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Wetlands & CAO Updates:
Guidance for Small Cities

Western Washington Version

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Washington State Department of Ecology
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Summary of July 2011 Revisions

Several important changes have occurred since this guidance was originally released in January 2010. These include:

- Change in requirements for wetland delineation
- Development of an additional "credit-debit" method for calculating mitigation ratios
- Expiration of the moratorium on adoption of new critical area regulations with respect to agriculture

The July 2011 revisions also include:

- Sample CAO language on monitoring that was inadvertently omitted from the original document
- Guidance on reducing mitigation ratios for rehabilitation and enhancement when used in combination with 1:1 replacement through creation or reestablishment, consistent with the recommendations in the joint mitigation guidance
- Criteria to be considered when approving alternative mitigation plans
- Correction of several formatting errors

If you have a paper copy of the January 2010 document, you should recycle it and use the July 2011 revision, which will be available on line only.

Summary of October 2012 Revisions

The second revision of this guidance document includes:

- Updated criteria for using credits from an in-lieu fee program for mitigation.
- Removing the "preservation only" column from the mitigation ratio table and revising the rehabilitation ratio for Category I bogs to case by case (from 6:1).
- Adding language for protection of the mitigation site.
- Reorganizing the sections on mitigation preference and location.
- Correction of several formatting errors.

If you have a printed copy of either the January 2010 or July 2011 document, you should recycle it and use the October 2012 revision, which will be available on line only.

Introduction

This document is intended to provide guidance and tools useful in developing a wetland protection program for small cities and towns that are in the process of updating their critical areas ordinances (CAOs) to meet the Growth Management Act (GMA) requirements. Wetlands are one of the five types of critical areas identified in the GMA.

We recognize that many local governments lack the planning staff and resources necessary to develop and implement wetland standards that are both locally appropriate and based on best available science (BAS). Nonetheless, they must comply with the GMA requirement to designate and protect wetlands.

The first part of this document describes the important topics that should be addressed in the wetlands section of your CAO. It includes recommendations for wetland protection based on BAS. Appendix A is a sample CAO chapter for wetlands that incorporates these recommendations into a format similar to that found in many local CAOs. (Please note that the sample CAO will need to be tailored to your jurisdiction's naming and numbering system. There are several generic "XX" references throughout the text.) Appendix B contains definitions that are commonly used in wetlands regulations.

This document does not include the more general provisions typically found in regulations related to all critical areas. These can be found in Appendix A of the *Critical Areas Assistance Handbook* published by the Washington State Department of Commerce (formerly the Department of Community, Trade, and Economic Development) in November 2003 (http://www.commerce.wa.gov/site/745/default.aspx). This document revises the wetland-specific provisions in the *Critical Areas Assistance Handbook.*

The recommendations in this document and the sample ordinance may not be appropriate for use by rural **county** governments. Factors to consider are the county's rate of growth, the nature and intensity of land uses in the county, the wetland resources at risk, and the ability of the county to implement its CAO. We suggest that you contact us to determine whether this guidance is applicable to your county. Please use the following link to find Ecology's wetland specialist for your area:
http://www.ecy.wa.gov/programs/sea/wetlands/contacts.htm.

Guidance on the Science of Wetland Protection

Ecology has produced several different tools that can help local governments develop a comprehensive wetlands protection program for their jurisdictions. The Washington Departments of Ecology (Ecology) and Fish and Wildlife (WDFW) have published a two-volume guidance document to help local governments protect and manage wetlands:

- ***Wetlands in Washington State, Volume 1: A Synthesis of the Science*** (Washington State Department of Ecology Publication #05-06-006, Olympia, WA, March 2005). This volume is the result of an extensive search of over 15,000 scientific articles and synthesizes over 1,000 peer-reviewed works relevant to the management of Washington's wetlands.

- ***Wetlands in Washington State, Volume 2: Managing and Protecting Wetlands*** (Washington State Department of Ecology Publication # 05-06-008, Olympia, WA, April 2005). This volume was developed with the assistance of local government planners and wetland consultants. It can be used to craft regulatory language that is based on the best available science (BAS). We recommend that you review Chapter 8 and its appendices as you begin to work on updating your existing regulations.

Ecology, in coordination with the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA), has also developed a two-part guidance document aimed at improving the quality and effectiveness of compensatory mitigation in Washington State:

- ***Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (Version 1).*** (Washington State Department of Ecology Publication #06-06-011a, Olympia, WA, March 2006). Part 1 provides a brief background on wetlands, an overview of the factors that go into the agencies' permitting decisions, and detailed guidance on the agencies' policies of wetland mitigation, particularly compensatory mitigation. It outlines the information the agencies use to determine whether specific mitigation plans are appropriate and adequate.

- ***Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Version 1)***. (Washington State Department of Ecology Publication #06-06-011b, Olympia, WA, March 2006). Part 2 provides technical information on preparing plans for compensatory mitigation.

Ecology has also developed a wetland ratings system for western Washington. The rating system is a useful tool for dividing wetlands into groups that have similar needs for protection.

- ***Washington State Wetland Rating System for Western Washington – Revised*** (Washington State Department of Ecology Publication # 04-06-25, Olympia, WA, August 2004, annotated August 2006).

Links to all of these documents can be found at:
http://www.ecy.wa.gov/programs/sea/wetlands/gma/index.html.

Relationship of GMA and SMA

You may be planning to adopt a Shoreline Master Program (SMP) that will rely on the CAO for protection of wetlands and other critical areas in shoreline jurisdiction. Ecology does not have an approval role in the CAO adoption process; our role is advisory. The SMP, however, is a joint document of Ecology and the local government requiring Ecology approval. Before the SMP can be approved by Ecology, the CAO must meet the "no net loss of ecological functions" requirement (WAC 173-26-186(8)(b)(i)).

You should be aware that the Shoreline Management Act (SMA) may preclude or alter the administration of your CAO. For example, certain activities exempted under the CAO will not qualify for exemption under the SMP. In addition, activities allowed under the CAO may require permits under the SMP.

For assistance with CAO/SMP integration, please use the following link to find the shoreline planner for your area:
http://www.ecy.wa.gov/programs/sea/sma/contacts/index.html.

Policy Discussion for Your Wetlands Chapter

Your wetlands chapter will exist as one of several in your critical areas ordinance. Below we describe some of the important subsections in the wetlands chapter and include our recommendations for protecting wetlands based on the best available science.

Purpose

The chapter typically begins with a purpose statement, followed by designation criteria, which include a definition of wetlands and the methods by which they are identified and rated and other details listed below. The purpose statement may also state that this chapter is intended to be consistent with the requirements of 36.70A RCW and to implement the goals and policies of your Comprehensive Plan for protecting wetlands.

Definitions

Your wetlands chapter may include a separate list of definitions, or the definitions may be included in the general definitions section of the CAO. Appendix B is a list of definitions relevant to your wetlands chapter. This list includes terms identified in state law and agency guidance documents. Clarity and consistency in the use of these terms will make ordinance implementation easier.

Identifying, Designating, and Rating Wetlands

The first steps in regulating wetlands are to define what is being regulated and specify how these areas will be identified. The GMA requires the use of the following definition of wetlands and specifies how to identify and delineate them.

In designating wetlands for regulatory purposes, **counties and cities are required to use the definition of wetlands in RCW 36.70A.030 (21):**

> *"Wetland" or "wetlands" means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands.*

Wetlands are subject to a local government's regulatory authority if they meet the criteria in this definition. This includes Prior Converted Croplands (PCCs) and isolated wetlands. These wetlands provide critical functions and habitat and should be regulated. **The GMA does not allow flexibility in adopting a modified definition of wetlands.**

Irrigation practices, such as the Irrigation District ditches in Sequim, can result in human-created, artificial wetlands. More frequently, however, irrigation practices may augment natural sources of water to a wetland. Wetlands that form along irrigation ditches that were intentionally created in uplands may be exempted from regulation. However, if a wetland is the unintentional by-product of irrigation activities, the wetland should be regulated. If a wetland disappears as the result of a change in irrigation practice, it will not be regulated in the future. However, most wetlands will not disappear completely as a result of local changes in irrigation practices because of natural sources of water or regional irrigation influences. Please see http://www.ecy.wa.gov/programs/sea/wetlands/irrigation.html for more information on how Ecology regulates irrigation-influenced wetlands.

