarify that landscape principles referred to are built into the flow charts that follow.
167	Lacking a Watershed Plan	Re last sentence: Or when the characterization includes only the broad or mid scales????	This section was revised to clarify when flow charts should be used.
168	Applying the Charts	Shouldn't the applicant's analysis begin with: 1) analysis of impact at the site level (including fx assessment), 2) identification of watershed processes, 3) level of impairment of those processes, and relationship to site functions, 4) Id of watershed restoration or protection priorities, 5) Id of sites/areas w/in watershed specific to 4 above, 6) comparative analysis of 1 to 5 & 6 to id overlap?	Figure 1 added to clarify this point.
169	Applying the Charts	How will the user know if a watershed plan has been developed for the area? Who could they contact to find out? Again – a list of local jurisdictions that have watershed plans would be useful. It could be an attachment to this document.	The document now provides guidance on how to find this information.
170	Text Box	This introduces a new term / different scale. Why not stick with "watershed" or one of the terms defined above?	This text box (now called "Choosing a Hydrologic Unit") was revised to be consistent with the rest of the document.
171	Text Box	In the text box above it says "Where the chart suggests looking for off-site mitigation in a different watershed, it means to look in a sub-unit that does not include the contributing area of the impact site." It would be helpful to be clearer about the definitions and scale you are referring to. The document does not use the same words consistently. I would suggest defining the scales of units that should be considered: sub-basin, basin, watershed, WRIA or whatever terms you prefer and consistently use the same term for the same scale you want the user to use.	Terminology was clarified in text boxes titled "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".
172	Text Box	It would be very helpful to clarify what scale is needed to be used here. Is the description in this box referring to watershed planning under ESHB 2514 which uses the Watershed Resource Inventory Area (WRIA) designations as broad planning areas. ASHBY 2514 is codified in RCW 90.82. These WRIA's are roughly equivalent in scale to the six-digit Hydrologic Unit Codes (HUCs) established by the USGS. Individual basins and sub-basins are identified within the WRIA's	The intended scale and related terms were clarified in text boxes titled "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".
173	Text Box	Also note that the last sentence better describes what should be done for offsite using a smaller scale than an entire watershed.	The intended scale and related terms were clarified in text boxes titled "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".

#	Section	Comment	Response to Comment/ Action Taken
174	Text Box	Where do applicants find information about county watersheds and subunits?	The document now provides guidance on how to find this information.
175	Note on consulting agencies	I suggest adding this information to the 1st paragraph un "Applying the Charts". I think it should be stated up front rather than as a note.	This note is left in place because it refers specifically to the charts that follow. However, text was added as the 2nd paragraph in the beginning of the document to clarify that use of the guide is not required.
176	All Charts	We appreciate the need to present complicated, multi-objective decision making processes in a simplified format but are concerned that the flow charts are over-simplified. It is more likely that not all impacted functions will be able to be mitigated at one site. There needs to be more discussion about functions and how they are prioritized for mitigation. What if some folks think that fish habitat is more important than frog habitat? Which should prevail when making a choice? Also, there is a concern about potential bias in favor of offsite mitigation in circumstances where on-site mitigation is feasible, but more expensive.	Figure 1 added to clarify this point. Trade-offs are policy decisions that need to be made and this will modify the choice of sites as outlined in Figure 1. The guide recommends using existing watershed plans, when available, to prioritize objectives. The guide also suggests focusing on replacing the functions and services that will be lost at the impact site. Further prioritization is beyond the scope of this document.
177	All Charts	The 3 flow charts all default to the analysis of flow chart C. These 3 flowcharts could be combined to make them more coherent and less intimidating.	Combining them makes the diagrams more complex and more difficult to use.
178	All Charts	The charts are introduced with the statement that anyone with a "basic understanding of watershed processes" (page 4) should be able to use them. The flow charts are organized, succinct and easy to follow, however, actual implementation of the steps is a bit more challenging. For example, when applying the criteria for *Chart C: Evaluate Specific Mitigation Sites in a Watershed Context* (page 7) a collection of groundwater data for the months of February - July (page 11), and calculation of the potential surface water supply using a hydrology model such as the HSPF (page 11) is required. While it is necessary to perform this sort of analysis to demonstrate that there is adequate water available to sustain the mitigated wetland, it seems the level of expertise required for implementation is higher than just a "basic understanding of watershed processes" referred to in the document's introduction. The target audience and the document's objectives need to be more accurately identified. The document may provide a general guidance framework for decision makers and planners, but its implementation requires appropriately trained and certified scientists.	New section was added titled "Who Should Use This Guide".
179	Chart A	I just looked through this again. I think it looks great! The only real comment I have is, on p. 6, when the third decision step ("Does on-site mitigation have potential to address the restoration goals identified for priority area?") goes to "No", should they be redirected to AVOID also? I know this guidance is specific to the mitigation step in the sequencing process, but if the impact site is in a priority area for restoration, and on-site mitigation is not adequate, then shouldn't the regulators and applicants rethink whether mitigation should even be allowed, if the off-site location is outside of the priority area for restoration boundary? Or, is this issue to be addressed by decision step #1 in Chart C "Does the site have opportunity to restore altered processes in the selected watershed"? But Chart C does not state preference for "within a priority area for restoration" only for within the watershed.	This guide assumes that impacts were avoided and minimized to the maximum extent prior to using the flow charts. The "No" choice following this box does not take you outside of the priority areas - it just takes you off-site.
180	Chart A	Good to call out that functions may be split.	No change.