Ecology is most concerned about those changes in land use that would eliminate wetlands as the result of fill or grading, such as a conversion to commercial or residential use. These activities should be regulated by the CAO, and appropriate protection standards (such as buffers and mitigation) should be required in order to prevent the loss of wetland area and function.

Many jurisdictions use the National Wetland Inventory (NWI) to determine whether wetlands exist within their boundaries. Since the NWI is based on photographs that are over 30 years old and provides only a general approximation of wetland location, it

cannot be used alone to designate wetlands. Wetlands are those areas that meet the above definition of "wetland." Wetlands are also dynamic systems that change over time. It is important to adopt the GMA definition and to have regulations in place to protect wetland functions and values, should wetlands that do not currently appear on the NWI or other maps be identified in the future.

State laws require that wetlands protected under the Growth Management Act and the Shoreline Management Act be delineated using a manual that is developed by Ecology and adopted into rules (RCW 36.70A.175; RCW 90.58.380). The Department of Ecology adopted a wetland delineation manual in 1997 (WAC 173-22-080) that was based on the original 1987 Corps of Engineers manual and subsequent Regulatory Guidance Letters.

During the last few years the Army Corps of Engineers has updated and expanded their delineation manual with regional supplements. To maintain consistency between the state and federal delineations of wetlands, Ecology has repealed WAC 173-22-080 (the state delineation manual) and replaced it with a revision of WAC 173-22-035 that states delineations should be done according to the currently approved federal manual and supplements. **The changes became effective March 14, 2011**.

The Growth Management Act states that "wetlands regulated under development regulations adopted pursuant to this chapter shall be delineated in accordance with the manual adopted by the department pursuant to RCW 90.58.380." RCW 90.58.380 allows the Department of Ecology to adopt rules that incorporate changes to the manual. **Therefore, the currently approved federal manual and supplements should be used for delineating wetlands in GMA jurisdiction**. See: http://www.ecy.wa.gov/programs/sea/wetlands/delineation.html.

Local governments are not required to rate or classify wetlands when regulating them. However, methods that classify, categorize, or rate wetlands help target the appropriate level of protection to particular types of wetlands and avoid the "one-size-fits-all" approach. If a local government uses a wetland rating system, it must consider the criteria described in WAC 365-190-090(3).

The *Washington State Wetland Rating System for Western Washington - Revised* (Ecology Publication #04-06-025, August 2004, annotated August 2006) is a useful tool for dividing wetlands into groups that have similar needs for protection. The revised rating system represents the best available science, as it is based on a better understanding of wetland functions, ways to evaluate them, and what is needed to protect them. It provides a quick "snapshot" characterization of a particular wetland. In many cases, it will provide enough information about existing wetland functions to allow adequate plan review and land use decisions to be made without the additional expense of a separate wetland functional assessment.

While local governments are not required to use Ecology's revised rating system, we strongly encourage you to adopt wetland regulations that require its use. Most qualified wetland specialists are using the revised rating system. In cases where state and

federal permits are required, the use of this rating system would benefit applicants by eliminating the need to rate wetlands according to a different local standard. If you choose not to use the state's wetland rating system, you must provide a rationale for this decision according to WAC 365-190-090(3).

We recommend that you include language that describes the four categories of wetlands. This text is different for eastern and western Washington jurisdictions. Please refer to Appendix A, Section XX.020.B.1-4 for the specific category descriptions.

Regulated Uses and Activities

Your wetland section should list those uses and activities that are regulated under the critical areas ordinance. Some of these items include: removal, excavation, grading, or dredging of material of any kind; draining, flooding, or disturbing of the wetland, water level or water table; the construction, reconstruction, demolition, or expansion of any structure; etc. More extensive examples are provided in the sample ordinance.

Wetlands are often impacted by unauthorized **clearing and grading** that takes place before application for development permits. You should make sure your CAO adequately regulates clearing and grading. If it doesn't, you should adopt a separate clearing and grading ordinance. The Department of Commerce (formerly Community, Trade and Economic Development) recently published technical guidance on developing a clearing and grading ordinance:
http://www.commerce.wa.gov/_CTED/documents/ID_2062_Publications.pdf.

Most forest practices (as defined in RCW 76.09) are exempted from the provisions of a wetlands chapter in the CAO. However, those forest practices that are Class IV general should be regulated. These activities constitute a conversion from forestry to some other use. As such, buffers and wetland protections are appropriate.

Exemptions

Your wetlands section should identify those activities in or near wetlands that are regulated and those that are exempt from regulation. Exemptions include activities that will have little or no environmental effect or are an emergency that threatens public health or safety. In the case of emergency response activities that affect wetlands and buffers, the responsible party should be required to obtain after-the-fact permits and to rectify impacts. Some jurisdictions place the exemptions or exceptions in a general exemptions section near the front of the CAO. However, some exemptions or exceptions may apply only to wetlands, so it may be more practical to have these specific exemptions in the wetlands section.

Exempt activities should be limited to those that will not have a significant impact on a wetland's structure and function (including its water, soil, or vegetation) and those which are expected to be very short term. Local governments should, however, also consider the cumulative impacts from exempted activities. They can result in a loss of wetland acreage and function that are not replaced through compensatory mitigation.

The scope, coverage, and applicability of a critical areas ordinance should capture the full range of activities that are detrimental to wetland functions. Therefore, exemptions should be supported by the scientific literature and be carefully crafted to minimize the potential for adverse impacts. However, a local government should not assume that an exemption is appropriate in the absence of science to refute the exemption. The language should clearly state whether a given exemption is from applicable standards in the code or whether it is exempt from needing a permit but still must comply with the code. Exemptions should be limited and construed narrowly.

For more information on this topic please refer to Chapter 8 of *Wetlands in Washington State, Volume 2: Managing and Protecting Wetlands* (Ecology Publication # 05-06-008, Olympia, WA, April 2005, https://fortress.wa.gov/ecy/publications/summarypages/0506008.html).

The GMA, in RCW 36.70A.030(21), requires local governments to regulate wetlands that meet the definition of biological wetlands (see the definition of "wetland" in the following section). This includes **Prior Converted Croplands (PCCs)** and **hydrologically isolated wetlands**, two types of wetlands that have been exempt from federal regulation at times. PCCs are wetlands that have been ditched and drained for active agricultural use before December 23, 1985. Isolated wetlands are those wetlands that have no surface hydrologic connection to waters of the United States. These wetlands must be regulated by your CAO.

EPA and the Corps sent draft 2011 Guidance to the White House Office of Management and Budget (OMB) that would reportedly "clarify Clean Water Act responsibilities." The 2011 Guidance apparently will not address CWA jurisdiction over waste treatment systems or prior converted croplands, contentious issues that the agencies intend to address in future agency guidance documents. Please see http://www.ecy.wa.gov/programs/sea/wetlands/isolated.html for more information on how the state of Washington currently regulates isolated wetlands.

The scientific literature does not support exempting wetlands that are below a certain size. While we recognize an administrative desire to place size thresholds on wetlands that are to be regulated, you need to be aware that it is not possible to conclude from size alone what functions a particular wetland may be providing. Ecology has developed a strategy for exempting small wetlands when additional criteria are considered. This language is present in the sample ordinance. **However, impacts to small wetlands are NOT exempt from the requirement to provide compensatory mitigation for those impacts.** If an In-Lieu Fee (ILF) program or a mitigation bank is available in your area (page 12), these mitigation alternatives can help prevent loss of wetland function from impacts to small wetlands in your jurisdiction.

Exceptions are typically addressed in a CAO in the context of reasonable use of property. For more information about this regulatory tool, see Section VII of the *Critical Areas Assistance Handbook* published by the Washington State Department of Commerce (http://www.commerce.wa.gov/site/745/default.aspx). You should keep in mind that the

Shoreline Management Act does not allow reasonable use exceptions, providing instead a variance pathway to afford regulatory relief. **If you decide to incorporate your CAO into your SMP when the latter document is updated, you will need to address this potential inconsistency.**

Forest Practices

Class I, II, and III forest practices should be exempted from the wetlands section of your CAO. These activities are regulated through RCW 76.09, the Forest Practices Act.

Agricultural Activities

The moratorium on the adoption of new critical areas regulations with respect to agriculture provided by a 2007 law (SSB 5284) expired on July 1, 2011. Governor Gregoire signed ESHB 1886 in May 2011, which went into effect on July 22, 2011. This legislation creates the Voluntary Stewardship Program at the Conservation Commission, an alternative program for counties to protect critical areas on agricultural lands. For more information on this program, see http://www.scc.wa.gov/voluntary-stewardship/.

For small cities, Ecology encourages the use of Best Management Practices (BMPs), farm conservation plans, and incentive-based programs to improve agricultural practices in and near wetlands. The goal of the BMPs should be to ensure that ongoing agricultural activities minimize their effects on water quality, riparian ecology, salmonid populations, and downstream resources.

"Existing and ongoing agricultural activities" should not include removing trees, diverting or impounding water, excavation, ditching, draining, culverting, filling, grading, and similar activities that introduce new adverse impacts to wetlands or other aquatic resources. Maintenance of agricultural ditches should be limited to removing sediment in existing ditches to a specified depth at date of last maintenance. Conversion of wetlands that are not currently in agricultural use to a new agricultural use should be subject to the same regulations that govern new development.

Strategies for Protecting Wetlands from Impacts

Wetlands Inventory

You may wish to pursue accurate identification and rating of all wetlands in your planning area based on the *Washington State Wetland Rating System for Western Washington - Revised* (Ecology Publication #04-06-025, August 2004, annotated August 2006) and the approved federal wetland delineation manual and applicable regional supplements. These documents can be downloaded at:

- http://www.ecy.wa.gov/programs/sea/wetlands/ratingsystems/index.html (rating systems)
- http://www.ecy.wa.gov/programs/sea/wetlands/delineation.html (delineation manual and supplements)

While this approach may initially be more labor intensive and expensive, such information will allow rapid review of development proposals and can help your jurisdiction prioritize areas for preservation or acquisition.

This approach is consistent with best available science (BAS). It can help with the development of a landscape-analysis approach to protecting wetlands in your city. Landscape analysis for critical areas facilitates and informs long-range planning. The City of Aberdeen used this approach in their CAO update. (See Section XX.050.B in the sample ordinance.)

ABCs

The most basic approach to protecting wetland functions and values can be summarized as the **A-B-C Approach, or Avoid, Buffer, Compensate.** This means that a CAO should contain language to ensure that:

1. Wetlands impacts are **avoided** to the extent practicable.

2. Wetlands are **buffered** to protect them from adjacent land-use impacts.

3. Unavoidable impacts are **compensated**, or replaced.

Your CAO should provide requirements on how to reduce the severity of impacts to wetlands. When an alteration to a wetland is proposed, impacts should be avoided, minimized, or compensated for in the following sequential order of preference:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;

2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;

3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;

5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and/or

6. Monitoring the impact and taking appropriate corrective measures.

Buffers

Establishing standards for wetland buffers is usually the most challenging part of developing a CAO. However, developing a predictable, reasonable approach for

establishing buffers that includes the best available science is not as difficult as it may seem.

The scientific literature is unequivocal that **buffers are necessary to protect wetland functions** and values. The literature consistently reports that the primary factors to evaluate in determining appropriate buffer widths are:

1. The wetland type and functions needing protection (buffers filter sediment, nutrients, or toxics; screen noise and light; provide forage, nesting, or resting habitat for wetland-dependent species; etc.).

2. The types of adjacent land use and their expected impacts.

3. The characteristics of the buffer area (slope, soils, vegetation).

The widths of buffers needed vary widely, depending on these three factors. For example, providing filtration of coarse sediment from residential development next to a low-quality wetland would require only a relatively flat buffer of dense grasses or forest/shrub vegetation in the range of 20 to 30 feet. However, providing forage and nesting habitat for common wetland-dependent species such as waterfowl, herons, or amphibians in a high-quality wetland adjacent to residential development would require a buffer vegetated with trees and shrubs in the range of 200 to 300 feet. This illustrates the necessity of using an approach to buffers that incorporates wetland type and functions (based on an appropriate rating system), types of land use, and the environmental characteristics of the existing buffer.

Your CAO should require buffers for activities that will impact wetland functions. Ecology's buffer recommendations are presented in Appendix 8-C of *Wetlands in Washington State, Volume 2.* We recommend using the table shown in the sample ordinance. It is derived from the more detailed tables in Volume 2. It is a single table, is easy to use, and is based on BAS. This alternative provides the important balance of predictability and flexibility. Determination of buffer size is simply a matter of applying the results of the wetland rating system score to the buffer matrix, based on the wetland category and wildlife habitat score. It generally requires smaller buffers for those wetlands that do not have much wildlife use. The simpler table does not consider land-use intensity in the buffer calculation, since it is presumed that most urban land uses will be high or moderate intensity. However, if your city has an activity that can be considered low intensity, such as a passive recreation area or nature park with undeveloped trails, you may wish to prescribe a smaller buffer **for that area only**. The buffer for an area should be no less than 75% of the otherwise required buffer. Such a "low-intensity" buffer is not appropriate for residential, commercial, or industrial uses.

Some wetland types listed in the buffer table may not be present in your city (e.g., coastal lagoons, bogs, interdunal wetlands, etc.). If you are certain that these wetlands do not occur within your jurisdiction and would not be introduced by future annexations, you may remove those wetland types from the buffer table.

You may wish to adopt an even simpler approach to wetland buffers, one based only on wetland category. In this case, buffers must be large enough to protect the most-sensitive wetlands from the most damaging land-use impacts. Please refer to Appendix 8-C of *Wetlands in Washington State, Volume 2* for these examples.

Ecology's buffer recommendations are based on a moderate-risk approach to protecting wetland functions. This means that there is a moderate risk that wetland functions will be impacted. Adopting smaller buffers represents a high-risk approach, and you need to be prepared to justify why such an approach is necessary and to offer alternative means of protecting wetland functions that help reduce the risk.

Ecology's buffer recommendations are also based on the assumption that the buffer is well vegetated with native species appropriate to the ecoregion. If the buffer does not consist of vegetation adequate to provide the necessary protection, then either the buffer area should be planted or the buffer width should be increased.

Buffer Averaging

Local governments often wish to allow buffer widths to be varied in certain circumstances. This may be reasonable if your standard buffers are adequate. The width of buffers may be averaged if this will improve the protection of wetland functions, or if it is the only way to allow for reasonable use of a parcel.

We recommend that a request for buffer averaging include a wetland report. The report should be prepared by a qualified professional describing the current functions of the wetland and its buffer and the measures that will be taken to ensure that there is no loss of wetland function due to the buffer averaging. The width of the buffer at any given point after averaging should be no smaller than 75% of the standard buffer.

If you choose to adopt small standard buffer widths, then further reductions to the buffer width should not be allowed under any circumstances.

Mitigation

Unavoidable **impacts to wetlands should be offset by compensatory mitigation.** Your CAO should include standards for the type, location, amount, and timing of the mitigation. It should also include clear guidance on the design considerations and reporting requirements for mitigation plans.

Ecology's recommendations for the amount of mitigation (ratios) are based on wetland category, function, and special characteristics. Requiring a greater area helps offset both the risk that compensatory mitigation will fail and the temporal loss of functions that may occur. We recommend using the ratio table shown in the sample ordinance. It is derived from the more detailed tables in Part 1 of the joint agency guidance on mitigation: *Wetland Mitigation in Washington State, Parts 1 and 2* (Ecology publications #06-06-011a & b, March 2006).