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#	Section	Comment	Response to Comment/ Action Taken
181	Charts A & B	There is a brief description of how loss of some wetland functions would necessitate within watershed mitigation (water quality) and the condition of some watersheds will not allow for successful on-site mitigation (predominantly urban, >10% impervious) (page 8). The decision charts then indicate that functions can be split between two mitigation sites (pages 6-7). This splitting of functions among different mitigation sites needs to be addressed in the text and supported scientifically.	Text on splitting functions is included in text box titled "Making Choices Using a Watershed Approach".
182	Charts A & B	You are putting a lot of emphasis on having two mitigation sites – from a compliance and agency workload perspective, this is not ideal. Would need to weigh the advantages of splitting the mitigation over using another site.	Text on splitting functions is included in text box titled "Making Choices Using a Watershed Approach".
183	Charts A & B	3. Delete text in Chart A and Chart B about "splitting functions between 2 mitigation sites. In a true technical sense, ecosystem "functions" cannot be split and repositioned in the landscape. The broader idea that I wish to raise is the need to review for consistency across (a) technical guidance about project site selection, (b) impact assessment, (c) the accounting of mitigation credits/debits and (d) performance standards for credit release. The current document should provide some sort of cross-walk or reference to those other mitigation topics. For example, if "splitting functions" is mentioned in the mitigation site review guidance, then I presume that a system exists for accounting wetland functions in a way that allows them to be split. Mention of it also presumes that mitigation performance standards are based on a measure of wetland function.	This concept is retained in the flow charts. Additional text on splitting functions is included in text box titled "Making Choices Using a Watershed Approach".
184	Charts A & B	If current mitigation strategies are failing, how successful will splitting mitigation strategies between sites be? Splitting acreage of restoration, monitoring of restoration, or replacement of failed initiatives all intuitively seems more likely to fail than doing so at one location (which itself has a high likelihood of failing).	An example is provided on the most typical scenario for splitting functions in the text box titled "Making Choices Using a Watershed Approach".
185	Chart B	Regarding Chart B: Criterion B1 is satisfied ("yes" answer) for all watersheds >50% urbanized with impervious surfaces >10% ("no" answer proceeds to Criterion B2). Criterion B2 is satisfied ("yes" answer) for all watersheds >50% rural / commercial agriculture. I think it would be useful to provide some guidance / justification for answering "no" to both B1 and B2 (watersheds >50% undeveloped?). Also, I recommend you close the "loophole" for watersheds >50 urbanized but with <10% impervious surfaces (currently would put users into the third box, which would be counter to its intent, which is "watershed processes not very altered".)	The chart has been revised to clarify what to do if you answer no to both questions. The questions have been revised as well.
186	Chart B	Regarding Chart B: For the "same watershed" and "another watershed" referenced in the boxes to the right and below Criterion B2, I think it would be appropriate to allow users to progress outward (e.g., to larger watershed areas) if feasible sites within these smaller sub-basins, etc. aren't found or simply aren't available. This would especially apply to drier east-side scenarios, where water availability and water rights tend to be more of an issue..	This issue of scale has been clarified by using the term hydrologic unit to mean the smallest unit that is defined by the local jurisdiction. One moves to the neighboring hydrologic unit if necessary.
187	Chart B	For diamond 1, do all processes have to have a high degree of permanent alteration to qualify? Just one process? More than two? This needs better definition.	These questions were changed to clarify this.
188	Chart B	For diamond 2, is commercial logging considered a permanent alteration? It is land zoned for this use and can be logged to alter hydrology, mass wasting, erosion etc, which typically continue until the trees grow back and are at least 25 years old.	This question was revised to avoid use of term "non-permanent".
189	Chart B	How does one decide/know if some functions "must be kept in same watershed?"	Revised charts to indicate that this depends on regulatory requirements.

#	Section	Comment	Response to Comment/ Action Taken
190	Chart B	It seems that the issue of adjoining land use needs to be factored in as well as potential future development pressure/threat, but I'm not sure where this goes.	Potential future development threat addressed by using urban growth areas - see revisions to charts.
191	Chart B	The first part of chart B, directs looking for off-site mitigation in watershed or sub unit with different contributing basin, if the watershed processes have a high degree of permanent alteration in the contributing area of impact site. This is confusing to me since there could be other areas within the watershed or sub-unit where mitigation opportunties could exist, especially if it is a large area and the impact area is a distance away from the impact site. If you add the following to the first part of B, it might make it more clear, "Do processes have high degree of permanent alteration throughout most of the contributing basin of the impact site?"	This question was revised to include the areal extent of the contributing basin that is in the urban growth area.
192	Chart B, last rectangle	I suggest use of "ecosystem processes" rather than "watershed processes" however, any terminology which includes estuarine process would work.	Clarified that estuarine wetlands not addressed. See "Scope of this Guide". See Definitions Section for "Watershed Processes".
193	Chart B, last rectangle	The last rectangular box is confusing because it does not give clear direction. You state that on-site mitigation is ok, but then state the off-site mitigation in another watershed may be more effective. You might consider deleting this last part about off-site mitigation or at least delete the words "in another watershed"	This chart was revised to give clearer direction.
194	Chart B, last rectangle	The last section of B states it is okay to proceed with evaluating on-site mitigation, but offsite mitigation in another watershed may be more effective in restoring watershed process. To help clarify consider changing this part: "OK to proceed with evaluating on-site mitigation, but off-site mitigation within another area of the watershed or contributing basis or a different watershed may be more effective in restoring watershed processes."	This chart was revised to give clearer direction.
195	Chart B, last rectangle	The last part of B on page 6 is also confusing. The definition of off-site mitigation can get confusing here. For example the impact site may not be suitable for compensatory mitigation, however adjacent or nearby areas could provide compensatory mitigation opportunities that could benefit the watershed. It may be that area of impact needs to be defined in more detail. If the goal of compensatory mitigation is to replace lost functions from an impact site, it would be difficult to so at the impacted site. Avoidance and minimization measures could be applied, but additional compensatory mitigation may be required.	These terms are defined in the document. Chart B (new Chart 2) was revised but terms are still used in a similar way.
196	Chart C	My concern with C is that if you're not able to engage in process-based restoration you're stuck in an endless loop. That's not reality based.	Chart C (now Chart 3) was revised and first two questions were deleted.
197	Chart C	Again, I'm concerned about impacts to estuarine wetland being mitigated through actions to restore upland wetlands. Estuarine functions aren't really dealt with through watershed analysis. (Added "similar" before "altered processes" in first two diamonds.)	Clarified that estuarine wetlands not addressed. See "Scope of this Guide".
198	Chart C	I want to pass along a comment from one of our cultural resource experts. She cautions that all proposed wetland mitigation sites undergo a screening or survey or inventory for cultural resource evidence at the site. Sometimes lack of such a survey can result in significant cost increases and schedule delays when cultural resources and/or historic properties are discovered during the preparation of the site. So it is best to avoid that possibility by conducting a CR survey upfront. This could be added as one of the criteria for site selection.	Survey for cultural resources is part of the Corps permit process and is usually done after it has been determined that a site meets the minimum needs for mitigation. It would be costly and impractical to take this step on sites prior to making this determination.