As an alternative to the mitigation ratios found in the joint guidance, Ecology has developed a tool for calculating when a proposed wetland mitigation project adequately replaces the functions and values lost when wetlands are impacted. The tool is designed to provide guidance for both regulators and applicants during two stages of the mitigation process:

1. Estimating the functions and values lost when a wetland is altered, and

2. Estimating the gain in functions and values that result from the mitigation.

The Department of Ecology, however, does not require the use of this method. This current guidance provides one method for determining the adequacy of compensatory wetland mitigation. It does not set any new regulatory requirements. The document and worksheets can be downloaded at: http://www.ecy.wa.gov/mitigation/creditdebit-comments.html.

In 2008 the Corps and the EPA issued a rule governing compensatory mitigation. The rule establishes performance standards and criteria to improve the quality and success of compensatory mitigation, mitigation banks, and in-lieu fee programs. For more information on the federal rule, see: http://www.epa.gov/owow/wetlands/pdf/wetlands_mitigation_final_rule_4_10_08.pdf.

By adopting mitigation standards based on the state and federal guidance and rules, you will be providing consistency for applicants who must also apply for state and federal permits.

Mitigation Alternatives

Various options are available for mitigation, in addition to the traditional on-site concurrent option. These options include placing the mitigation away from the project site (off-site mitigation), building mitigation in advance of project impacts, and using third-party mitigation providers such as wetland banks and in-lieu-fee programs. Deciding which option should be used depends on what works best for the applicant and for the environment. Some of these options may not be available in your area at this time. However, we recommend that your CAO allow these options. They can be effective and valuable tools in preventing a net loss of wetland functions.

Some project applicants may propose mitigation that is consistent with sound ecological principles but is located outside of your jurisdiction. You may wish to include language in your CAO that enables your government to establish interlocal agreements or similar instruments with other jurisdictions to allow for such mitigation opportunities.

In addition to the following options, you might want to consider allowing transfer of development rights (TDR) as a tool for protecting wetlands. The Department of Commerce is working with four Puget Sound counties in a pilot TDR program. For more information, contact the Commerce planner for your jurisdiction or see: http://www.commerce.wa.gov/site/1060/default.aspx.

Mitigation Banking

A mitigation bank is a site where wetlands, streams, or other aquatic resource areas have been restored, established, enhanced, or (in certain circumstances) preserved for the purpose of providing compensation for unavoidable impacts to aquatic resources. A mitigation bank may be created by a government agency, corporation, nonprofit organization, or other entity. The bank sells its credits to permittees who are required to compensate for wetland impacts. Mitigation banks allow a permittee to simply write a check for their mitigation obligation. It is the bank owner who is responsible for the mitigation success. Mitigation banks require a formal agreement with the Corps, Ecology, and the local jurisdiction to be used for federal or state permits.

Ecology adopted the final Wetland Mitigation Banks Rule (WAC 173-700) in 2009. The purpose of the rule is to provide a framework for the certification, operation and monitoring of wetland mitigation banks. To learn more about wetland banking and the rule, see Ecology's website at http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/index.html.

In-Lieu Fee (ILF)

In this approach to mitigation, a permittee pays a fee to a third party in lieu of conducting project-specific mitigation or buying credits from a mitigation bank. ILF mitigation is used mainly to compensate for impacts to wetlands when better approaches to compensation are not available or practicable, or when the use of an ILF is in the best interest of the environment.

An ILF represents the expected costs to a third party of replacing the wetland functions lost or degraded as a result of the permittee's project. Fees are typically held in trust until sufficient funds have been collected to finance a mitigation project. Only a nonprofit organization such as a local land trust, private conservation group, or government agency with demonstrated competence in natural resource management may operate an ILF program. All ILF programs must be approved by the Corps to be used for Section 404 permits. To learn more about ILF programs, see Ecology's website at http://www.ecy.wa.gov/mitigation/ilf.html.

Off-Site Mitigation

This refers to compensatory mitigation that is not located at or near the project that generates impacts to wetlands. Off-site mitigation is generally allowed only when on-site mitigation is not practicable or environmentally preferable.

Ecology, the Corps of Engineers, and EPA have developed guidance to help applicants select potential off-site mitigation sites. To download a copy of *Selecting Wetland Mitigation Sites Using a Watershed Approach (Western Washington)*, (Ecology Publication #09-06-032, December 2009), please see https://fortress.wa.gov/ecy/publications/summarypages/0906032.html.

Advance Mitigation

When compensatory mitigation is implemented before, and in anticipation of, future **known** impacts to wetlands, it is referred to as "advance mitigation." Advance mitigation has been used mostly for large mitigation projects that are constructed in distinct phases where the impacts to wetlands are known. Advance mitigation lets an applicant provide all of the compensation needed for the entire project affecting wetlands at one time, which may result in more favorable mitigation ratios.

Although similar to mitigation banking, advance mitigation is different in several ways. Most importantly, advance mitigation is used only to compensate for a specific project (or projects) with pre-identified impacts to wetlands. Wetland banks provide mitigation for unknown future impacts within a specific "service" or market area. Ecology, WDFW, and the Corps of Engineers are developing guidance for advance mitigation. This guidance will be available by mid-2013. To obtain a copy after it is released, please see http://www.ecy.wa.gov/mitigation/guidance.html.

Conclusion

We hope you find this information helpful. If you have questions about this document or need additional assistance with the wetlands section of your critical areas ordinance update, please contact Donna Bunten at (360) 407-7172 or donna.bunten@ecy.wa.gov.

You may also contact one of Ecology's regional wetland specialists. They are available to work with you during your update process. For example, they can offer presentations to elected officials and planning commissions. They can also provide technical assistance including help with wetland delineation, wetland rating, ordinary high water mark determination, and project review. Please use the following link to find the wetland specialist for your area:
http://www.ecy.wa.gov/programs/sea/wetlands/contacts.htm.

For assistance with other aspects of your critical areas ordinance update, please contact the Department of Commerce (formerly Community, Trade, and Economic Development) at (360) 725-3000.

Appendix A - Sample Wetlands Chapter

(Western Washington)

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Subchapter XX.XX
Wetlands

Sections:
XX.010 Purpose
XX.020 Identification and Rating
XX.030 Regulated Activities
XX.040 Exemptions and Allowed Uses in Wetlands
XX.050 Wetland Buffers
XX.060 Critical Area Reports
XX.070 Compensatory Mitigation
XX.080 Unauthorized Alterations and Enforcement

XX.010 Purpose

The purposes of this Chapter are to:

A. Recognize and protect the beneficial functions performed by many wetlands, which include, but are not limited to, providing food, breeding, nesting and/or rearing habitat for fish and wildlife; recharging and discharging ground water; contributing to stream flow during low flow periods; stabilizing stream banks and shorelines; storing storm and flood waters to reduce flooding and erosion; and improving water quality through biofiltration, adsorption, and retention and transformation of sediments, nutrients, and toxicants.

B. Regulate land use to avoid adverse effects on wetlands and maintain the functions and values of wetlands throughout (name of jurisdiction).

C. Establish review procedures for development proposals in and adjacent to wetlands.

XX.020 Identification and Rating

A. Identification and Delineation. Identification of wetlands and delineation of their boundaries pursuant to this Chapter shall be done in accordance with the approved federal wetland delineation manual and applicable regional supplements. All areas within the City meeting the wetland designation criteria in that procedure are hereby designated critical areas and are subject to the provisions of this Chapter. Wetland delineations are valid for five years; after such date the City shall determine whether a revision or additional assessment is necessary.

B. Rating. Wetlands shall be rated according to the Washington Department of Ecology wetland rating system, as set forth in the *Washington State Wetland Rating System for Western Washington* (Ecology Publication #04-06-025, or as revised and

approved by Ecology), which contains the definitions and methods for determining whether the criteria below are met.

1. Category I. Category I wetlands are: (1) relatively undisturbed estuarine wetlands larger than 1 acre; (2) wetlands that are identified by scientists of the Washington Natural Heritage Program/DNR as high-quality wetlands; (3) bogs; (4) mature and old-growth forested wetlands larger than 1 acre; (5) wetlands in undisturbed coastal lagoons; and (6) wetlands that perform many functions well (scoring 70 points or more). These wetlands: (1) represent unique or rare wetland types; (2) are more sensitive to disturbance than most wetlands; (3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or (4) provide a high level of functions.

2. Category II. Category II wetlands are: (1) estuarine wetlands smaller than 1 acre, or disturbed estuarine wetlands larger than 1 acre; (2) interdunal wetlands larger than 1 acre; (3) disturbed coastal lagoons or (4) wetlands with a moderately high level of functions (scoring between 51 and 69 points).

3. Category III. Category III wetlands are: (1) wetlands with a moderate level of functions (scoring between 30 and 50 points); and (2) interdunal wetlands between 0.1 and 1 acre. Wetlands scoring between 30 and 50 points generally have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

4. Category IV. Category IV wetlands have the lowest levels of functions (scoring fewer than 30 points) and are often heavily disturbed. These are wetlands that we should be able to replace, or in some cases to improve. However, experience has shown that replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions, and should be protected to some degree.

C. Illegal modifications. Wetland rating categories shall not change due to illegal modifications made by the applicant or with the applicant's knowledge.

XX.030 Regulated Activities

A. For any regulated activity, a critical areas report (see Chapter XX.060 of this Chapter) may be required to support the requested activity.

B. The following activities are regulated if they occur in a regulated wetland or its buffer:

1. The removal, excavation, grading, or dredging of soil, sand, gravel, minerals, organic matter, or material of any kind.

2. The dumping of, discharging of, or filling with any material.

3. The draining, flooding, or disturbing of the water level or water table.

4. Pile driving.

5. The placing of obstructions.

6. The construction, reconstruction, demolition, or expansion of any structure.

7. The destruction or alteration of wetland vegetation through clearing, harvesting, shading, intentional burning, or planting of vegetation that would alter the character of a regulated wetland.

8. "Class IV - General Forest Practices" under the authority of the "1992 Washington State Forest Practices Act Rules and Regulations," WAC 222-12-030, or as thereafter amended.

9. Activities that result in:

    a. A significant change of water temperature.

    b. A significant change of physical or chemical characteristics of the sources of water to the wetland.

    c. A significant change in the quantity, timing, or duration of the water entering the wetland.

    d. The introduction of pollutants.

C. Subdivisions. The subdivision and/or short subdivision of land in wetlands and associated buffers are subject to the following:

1. Land that is located wholly within a wetland or its buffer may not be subdivided.

2. Land that is located partially within a wetland or its buffer may be subdivided provided that an accessible and contiguous portion of each new lot is:

    a. Located outside of the wetland and its buffer; and

    b. Meets the minimum lot size requirements of Chapter XX.XX.

XX.040 Exemptions and Allowed Uses in Wetlands

A. The following wetlands are exempt from the buffer provisions contained in this Chapter and the normal mitigation sequencing process in Chapter XX.XX. They may be filled if impacts are fully mitigated based on provisions in Chapter XX.070. If

available, impacts should be mitigated through the purchase of credits from an in-lieu fee program or mitigation bank, consistent with the terms and conditions of the program or bank. In order to verify the following conditions, a critical area report for wetlands meeting the requirements in Chapter XX.060 must be submitted.

1. All isolated Category III and IV wetlands less than 1,000 square feet that:

    a. Are not associated with riparian areas or buffers

    b. Are not part of a wetland mosaic

    c. Do not contain habitat identified as essential for local populations of priority species identified by the Washington Department of Fish and Wildlife or species of local importance identified in Chapter XX.XX.

B. Activities Allowed in Wetlands. The activities listed below are allowed in wetlands. These activities do not require submission of a critical area report, except where such activities result in a loss of the functions and values of a wetland or wetland buffer. These activities include:

1. Those activities and uses conducted pursuant to the Washington State Forest Practices Act and its rules and regulations, WAC 222-12-030, where state law specifically exempts local authority, except those developments requiring local approval for Class 4 – General Forest Practice Permits (conversions) as defined in RCW 76.09 and WAC 222-12.

2. Conservation or preservation of soil, water, vegetation, fish, shellfish, and/or other wildlife that does not entail changing the structure or functions of the existing wetland.

3. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops and provided the harvesting does not require tilling of soil, planting of crops, chemical applications, or alteration of the wetland by changing existing topography, water conditions, or water sources.

4. Drilling for utilities/utility corridors under a wetland, with entrance/exit portals located completely outside of the wetland buffer, provided that the drilling does not interrupt the ground water connection to the wetland or percolation of surface water down through the soil column. Specific studies by a hydrologist are necessary to determine whether the ground water connection to the wetland or percolation of surface water down through the soil column will be disturbed.

5. Enhancement of a wetland through the removal of non-native invasive plant species. Removal of invasive plant species shall be restricted to

hand removal unless permits from the appropriate regulatory agencies have been obtained for approved biological or chemical treatments. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species. Re-vegetation with appropriate native species at natural densities is allowed in conjunction with removal of invasive plant species.

6. Educational and scientific research activities.

7. Normal and routine maintenance and repair of any existing public or private facilities within an existing right-of-way, provided that the maintenance or repair does not expand the footprint of the facility or right-of-way.

XX.050 Wetland Buffers

A. Buffer Requirements**.** The standard buffer widths in Table XX.1 have been established in accordance with the best available science. They are based on the category of wetland and the habitat score as determined by a qualified wetland professional using the Washington state wetland rating system for western Washington.

1. The use of the standard buffer widths **requires** the implementation of the measures in Table XX.2, where applicable, to minimize the impacts of the adjacent land uses.

2. If an applicant chooses not to apply the mitigation measures in Table XX.2, then a 33% increase in the width of all buffers is required. For example, a 75-foot buffer with the mitigation measures would be a 100-foot buffer without them.

3. The standard buffer widths assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community or the buffer should be widened to ensure that adequate functions of the buffer are provided.

4. Additional buffer widths are added to the standard buffer widths. For example, a Category I wetland scoring 32 points for habitat function would require a buffer of 225 feet (75 + 150).

Table XX.1 Wetland Buffer Requirements for Western Washington

Wetland Category	Standard Buffer Width	Additional buffer width if wetland scores 21-25 habitat points	Additional buffer width if wetland scores 26-29 habitat points	Additional buffer width if wetland scores 30-36 habitat points
Category I: Based on total score	75ft	Add 30 ft	Add 90 ft	Add 150 ft
Category I: Bogs	190 ft	NA	NA	Add 35 ft
Category I: Natural Heritage Wetlands	190 ft	N/A	NA	Add 35 ft
Category I: Coastal Lagoons	150 ft	N/A	Add 15 ft	Add 75 ft
Category I: Forested	75ft	Add 30 ft	Add 90 ft	Add 150 ft
Category I: Estuarine	150 ft	N/A	NA	N/A
Category II: Based on score	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category II: Interdunal Wetlands	110 ft	NA	Add 55 ft	Add 115 ft
Category III (all)	60 ft	Add 45 ft	Add 105 ft	NA
Category IV (all)	40 ft	NA	NA	NA

Table XX.2 Required measures to minimize impacts to wetlands

(Measures are required, where applicable to a specific proposal)

Disturbance	Required Measures to Minimize Impacts
Lights	• Direct lights away from wetland
Noise	• Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10' heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic runoff	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft of wetland • Apply integrated pest management
Stormwater runoff	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer • Use Low Intensity Development techniques (per PSAT publication on LID techniques)
Change in water regime	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	• Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion • Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	• Use best management practices to control dust
Disruption of corridors or connections	• Maintain connections to offsite areas that are undisturbed • Restore corridors or connections to offsite habitats by replanting

5. Increased Wetland Buffer Area Width. Buffer widths shall be increased on a case-by-case basis as determined by the Administrator when a larger buffer is necessary to protect wetland functions and values. This determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the wetland. The documentation must include but not be limited to the following criteria:

    a. The wetland is used by a plant or animal species listed by the federal government or the state as endangered, threatened, candidate, sensitive, monitored or documented priority species or habitats, or essential or outstanding habitat for those species or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or

    b. The adjacent land is susceptible to severe erosion, and erosion-control measures will not effectively prevent adverse wetland impacts; or

    c. The adjacent land has minimal vegetative cover or slopes greater than 30 percent.