#	Section	Comment	Response to Comment/ Action Taken
199	Chart C	It would be useful to hyperlink the criteria to the places in the chart where they are mentioned.	Not done for this iteration, but under consideration for future version.
200	Chart C	For diamond 1, does the site have to restore all altered processes listed in Criteria 1?	Chart C has been revised to address the issues brought up by the reviewers. The criteria were simplified.
201	Chart C	Regarding Chart C: If the answers to B1 and B2 are "no", then the watershed processes are not very altered (or not altered). However, Criterion C1 automatically assumes that the watershed has been altered. Maybe you could consider an "na" option that allows progression to C3 in this case.	Chart C has been revised to address the issues brought up by the reviewers. The criteria were simplified.
202	Chart C	2. Rearrange and clarify the Decision Steps in Flow Chart C. I offer the following alternative wording and ordering of the Decision Steps in the Flow Chart. In so doing this, I slightly shift the emphasis away from "restoring altered processes" toward restoring a sustainable wetland ecosystem (feature) on the landscape. The nuance has to do with measuring project effectiveness. We can't easily measure a recovery of processes. We can, however, measure whether we have restored a wetland to good condition. A restored wetland of the right type, that is in good condition, and properly placed in a watershed, will help restore altered landscape processes.	Chart C has been revised to address the issues brought up by the reviewers. The criteria were simplified.
203	Chart C	Revise to: "Criteria C1: Is the project location in a landscape setting that would support the type of wetland in need of mitigation?" Note: The identification of the "desired class" would be explained in the documentation of the criteria, per use of a wetland landscape profile.	Chart C has been revised to address the issues brought up by the reviewers. The criteria were simplified.
204	Chart C	Revise to: "Criteria C2: Does the site have opportunity to sustain the wetland type given the condition of the surrounding watershed?" Note: Retain the same "stressor checklists" found in the current document for Criteria C1. Narration would need to be adapted a bit. Criteria B1 and B2 provide information about the broad watershed condition. Criteria C2 zeros-in a little closer to the proposed project area. Criterion C3-C6 address on-site conditions.	Chart C has been revised to address the issues brought up by the reviewers. The criteria were simplified.
205	Chart C	Criteria C3: Could the mitigation be designed to restore the site given the magnitude of disturbance? Note: Pretty much keep the "stressor checklist" found in the current document for Criteria C2. I suggest that a "buffer condition" factor be added to the list e.g., "maintain natural buffer."	Chart C has been revised to address the issues brought up by the reviewers. The criteria were simplified.
206	All Criteria	For more detailed criteria (B1, B2, C3, C4 and C5) where specific metrics are indicated, citations of the *primary* scientific literature should be included (page 10-11). The document should include a citation for Brinson, Mark, 1993 *A Hydrogeomorphic Classification for Wetlands* U.S. Army Corp of Engineers Wetlands Research Program Technical Report WRP-DE-4 - the primary source of the HGM classification.	Some additional primary sources have been added.
207	Criteria for Charts B and C	For the most part, these criteria are too wetland and should be broadened to other aquatic resources.	Clarified that document only address wetlands. See "Scope of this Guide".
208	Criteria B1	The discussion of restoration of Hydrologic processes in highly altered watersheds (page 8). I think this needs to be explained in more detail somewhere. Many readers will see conflict between the restoration of hydrologic functions of wetlands that is intended here and the Wetland Protection requirements in the DOE Stormwater Manual. The guidance should not give the impression that protecting and maintaining remaining hydrologic functions in altered watersheds is not important.	The issue of restoration has been clarified as it relates to choosing a site
209	Criteria B1	This is not necessarily the driving factor in estuarine systems. I would not want to base the choice for estuarine systems on this one indicator.	Clarified that estuarine wetlands not addressed. See "Scope of this Guide".