6 Buffer averaging to *improve wetland protection* may be permitted when **all** of the following conditions are met:

    a. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a "dual-rated" wetland with a Category I area adjacent to a lower-rated area.

    b. The buffer is increased adjacent to the higher-functioning area of habitat or more-sensitive portion of the wetland and decreased adjacent to the lower-functioning or less-sensitive portion as demonstrated by a critical areas report from a qualified wetland professional.

    c. The total area of the buffer after averaging is equal to the area required without averaging.

    d. The buffer at its narrowest point is never less than either ¾ of the required width or 75 feet for Category I and II, 50 feet for Category III, and 25 feet for Category IV, whichever is greater.

7. Averaging to *allow reasonable use* of a parcel may be permitted when **all** of the following are met:

    a. There are no feasible alternatives to the site design that could be accomplished without buffer averaging.

b. The averaged buffer will not result in degradation of the wetland's functions and values as demonstrated by a critical areas report from a qualified wetland professional.

c. The total buffer area after averaging is equal to the area required without averaging.

d. The buffer at its narrowest point is never less than either ¾ of the required width or 75 feet for Category I and II, 50 feet for Category III and 25 feet for Category IV, whichever is greater.

B. To facilitate long-range planning using a landscape approach, the Administrator may identify and pre-assess wetlands using the rating system and establish appropriate wetland buffer widths for such wetlands. The Administrator will prepare maps of wetlands that have been pre-assessed in this manner.

C. Measurement of Wetland Buffers**.** All buffers shall be measured perpendicular from the wetland boundary as surveyed in the field. The buffer for a wetland created, restored, or enhanced as compensation for approved wetland alterations shall be the same as the buffer required for the category of the created, restored, or enhanced wetland. Only fully vegetated buffers will be considered. Lawns, walkways, driveways, and other mowed or paved areas will not be considered buffers or included in buffer area calculations.

D. Buffers on Mitigation Sites**.** All mitigation sites shall have buffers consistent with the buffer requirements of this Chapter. Buffers shall be based on the expected or target category of the proposed wetland mitigation site.

E. Buffer Maintenance**.** Except as otherwise specified or allowed in accordance with this Chapter, wetland buffers shall be retained in an undisturbed or enhanced condition. In the case of compensatory mitigation sites, removal of invasive non-native weeds is required for the duration of the mitigation bond (Section XX.070.H.2.a.viii).

F. Impacts to Buffers**.** Requirements for the compensation for impacts to buffers are outlined in Section XX.070 of this Chapter.

G. Overlapping Critical Area Buffers. If buffers for two contiguous critical areas overlap (such as buffers for a stream and a wetland), the wider buffer applies.

H. Allowed Buffer Uses. The following uses may be allowed within a wetland buffer in accordance with the review procedures of this Chapter, provided they are not prohibited by any other applicable law and they are conducted in a manner so as to minimize impacts to the buffer and adjacent wetland:

1. Conservation and Restoration Activities. Conservation or restoration activities aimed at protecting the soil, water, vegetation, or wildlife.

2. Passive recreation. Passive recreation facilities designed and in accordance with an approved critical area report, including:

    a. Walkways and trails, provided that those pathways are limited to minor crossings having no adverse impact on water quality. They should be generally parallel to the perimeter of the wetland, located only in the outer twenty-five percent (25%) of the wetland buffer area, and located to avoid removal of significant trees. They should be limited to pervious surfaces no more than five (5) feet in width for pedestrian use only. Raised boardwalks utilizing non-treated pilings may be acceptable.

    b. Wildlife-viewing structures.

3. Educational and scientific research activities.

4. Normal and routine maintenance and repair of any existing public or private facilities within an existing right-of-way, provided that the maintenance or repair does not increase the footprint or use of the facility or right-of-way.

5. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops and provided the harvesting does not require tilling of soil, planting of crops, chemical applications, or alteration of the wetland by changing existing topography, water conditions, or water sources.

6. Drilling for utilities/utility corridors under a buffer, with entrance/exit portals located completely outside of the wetland buffer boundary, provided that the drilling does not interrupt the ground water connection to the wetland or percolation of surface water down through the soil column. Specific studies by a hydrologist are necessary to determine whether the ground water connection to the wetland or percolation of surface water down through the soil column is disturbed.

7. Enhancement of a wetland buffer through the removal of non-native invasive plant species. Removal of invasive plant species shall be restricted to hand removal. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species. Revegetation with appropriate native species at natural densities is allowed in conjunction with removal of invasive plant species.

8. Stormwater management facilities**.** Stormwater management facilities are limited to stormwater dispersion outfalls and bioswales. They may be allowed within the outer twenty-five percent (25%) of the buffer of Category III or IV wetlands only, provided that:

    a. No other location is feasible; and

    b. The location of such facilities will not degrade the functions or values of the wetland; and

    c. Stormwater management facilities are not allowed in buffers of Category I or II wetlands.

9. Non-Conforming Uses**.** Repair and maintenance of non-conforming uses or structures, where legally established within the buffer, provided they do not increase the degree of nonconformity.

I. Signs and Fencing of Wetlands and Buffers:

1. Temporary markers. The outer perimeter of the wetland buffer and the clearing limits identified by an approved permit or authorization shall be marked in the field with temporary "clearing limits" fencing in such a way as to ensure that no unauthorized intrusion will occur. The marking is subject to inspection by the Administrator prior to the commencement of permitted activities. This temporary marking shall be maintained throughout construction and shall not be removed until permanent signs, if required, are in place.

2. Permanent signs. As a condition of any permit or authorization issued pursuant to this Chapter, the Administrator may require the applicant to install permanent signs along the boundary of a wetland or buffer.

    a. Permanent signs shall be made of an enamel-coated metal face and attached to a metal post or another non-treated material of equal durability. Signs must be posted at an interval of one (1) per lot or every fifty (50) feet, whichever is less, and must be maintained by the property owner in perpetuity. The signs shall be worded as follows or with alternative language approved by the Administrator:

Protected Wetland Area
Do Not Disturb
Contact [Local Jurisdiction]
Regarding Uses, Restrictions, and Opportunities for Stewardship

    b. The provisions of Subsection (a) may be modified as necessary to assure protection of sensitive features or wildlife.

3. Fencing

    a. The applicant shall be required to install a permanent fence around the wetland or buffer when domestic grazing animals are present or may be introduced on site.

    b. Fencing installed as part of a proposed activity or as required in this Subsection shall be designed so as to not interfere with species migration, including fish runs, and shall be constructed in a manner that minimizes impacts to the wetland and associated habitat.

XX.060 Critical Area Report for Wetlands

A. If the Administrator determines that the site of a proposed development includes, is likely to include, or is adjacent to a wetland, a wetland report, prepared by a qualified professional, shall be required. The expense of preparing the wetland report shall be borne by the applicant.