#	Section	Comment	Response to Comment/ Action Taken
210	Criteria B1	This threshold is very low for allowing mitigation outside the watershed. There are numerous examples of intact wetland systems in watersheds with greater than 10% impervious area (see Wetlands and Urbanization (Azous and Horner 2001)). That number comes from studies which have shown that degradation of aquatic systems occurs at about 10% impervious area but those studies have not shown that a watershed is not worth restoring if impervious area is that high. In addition, for wetlands in particular, outlet condition, and topographic conditions play a large role in the potential for water level fluctuation impacts. A constricted outlet and adjacent steep terrain may play a larger role in wetland functioning than impervious area. It may be more appropriate to use a threshold that is based on an evaluation of whether the lost functions and values can be restored in the sub-basin, basin, watershed or WRIA before you can move to another one rather than using impervious area.	This method provides only a "coarse" sieve for the information about disturbance. The method was simplified by introducing the concept of Urban Growth Area. The assumption is made that an wetlands or restoration that takes place in the UGA will not be sustainable in the long run.
211	Criteria B1	Page 8, states to answer yes, if the predominant (greater than 50%) land cover is urban, etc. It seems like the percentages should be higher for both land cover and impervious surfaces to kick out compensatory mitigation within the watershed, such as 75% for land cover and 35% or greater for impervious surfaces.	See above
212	Criteria B1	This standard is one reason that the scale of affected area needs to be better defined as you may have subbasins in a WRIA that meet these criteria but not the entire WRIA.	The issues of scale have been clarified in text boxes.
213	Criteria B1	It would be helpful to justify or explain the bases for these percentages. Are they an arbitrary threshold? “Higher” density residential is a relative value and may be problematic unless more clearly defined.	Percentages were dropped because of the confusion they were creating. We simplified the discussion by using the UGA
214	Criteria B1	Does impervious surface mean only pavement/concrete or would building foot prints also be included?	See above
215	Criteria Ba	Define "higher density".	We dropped the discussion of density
216	Criteria Ba	NOAA CCAP data can be used to give basin-wide estimates of impervious in GIS.	We changed the method and dropped using estimates of impervious surface.
217	Criteria B1	The Draft Guidance sends mixed messages regarding the need to fully integrate watershed resource objectives into mitigation decision-making. On the one hand, the Guidance appropriately states the importance of having specific restoration goals for wetlands and other aquatic resources in the watershed. Draft Guidance at 4. On the other hand, the Guidance allows segregation/separation of water quality functions and habitat functions without regard to habitat objectives (i.e., salmon recovery). Draft Guidance at 8.	We added Part 2 to clarify the differences between landscape and site scale issues.
218	Criteria B1	The root of this perceived need to divide water quality and habitat functions appears to be the view that there is little point in trying to mitigate for loss of habitat and hydrologic functions in watersheds that are more than 50% urbanized and have greater than 10% land area in impervious surfaces. As written, the guidance suggests that a determination has already been made that it is OK to “write off” these functions in one watershed and do off-site mitigation in another (Draft Guidance at 8). Such a determination is an important policy decision that needs to be made in consultation with affected governments. This is particularly true for watersheds that may support listed salmon. It would be useful to know what Puget Sound watersheds fit within the 50% urbanized, 10% impervious surface category.	Charts have been re-written to highlight that the decision to split functions is a regulatory one.

#	Section	Comment	Response to Comment/ Action Taken
219	Criteria B1, 4th para	Re 2nd sentence: WOW, this sentence would seem to rule out doing any mitigation/restoration in many areas of the PS basin! The sentences that follow also over simplify important concepts as there are many factors that reduce/effect mitigation success. Making such definitive statements and saying that "habitat and hydrologic functions can ONLY be achieved offsite" does not fully capture the complexity of making mitigation decisions and may run counter to messages from the tribes, Partnership, and other entities.	The text has been re-written to clarify the issue
220	Criteria B1, 4th para	Doesn't this limit site selection opportunities? Given the type of functions that WSDOT projects regularly impact, we frequently select a site based on poor water quality conditions. (Refers to 3rd sentence that starts "Problems that reduce mitigation success...")	The text has been re-written to clarify the issue
221	Criteria B1, 4th para	Re: "Look for off-site mitigation in a different watershed…" - I question how this would work if the different watershed is in a different jurisdiction.	The text has been re-written to clarify the issue. We use the term hydrologic unit.
222	Criteria B1, 4th para	If this is the definition, then even Bear Creek may not be an acceptable place to do mitigation which may affect the Lk Wash bank.	Chart has been changed to address this issue and simpler criteria chosen.
223	Criteria B1, 4th para	Re 4th sentence: Strong statement, that could be argued. Suggest re-wording.	Chart has been changed to address this issue and simpler criteria chosen.
224	Criteria B1, 5th para	Page 8 states, "If the wetland being impacted plays an important role in its watershed in maintaining water quality, then mitigation for those functions should stay within the watershed. It may be possible to replace the water quality functions with an engineered, non-wetland solution." I don't think that that is a responsible policy statement. You will have to explain how that would lead to no net loss goals.	This criterion has been deleted and replaced with a simpler one.
225	Criteria B1, 5th para	Re: "It may be possible to replace the water quality functions with an engineered, non-wetland solution" - I think it is important to start thinking innovatively about this. Good point.	No change needed.
226	Criteria B1, 5th para	So, what does this mean for locating mitigation? Also, can you get mitigation 'credit' for the engineered solution?	Question unclear. Unable to address it.
227	Criteria B1, WQ functions	This section is somewhat contradictory to what you have above. Wetlands in more developed areas will virtually always play a water quality improvement role. This section is asking the applicant to essentially construct 2 mitigation projects, one in-basin for water quality and one out-of-basin for habitat etc. Why not just restore other functions along with WQ functions?	This criterion has been deleted and replaced with a simpler one.
228	Criteria B1	I understand that wq treatment facilities can provide the same function as the wq treatment provided by wetlands. But WQ facilities often require maintenance that may or may not be performed. Also wq facilities are not protected by wetland regulations. So the assurance that these functions will be provided in the future are less for a wq facility than for a wetland.	This criterion has been deleted and replaced with a simpler one.
229	Criteria B1	It would be very helpful to WSDOT if more information and guidance could be made available on this particular topic. Does this guidance reflect a change in the ACOE's position on this concept? This seems to be counter to the experiences of at least some WSDOT wetland biologists. It is our experience that road projects providing water quality treatment have not been an acceptable form of mitigation for water quality functions.	This criterion has been deleted and replaced with a simpler one.