B. Minimum Standards for Wetland Reports. The written report and the accompanying plan sheets shall contain the following information, at a minimum:

1. The written report shall include at a minimum:

    a. The name and contact information of the applicant; the name, qualifications, and contact information for the primary author(s) of the wetland critical area report; a description of the proposal; identification of all the local, state, and/or federal wetland-related permit(s) required for the project; and a vicinity map for the project.

    b. A statement specifying the accuracy of the report and all assumptions made and relied upon.

    c. Documentation of any fieldwork performed on the site, including field data sheets for delineations, rating system forms, baseline hydrologic data, etc.

    d. A description of the methodologies used to conduct the wetland delineations, rating system forms, or impact analyses including references.

    e. Identification and characterization of all critical areas, wetlands, water bodies, shorelines, floodplains, and buffers on or adjacent to the proposed project area. For areas off site of the project site, estimate conditions within 300 feet of the project boundaries using the best available information.

f. For each wetland identified on site and within 300 feet of the project site provide: the wetland rating, including a description of and score for each function, per *Wetland Ratings* (Section XX.020.B) of this Chapter; required buffers; hydrogeomorphic classification; wetland acreage based on a professional survey from the field delineation (acreages for on-site portion and entire wetland area including off-site portions); Cowardin classification of vegetation communities; habitat elements; soil conditions based on site assessment and/or soil survey information; and to the extent possible, hydrologic information such as location and condition of inlet/outlets (if they can be legally accessed), estimated water depths within the wetland, and estimated hydroperiod patterns based on visual cues (e.g., algal mats, drift lines, flood debris, etc.). Provide acreage estimates, classifications, and ratings based on entire wetland complexes, not only the portion present on the proposed project site.

g. A description of the proposed actions, including an estimation of acreages of impacts to wetlands and buffers based on the field delineation and survey and an analysis of site development alternatives, including a no-development alternative.

h. An assessment of the probable cumulative impacts to the wetlands and buffers resulting from the proposed development.

i. A description of reasonable efforts made to apply mitigation sequencing pursuant to *Mitigation Sequencing* (Chapter XX.XX) to avoid, minimize, and mitigate impacts to critical areas.

j. A discussion of measures, including avoidance, minimization, and compensation, proposed to preserve existing wetlands and restore any wetlands that were degraded prior to the current proposed land-use activity.

k. A conservation strategy for habitat and native vegetation that addresses methods to protect and enhance on-site habitat and wetland functions.

l. An evaluation of the functions of the wetland and adjacent buffer. Include reference for the method used and data sheets.

2. A copy of the site plan sheet(s) for the project must be included with the written report and must include, at a minimum:

   a. Maps (to scale) depicting delineated and surveyed wetland and required buffers on site, including buffers for off-site critical areas that extend onto the project site; the development proposal; other critical

areas; grading and clearing limits; areas of proposed impacts to wetlands and/or buffers (include square footage estimates).

b. A depiction of the proposed stormwater management facilities and outlets (to scale) for the development, including estimated areas of intrusion into the buffers of any critical areas. The written report shall contain a discussion of the potential impacts to the wetland(s) associated with anticipated hydroperiod alterations from the project.

XX.XXX Compensatory Mitigation.

A. Mitigation Sequencing. Before impacting any wetland or its buffer, an applicant shall demonstrate that the following actions have been taken. Actions are listed in the order of preference:

1. Avoid the impact altogether by not taking a certain action or parts of an action.

2. Minimize impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.

3. Rectify the impact by repairing, rehabilitating, or restoring the affected environment.

4. Reduce or eliminate the impact over time by preservation and maintenance operations.

5. Compensate for the impact by replacing, enhancing, or providing substitute resources or environments.

6. Monitor the required compensation and take remedial or corrective measures when necessary.

B. Requirements for Compensatory Mitigation:

1. Compensatory mitigation for alterations to wetlands shall be used only for impacts that cannot be avoided or minimized and shall achieve equivalent or greater biologic functions. Compensatory mitigation plans shall be consistent with *Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans--Version 1,* (Ecology Publication #06-06-011b, Olympia, WA, March 2006 or as revised), and *Selecting Wetland Mitigation Sites Using a Watershed Approach (Western Washington)* (Publication #09-06-32, Olympia, WA, December 2009).

2. Mitigation ratios shall be consistent with Subsection G of this Chapter.

3. Mitigation requirements may also be determined using the credit/debit tool described in "*Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report* (Ecology Publication #10-06-011, Olympia, WA, March 2012, or as revised) consistent with subsection H of this Chapter.

C. Compensating for Lost or Affected Functions**.** Compensatory mitigation shall address the functions affected by the proposed project, with an intention to achieve functional equivalency or improvement of functions. The goal shall be for the compensatory mitigation to provide similar wetland functions as those lost, except when either:

1. The lost wetland provides minimal functions, and the proposed compensatory mitigation action(s) will provide equal or greater functions or will provide functions shown to be limiting within a watershed through a formal Washington state watershed assessment plan or protocol; or

2. Out-of-kind replacement of wetland type or functions will best meet watershed goals formally identified by the City, such as replacement of historically diminished wetland types.

D. Preference of Mitigation Actions**.** Mitigation for lost or diminished wetland and buffer functions shall rely on the types below in the following order of preference:

1. Restoration (re-establishment and rehabilitation) of wetlands:

   a. The goal of re-establishment is returning natural or historic functions to a former wetland. Re-establishment results in a gain in wetland acres (and functions). Activities could include removing fill material, plugging ditches, or breaking drain tiles.

   b. The goal of rehabilitation is repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain or return tidal influence to a wetland.

2. Creation (establishment) of wetlands on disturbed upland sites such as those with vegetative cover consisting primarily of non-native species. Establishment results in a gain in wetland acres. This should be attempted only when there is an adequate source of water and it can be shown that the surface and subsurface hydrologic regime is conducive to the wetland community that is anticipated in the design.

   a. If a site is not available for wetland restoration to compensate for expected wetland and/or buffer impacts, the approval authority may authorize creation of a wetland and buffer upon demonstration by the applicant's qualified wetland scientist that:

i. The hydrology and soil conditions at the proposed mitigation site are conducive for sustaining the proposed wetland and that creation of a wetland at the site will not likely cause hydrologic problems elsewhere;

ii. The proposed mitigation site does not contain invasive plants or noxious weeds or that such vegetation will be completely eradicated at the site;

iii. Adjacent land uses and site conditions do not jeopardize the viability of the proposed wetland and buffer (e.g., due to the presence of invasive plants or noxious weeds, stormwater runoff, noise, light, or other impacts); and

iv. The proposed wetland and buffer will eventually be self-sustaining with little or no long-term maintenance.

3. Enhancement of significantly degraded wetlands in combination with restoration or creation. Enhancement should be part of a mitigation package that includes replacing the altered area and meeting appropriate ratio requirements. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement alone will result in a loss of wetland acreage and is less effective at replacing the functions lost. Applicants proposing to enhance wetlands or associated buffers shall demonstrate:

   a. How the proposed enhancement will increase the wetland's/buffer's functions;

   b. How this increase in function will adequately compensate for the impacts; and

   c. How all other existing wetland functions at the mitigation site will be protected.

4. Preservation. Preservation of high-quality, at-risk wetlands as compensation is generally acceptable when done in combination with restoration, creation, or enhancement, provided that a minimum of 1:1 acreage replacement is provided by re-establishment or creation. Ratios for preservation in combination with other forms of mitigation generally range from 10:1 to 20:1, as determined on a case-by-case basis, depending on the quality of the wetlands being altered and the quality of the wetlands being preserved.

   Preservation of high-quality, at-risk wetlands and habitat may be considered as the sole means of compensation for wetland impacts when the following criteria are met:

   a. The area proposed for preservation is of high quality. The following features may be indicative of high-quality sites:

i. Category I or II wetland rating (using the wetland rating system for western Washington)

ii. Rare wetland type (for example, bogs, mature forested wetlands, estuarine wetlands)

iii. The presence of habitat for priority or locally important wildlife species.

iv. Priority sites in an adopted watershed plan.

b. Wetland impacts will not have a significant adverse impact on habitat for listed fish, or other ESA listed species.

c. There is no net loss of habitat functions within the watershed or basin.

d. Mitigation ratios for preservation as the sole means of mitigation shall generally start at 20:1. Specific ratios should depend upon the significance of the preservation project and the quality of the wetland resources lost.

e. Permanent preservation of the wetland and buffer will be provided through a conservation easement or tract held by a land trust.

f. The impact area is small (generally <½ acre) and/or impacts are occurring to a low-functioning system (Category III or IV wetland).

All preservation sites shall include buffer areas adequate to protect the habitat and its functions from encroachment and degradation.