#	Section	Comment	Response to Comment/ Action Taken
230	Criteria B1, 6th para	Add "or habitat function" to 1st sentence, as another set of functions that should be replaced within the watershed.	This criterion has been deleted and replaced with a simpler one.
231	Criteria B1, 1st bullet	Add "temperature, turbidity, dissolved oxygen, pH" to 1st sentence and delete "BOD".	This criterion has been deleted and replaced with a simpler one.
232	Criteria B1, 1st bullet	Are these the only pollutants of concern? What about DO and temperature?	This criterion has been deleted and replaced with a simpler one.
233	Criteria B1, 1st bullet	It is noteworthy that the list of water quality standards under the first bullet does not include water quality standards for temperature, dissolved oxygen, pH, or turbidity, all of which have significant importance for fish. All water quality standards should be included. In addition, the Draft Guidance may be inconsistent with antidegradation provisions of water quality standards and the goal of no net loss in that it fails to require replacement of water quality functions in streams not currently found to be violating water quality standards.	This criterion has been deleted and replaced with a simpler one.
234	Criteria B1, 1st bullet	Would a listing for any one of these parameters, BOD, fecal, nutrients or toxics disqualify the watershed from on-site mitigation? What if the TMDL is for Temperature? Do we have any data on how many watersheds there are that don't have at least one listing? Also, clarify what you mean by "does not meet WQ standards". Is this just Cat 4 waters or does this include Cat 2? What about Cat 3 waters? Should we consider only the most recent listing?	This criterion has been deleted and replaced with a simpler one.
235	Criteria B1, last bullet	Why 10 miles, is there a citation that can be provided?	This criterion has been deleted and replaced with a simpler one.
236	Criteria B1, last bullet	Is there a basis for this 10 mile limit?	This criterion has been deleted and replaced with a simpler one.
237	Criteria B1, all bullets	All three criteria need to have some scientific literature or basis with citations.	This criterion has been deleted and replaced with a simpler one.
238	Criteria B2	Re 1st sentence: These terms (those in parentheses in first sentence) need to be more quantitative and to be more clearly defined. How "small "is small lot agriculture? Please describe what is meant by "built structures"	This criterion has been deleted and replaced with a simpler one.
239	Criteria B2	Re 1st sentence: What about future growth and zoning?	Chart B (now Chart 2) changed to focus on urban growth areas. Criteria section for this chart deleted.
240	Criteria B2	Re 1st sentence: Is there a density threshold? 1:5, 1:20…?	This section was deleted.
241	Criteria B2	Re 1st sentence: How many Eastern WA watersheds would this rule out?	Guide intended for use only in western Washington. Box in Chart B (now Chart 2) changed.

#	Section	Comment	Response to Comment/ Action Taken
242	Criteria B2, 2nd para	Explain how the alteration of rural land uses such as rural residential and commercial agriculture are less permanent. There is an implied link to built structures, but this seems unclear and potentially unsupported.	Wording in 2nd box of Chart B (now Chart 2) revised.
243	Criteria B2, 2nd para	Why is this considered moderate if rural and ag ditch streams/wetlands; compact soil and remove trees; all of which affect hydrology.	This criterion has been deleted and replaced with a simpler one.
244	Criteria B2	Again, in an estuarine system, this is not always the case.	Clarified that estuarine wetlands not addressed. See "Scope of this Guide".
245	Criteria C1	For criterion C1, there doesn't appear to be a real connection between a given impairment (e.g., increased regional flooding) and a mitigation action (e.g., removing subsurface obstructions). Likewise, for Criterion C5 there are rough rules of thumb and a recommendation to have hydrologist calculate a water budget using HSPF.	It was not the intent of this guide to provide a detailed procedure for identifying and quantifying alterations in hydrologic units. As say in the introduction, this tool is to be used by experienced wetland scientists who should be able to answer these questions to the level of accuracy we were expecting in this guide. We have also simplified the questions in the table to reflect some of the comments we received.
246	Criteria C1	The discussion around Criteria C1 seems somewhat abbreviated. Are the lists of "problems" and "alterations" intended to be examples? For example, there is no mention of invasive species. In addition, the discussion reflects a tension that occurs throughout the document; is the guidance intended to apply just to wetland mitigation or to other kinds of mitigation, as well? (See also Criteria B1 discussion of hydrologic and habitat functions). The discussion is a good start, but more work is needed.	See response to Comment 246. The issues of invasive species is clarified in Question 3F.
247	Criteria C1	Is this the full list of alterations we care about? What about channelization of streams, species loss, reduced base flows…	See response to Comment 245. This is not the complete list. We did leave space to add any other hydrologic problems in the HU.
248	Criteria C1	Why is the ability of the site to restore process necessarily related to the number of alterations? The potential for process restoration will depend on the specific site conditions (and location) and the restoration actions that are applied, among other things.	The ability of a site to restore processes is not the question here. This issue is addressed in Part 2.
249	Criteria C1	I don't see where you address invasive species. Being able to remove and control invasive species is often critical to succ	Invasive are now addressed in Question 3F.
250	Criteria C1, 1st table	Erosional processes in the marine shoreline environment are part of natural process we are trying to protect from alteration. Again, this guidance was not written to deal with estuarine environments.	Clarified that estuarine wetlands not addressed. See "Scope of this Guide".
251	Criteria C1, 1st table	This is a subjective term ("Increased"). Can you please define what is considered "increased" or "impaired" in this circum	See response to comment 245.
252	Criteria C1, 1st table	Define "regional" in Increased Regional Flooding	See response to comment 245.

#	Section	Comment	Response to Comment/ Action Taken
253	Criteria C1, 1st table	All water quality parameters or just those listed on page 8?	See response to comment 245.
254	Criteria C1, 1st table	Add "Disconnection from floodplain" to list of problems in 1st table.	See response to comment 247.
255	Criteria C1, 2nd table	How are these 5 criteria determined? By sheer existence?	See response to comment 245.
256	Criteria C1, 2nd table	Add "Levees" and "Channel straightening in wetlands" to list of alterations in 2nd table.	See response to comment 245.
257	Criteria C1, 2nd table	This list needs to be expanded to better reflect other aquatic resources.	See response to comment 245.
258	Criteria C2	Is the HGM referred to in the box the current or historic class?	Text modifed to clarify that it is proposed HGM class.
259	Criteria C2	Is the list of alterations to be addressed complete? This seems be a subset of the potential restoration/mitigation actions that could apply.	The guide has been revised to separate site issues from landscape scale issues. Chart 3 (previously C) has been revised and this question is now addressed in Part 2.
260	Criteria C2	This list needs to be expanded to better reflect other aquatic resources.	The guide has been revised to separate site issues from landscape scale issues. Chart 3 (previously C) has been revised and this question is now addressed in Part 2.
261	Criteria C2	Include railroad tracks and drainage dikes (where it mentions road cuts).	The guide has been revised to separate site issues from landscape scale issues. Chart 3 (previously C) has been revised and this question is now addressed in Part 2.
262	Criteria C2	Add "Remove or breach dikes" to list in table.	The guide has been revised to separate site issues from landscape scale issues. Chart 3 (previously C) has been revised and this question is now addressed in Part 2.
263	Criteria C2	What if the road ditch is conveying stormwater only? (Refers to "Direct water draining from road cuts to historical path"	Chart has been modified and the questions simplified to clarify this issue.
264	Criteria C2	How realistic is this? Probably unlikely. (Refers to "Subsurface obstructions... can be removed or permeable material can replace fill at critical intervals to restore subsurface flow.")	Chart has been modified and the questions simplified to clarify this issue.

#	Section	Comment	Response to Comment/ Action Taken
265	Criteria C2	Add "Levee removal" and "Hydraulic modification of channelized wetlands" to list of alterations that can be addressed by site.	The guide has been revised to separate site issues from landscape scale issues. Chart 3 (previously C) has been revised and this question is now addressed in Part 2.
266	Criteria C3	Should it be noted that creating slope wetlands into hillsides is not possible?	We disagree. We have seen mitigation projects where slope wetlands were created or enhanced by providing additional water. The largest such project was at the refinery in Bellingham.
267	Criteria C3	This criterion is too wetland specific.	Guide is about wetlands, not about other aquatic resources. No change needed.
268	Criteria C4	This criterion is too wetland specific.	Guide is about wetlands, not about other aquatic resources. No change needed.
269	Criteria C4	Since the primary source of water serves as one of the main factors that determines the HGM class, this Criteria seems to be redundant with Criteria C3 – recommend adding the "primary source of water" column to the table in Criteria C3 to provide additional description for each HGM type.	Chart has been modified and this issue is now in two separate questions, so the criteria are split.
270	Criteria C4, 2nd bullet	Can't not have precipitation contributing to the sites hydrology.	Chart has been modified and the questions simplified to clarify this issue.
271	Criteria C5	C5 (page 11). We support the concept and don't have any specific suggestions here, but there are some implementation issues that could be challenging for local jurisdictions (see 1 and 2 below)	Agree. No change needed.
272	Criteria C5	1. Because of State and local vesting laws, we generally don't have the luxury of being able to require applicants to study their mitigation sites for up to a year. In order to make this work, we would have to provide some incentive for applicants to do this analysis voluntarily (perhaps reduce mitigation ratios based on a reduction of risk) before they begin our process. Alternatively, we could condition our preliminary approvals upon completion of this type of analysis, but then we create burden of proof and feasibility determination issues that could result in in the need for Post Decision Reviews, SEPA amendments, or denial of final construction approval (which is often very difficult politically). Developers are usually over optimistic about meeting these type of criteria and will inevitably proceed with their designs without preparing a contingency. We commonly face this issue with our stormwater infiltration standards.	A general comment. No change needed to the guide.
273	Criteria C5	2. Use of Hydrologists and hydraulic models raises some issues as well. First, we would need to make sure we have qualified expertise on staff or retainer to review these studies in order to be able to effectively challenge a suspect or deficient study. Second, if the study is stamped by a licensed engineer or hydrogeologist, our own experts will be hard pressed to challenge the findings unless there is clear factual error (our staff are not often supported in challenging the qualifications or credentials of licensed professionals). We commonly face this issue in stormwater, traffic, and geotechnical engineering design.	A general comment. No change needed to the guide.

#	Section	Comment	Response to Comment/ Action Taken
274	Criteria C5	The second oversimplification: The discussion of Chart C and the hydrology analysis for a potential mitigation site seems oversimplified. If this is just a napkin back quick way to evaluate a site for consideration for more detailed analysis later -- that should be clearly stated. As it is, this hydrologic analysis is inadequate to tell if a site will succeed. For instance, depressional wetlands creation areas should need a water budget to evaluate whether hydrology will be sufficient. The estimation of water losses for a depressional wetland proposed in the Chart C discussion could be off considerable depending on site soils, location and season. HSPF modeling is useful but real stream gauge data is way better, but is not discussed.	The guide has been revised to separate site issues from landscape scale issues. Chart 3 (previously C) has been revised and this question is now addressed in Part 2.
275	Criteria C5	I have never really understood the bias against engineered delivery of water to restored wetlands in the Pacific Northwest. It is commonly done in the upper Midwest, in Manitoba, in Louisiana, in the acequias of the Southwest, and in every drastically modified landscape (like the U.K.). But I know that is policy, so I will not argue with it.	The guide has been revised to separate site issues from landscape scale issues. Chart 3 (previously C) has been revised and this question is now addressed in Part 2. Engineered water delivery required continual maintenance which is somewhat contradictory to concept of sustainable mitigation sites we are trying to foster.
276	Criteria C5	I understand and agree with the general philosophy of avoiding the use of engineered water delivery systems. However, where severe hydrologic alteration has occurred in a given watershed, and restoration of natural hydrology is no longer viable, engineered delivery can sometimes be the only realistic option for bringing functionally beneficial and viable restoration projects to fruition. Also, engineered delivery can sometimes be used to augment hydrology at a given site, without necessarily being integral to its success. Rather than eliminating all of these types of projects from consideration altogether, I would suggest a caveat that while not preferred, they can or may be considered on a case-by-case basis.	See response to Comment 275.
277	Criteria C5	There is some confusion regarding contributing groundwater. The text includes the statement “it is almost impossible to map the sources of groundwater to individual wetlands” (page 3), however Criteria 5 (page 11) includes identifying source and collection of groundwater data. Some distinction in the difference in precision needed to identify groundwater as the source of the wetland versus the delineation and mapping of groundwater sources would eliminate the apparent contradiction.	The text has been edited to describe in more detail the monitoring needed to determine groundwater as a source.
278	Criteria C5, 1st para	Introduces a new concept. What are the predicted levels and how are they determined? Preimpact levels? Historic levels	Chart 3 (formerly Chart C) has been changed and the discussion of water regimes has been expanded to describe the issues involved.
279	Criteria C5, No. 1	In first sentence, replace "distance" with "depth"?	Chart 3 (formerly Chart C) has been changed and the discussion of water regimes has been expanded to describe the issues involved.
280	Criteria C5, No. 1	Any year, all years?	Chart 3 (formerly Chart C) has been changed and the discussion of water regimes has been expanded to describe the issues involved.

Responses to the comments received on Draft Guidance on Choosing Mitigation Sites Using a Watershed Approach

(Draft sent out for peer review during the spring of 2009)

#	Section	Comment	Response to Comment/ Action Taken
281	Criteria C5, No. 1, 1st bullet	Suggest a time period be added here, such as during the growing season. Many areas in western Washington meet this criteria during the winter but will not support wetland plants during the growing season.	According the latest information from the Corps, the growing season in many parts of western Washington is now the entire year.
282	Criteria C5, No. 1, 1st bullet	This range (6-12 inches) is based on soil type. It would be helpful to include clarification of water depth as it relates to specific soil types.	It was not the intent of this guide to provide a detailed procedure for answering the questions. As we say in the introduction, this tool is to be used by experienced wetland scientists who should be able to answer these questions to the level of accuracy we were expecting in this guide. We have also simplified the questions in the table to reflect some of the comments we received.
283	Criteria C5, No. 1, both bullets	This is a different duration (approximately 15 consecutive days) than what has been required for mitigation performance standards. We recommend that this be revised to coincide with Corps requirements (i.e., % of the growing season).	See answer to Comment 282.
284	Criteria C5, No. 1	For both bullets, adequate site hydrology is defined as “approximately 15 consecutive days”. As a condition of Sec. 401 Water Quality Certifications, I believe we usually ask for positive wetland hydrology for 30 consecutive days during the growing season. Should revise language in Criterion C5.1 to say “for at least 15 days”, or something to that effect.	We have deleted reference to specific criteria in the delineation manual. We assume that the site hydrology will meet delineation criteria in force at the time the mitigation takes place.
285	Criteria C5, No. 2	I would think that the estimation of water losses would be a pretty gross (and maybe wrong) estimate if you did it the way you outlined. Loss to groundwater in some places would probably not be 1/3 of the total if the site is on glacial till, but might be close to 100% if the wetland intersects a gravel layer, as it does in some places. As for losses to ET, I would bet you could provide a map of PET for western or eastern Washington that would provide much better information than just using 18” or 36”.	We have simplified the discussion and deleted references to specific values. This information is needed when designing a mitigation site, but is too detailed when trying identify if a site is suitable in the initial survey of potential sites.
286	Criteria C5, Part 2, c	How will this be determined? Many local governments are only just starting to map storm drainage networks if they are required per their NPDES permit. (Refers to 1st sentence under letter c).	This question has been deleted because it is too complicated to address in an initial screening.
287	Criteria C5, Part 2, c	Re "The wetland will be sustainable…" - This may imply that water balance is the only factors that determines sustainability. What about hydroperiod, vegetation effects, quality of runoff to the wetland….?	We have added a definition of "sustainable" as it relates to wetlands in the introduction.
288	Criteria C5, last para	Can HSPF be done without a stream gauge?	We have deleted reference to HSPF modeling.
289	Criteria C5, last para	Should his should be a requirement, rather than a recommendation? Also, establishing water rights for surface water driven wetlands should be a requirement to guarantee long-term viability of the wetland.	We have added a statement that water rights may be needed.
290	Criteria C6	This criterion is too wetland specific.	Clarified that guide is intended to address only wetlands in western Washington. Changed title of guide and added section on scope of guide.

#	Section	Comment	Response to Comment/ Action Taken
291	Criteria C6	Would any amount of excavation disqualify a mitigation site? What if you need to excavate hydric soils to fix a culvert, fo	Criterion reworded to emphasize preference for maintaining existing hydric soils.
292	Criteria C6	I can't think of a mitigation that wouldn't do some excavation unless you are restoring a diked area.	Criterion reworded to emphasize preference for maintaining existing hydric soils.
293	Criteria C6	You say that hydric soils are essential for the establishment of wetland plants. I would say that this is not true. Water is essential; if subsequently the soils become hydric, it was still the water that created an environment hospitable for wetland plants.	Criterion reworded to emphasize preference for maintaining existing hydric soils.
294	Criteria C6	Criteria 6 states "Hydric soils are essential to establishment of plants adapted to wetland conditions." I don't remember learning this. I don't think it is necessarily wrong, but it reminded me of the complexities of soils. When I check our guidance in Wetland Mitigation in Washington State, our agency recommends stockpiling native soils, evaluating the functions that soils provide. They also recommend organic soil amendments, mycorrhizal fungi and aerated soils for establishing healthy plants. I think that we want proper soils evaluation. Usually if we are creating wetlands for mitigation there will be excavation involved. Tom Hruby has been working on recommendations for mitigation that evaluates basic performance. Under soils he mentioned: "Ensure the soil will have the necessary physical and chemical characteristics. Examples of performance standards for soils: (a) The top 6" of soil must have the characteristics of a topsoil and not a sub-soil. This may mean stockpiling the existing topsoil or bringing in the soil from elsewhere. The topsoil must have total nitrogen levels below __mg/kg and total phosphorus levels below ___mg/kg if plant diversity is a goal."	Criterion reworded to emphasize preference for maintaining existing hydric soils.
295	Criteria C6	We have often used salvaged hydric soils from projected impact sites to augment soils and the associated seed source at mitigation sites (especially with onsite mitigation). In the strictest sense, this is technically employing excavation of hydric soils. I recommend that you address these types of exceptions within the criterion, or maybe simply clarify that this only pertains to the mitigation site itself.	Criterion reworded to emphasize preference for maintaining existing hydric soils.
296	Criteria C6	Remnant hydric soils may be an indication that there was sufficient hydrology to support a wetland. If it is possible to re-establish the historic hydrologic conditions, then the wetland would likely be relatively stable. This is Ecology guidance stated in *Wetland Mitigation in WA State Part 1*.	Criterion reworded to emphasize preference for maintaining existing hydric soils.
297	Criteria C6, last sentence	Would this not be a site specific situation and dependent on the wetland functions proposed and the present hydrologic regime. If hydric soils are excavated as part of the mitigation design, they should be replaced at finish grade elevations.	Criterion reworded to emphasize preference for maintaining existing hydric soils.
298	Text Box	This incorrectly suggests that Washington State agencies have jurisdiction over activities in “Indian Country” (see the federal statutory definition of "Indian country" [18 USC 1151]). Inclusion of the tribal role in natural resources management and a better definition of their permitting authority in this guidance document should reduce the opportunities for confusion later. There are inaccurate statements related to permitting requirements. As an example, in the Box of text on Page 13 there is an incorrect statement about the EPA administering Section 401 on tribal lands. The EPA has delegated their authority to administer Section 401 of the Clean Water Act to the State of Washington and to eight tribal governments located in Washington. The authority delegated to tribal governments applies to all lands on an Indian reservation, not just tribally owned lands. Impacts to wetlands, streams, rivers, lakes, and other waters that occur on Indian reservations must also typically be authorized by one or more tribal governmental agencies (e.g., Natural Resources Depts., Planning Depts., Cultural Resources Depts./Historic Preservation Offices).	Text box revised - 1st bullet revised and 2nd bullet addded to clarify tribal jurisdiction.

#	Section	Comment	Response to Comment/ Action Taken
299	Text Box	Implications of the first sentence in box are unclear as written. Perhaps restate by saying "this guidance is intended to inform future mitigation decisions and may not be applicable to mitigation sites for which permits have already been issued" or something like that.	Reader mis-interpreted sentence. Added new sentence to paragraph to clarify these are existing permitting requirements.
300	Text Box, 1st bullet	Edit 1st bullet to read: "Impacts to wetlands, streams, lakes, and other waters of the state must be authorized by Ecology pursuant to the delegation by the EPA for Ecology to administer Section 401 of the Federal Clean Water Act and/or the Washington Water Pollution Control Act (RCW 90.48). Wetlands designated as non-jurisdictional by the Corps are regulated by Ecology under RCW 90.48. Section 401 is administered by the EPA on federal lands (e.g., military bases, national parks, national forests) and some Indian reservations and tribal lands located off-reservation. To date, the EPA has delegated its authority to administer Section 401 on their respective reservations and off-reservation lands to eight Indian tribal governments in Washington."	Change made.
301	Text Box, 2nd bullet	The Corps does not regulate all impacts to jurisdictional waters of the US pursuant to Section 404 of the CWA. For 404 only waters, it is just the discharge of dredged or fill materials.	Bullet was reworded to clarify this.
302	Text Box, add new 2nd bullet	Insert after 1st bullet: "Impacts to wetlands, streams, rivers, lakes, and other waters that occur on Indian reservations must typically be authorized by one or more tribal governmental agencies (e.g., Natural Resources Departments, Planning Departments, Cultural Resources Departments/Historic Preservation Offices)."	Change made.
303	Definitions	If definitions are moved to the beginning of the document, a reader that is not familiar with the terms, will have this upfront, before they continue reading the document.	Some definitions are provided up front in various text boxes.
304	Definitions	Definitions should include citations.	The authors wrote these definitions.
305	Definitions	We suggest adding more explicit definition of watershed. A watershed may be small and represent a single tributary within a larger system, or be quite large and cover thousands of miles. Because using a common language will help with coordination and management, watersheds have been defined and named using standardized protocols. The naming conventions used by federal and state agencies are defined at a regional scale, and then these large hydrologic units are broken down into smaller watershed units for management purposes. The federal system divides the United States into a four-tiered hierarchical system, which is defined by the United States Geological Survey's (USGS) hydrologic unit codes (HUC).	Revised text boxes: "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".
306	Definitions	We understand that the HUC system does not work well with your approach here, but we recommend giving a better definition of watershed to help clarify your approach.	Revised text boxes: "Defining Geographic Scales in Watersheds" and "Choosing a Hydrologic Unit".