E. Location of Compensatory Mitigation. Compensatory mitigation actions shall be conducted within the same sub-drainage basin and on the site of the alteration except when all of paragraphs 1-4 below apply. In that case, mitigation may be allowed off-site within the subwatershed of the impact site. When considering off-site mitigation, preference should be given to using alternative mitigation, such as a mitigation bank, an in-lieu fee program, or advanced mitigation.

1. There are no reasonable opportunities on site or within the sub-drainage basin (e.g., on-site options would require elimination of high-functioning upland habitat), or opportunities on site or within the sub-drainage basin do not have a high likelihood of success based on a determination of the capacity of the site to compensate for the impacts. Considerations should include: anticipated replacement ratios for wetland mitigation, buffer conditions and proposed widths, available water to maintain anticipated hydrogeomorphic classes of wetlands when restored, proposed flood storage capacity, and potential to mitigate riparian fish and wildlife impacts (such as connectivity);

2. On-site mitigation would require elimination of high-quality upland habitat.

3. Off-site mitigation has a greater likelihood of providing equal or improved wetland functions than the altered wetland.

4. Off-site locations shall be in the same sub-drainage basin unless:

    a. Established watershed goals for water quality, flood storage or conveyance, habitat, or other wetland functions have been established by the City and strongly justify location of mitigation at another site; or

    b. Credits from a state-certified wetland mitigation bank are used as compensation, and the use of credits is consistent with the terms of the certified bank instrument;

    c. Fees are paid to an approved in-lieu fee program to compensate for the impacts.

The design for the compensatory mitigation project needs to be appropriate for its location (i.e., position in the landscape). Therefore, compensatory mitigation should not result in the creation, restoration, or enhancement of an atypical wetland. An atypical wetland refers to a compensation wetland (e.g., created or enhanced) that does not match the type of existing wetland that would be found in the geomorphic setting of the site (i.e., the water source(s) and hydroperiod proposed for the mitigation site are not typical for the geomorphic setting). Likewise, it should not provide exaggerated morphology or require a berm or other engineered structures to hold back water. For example, excavating a permanently inundated pond in an existing seasonally saturated or inundated wetland is one example of an enhancement project that could result in an atypical wetland. Another example would be excavating depressions in an existing wetland on a slope, which would require the construction of berms to hold the water.

F. Timing of Compensatory Mitigation. It is preferred that compensatory mitigation projects be completed prior to activities that will disturb wetlands. At the least, compensatory mitigation shall be completed immediately following disturbance and prior to use or occupancy of the action or development. Construction of mitigation projects shall be timed to reduce impacts to existing fisheries, wildlife, and flora.

1. The Administrator may authorize a one-time temporary delay in completing construction or installation of the compensatory mitigation when the applicant provides a written explanation from a qualified wetland professional as to the rationale for the delay. An appropriate rationale would include identification of the environmental conditions that could produce a high probability of failure or significant construction difficulties (e.g., project delay lapses past a fisheries window, or installing plants should be delayed until the dormant season to ensure greater survival of installed materials). The delay shall not create or perpetuate hazardous conditions or environmental damage or degradation, and the

delay shall not be injurious to the health, safety, or general welfare of the public. The request for the temporary delay must include a written justification that documents the environmental constraints that preclude implementation of the compensatory mitigation plan. The justification must be verified and approved by the City.

G. Wetland Mitigation Ratios[1]:

Category and Type of Wetland	Creation or Re-establishment	Rehabilitation	Enhancement
Category I: Bog, Natural Heritage site	Not considered possible	Case by case	Case by case
Category I: Mature Forested	6:1	12:1	24:1
Category I: Based on functions	4:1	8:1	16:1
Category II	3:1	6:1	12:1
Category III	2:1	4:1	8:1
Category IV	1.5:1	3:1	6:1

H. Credit/Debit Method. To more fully protect functions and values, and as an alternative to the mitigation ratios found in the joint guidance *"Wetland Mitigation in Washington State Parts I and II"* (Ecology Publication #06-06-011a-b, Olympia, WA, March, 2006), the administrator may allow mitigation based on the "credit/debit" method developed by the Department of Ecology in "*Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report,"* (Ecology Publication #10-06-011, Olympia, WA, March 2012, or as revised).

[1] Ratios for rehabilitation and enhancement may be reduced when combined with 1:1 replacement through creation or re-establishment. See Table 1a, *Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance--Version 1,* (Ecology Publication #06-06-011a, Olympia, WA, March 2006 or as revised). See also Paragraph D.4 for more information on using preservation as compensation.

I. Compensatory Mitigation Plan**.** When a project involves wetland and/or buffer impacts, a compensatory mitigation plan prepared by a qualified professional shall be required, meeting the following minimum standards:

1. Wetland Critical Area Report. A critical area report for wetlands must accompany or be included in the compensatory mitigation plan and include the minimum parameters described in *Minimum Standards for Wetland Reports* (Section XX.060.B) of this Chapter.

2. Compensatory Mitigation Report. The report must include a written report and plan sheets that must contain, at a minimum, the following elements. Full guidance can be found in *Wetland Mitigation in Washington State–Part 2: Developing Mitigation Plans (Version 1)* (Ecology Publication #06-06-011b, Olympia, WA, March 2006 or as revised).

   a. The written report must contain, at a minimum:

      i. The name and contact information of the applicant; the name, qualifications, and contact information for the primary author(s) of the compensatory mitigation report; a description of the proposal; a summary of the impacts and proposed compensation concept; identification of all the local, state, and/or federal wetland-related permit(s) required for the project; and a vicinity map for the project.

      ii. Description of how the project design has been modified to avoid, minimize, or reduce adverse impacts to wetlands.

      iii. Description of the existing wetland and buffer areas proposed to be altered. Include acreage (or square footage), water regime, vegetation, soils, landscape position, surrounding lands uses, and functions. Also describe impacts in terms of acreage by Cowardin classification, hydrogeomorphic classification, and wetland rating, based on *Wetland Ratings* (Section XX.XX) of this Chapter.

      iv. Description of the compensatory mitigation site, including location and rationale for selection. Include an assessment of existing conditions: acreage (or square footage) of wetlands and uplands, water regime, sources of water, vegetation, soils, landscape position, surrounding land uses, and functions. . Estimate future conditions in this location if the compensation actions are NOT undertaken (i.e., how would this site progress through natural succession?).

      v. A description of the proposed actions for compensation of wetland and upland areas affected by the project. Include overall goals of the proposed mitigation, including a description of the

targeted functions, hydrogeomorphic classification, and categories of wetlands.

vi. A description of the proposed mitigation construction activities and timing of activities.

vii. A discussion of ongoing management practices that will protect wetlands after the project site has been developed, including proposed monitoring and maintenance programs (for remaining wetlands and compensatory mitigation wetlands).

viii. A bond estimate for the entire compensatory mitigation project, including the following elements: site preparation, plant materials, construction materials, installation oversight, maintenance twice per year for up to five (5) years, annual monitoring field work and reporting, and contingency actions for a maximum of the total required number of years for monitoring.

ix. Proof of establishment of Notice on Title for the wetlands and buffers on the project site, including the compensatory mitigation areas.

b. The scaled plan sheets for the compensatory mitigation must contain, at a minimum:

i. Surveyed edges of the existing wetland and buffers, proposed areas of wetland and/or buffer impacts, location of proposed wetland and/or buffer compensation actions.

ii. Existing topography, ground-proofed, at two-foot contour intervals in the zone of the proposed compensation actions if any grading activity is proposed to create the compensation area(s). Also existing cross-sections of on-site wetland areas that are proposed to be altered, and cross-section(s) (estimated one-foot intervals) for the proposed areas of wetland or buffer compensation.

iii. Surface and subsurface hydrologic conditions, including an analysis of existing and proposed hydrologic regimes for enhanced, created, or restored compensatory mitigation areas. Also, illustrations of how data for existing hydrologic conditions were used to determine the estimates of future hydrologic conditions.

iv. Conditions expected from the proposed actions on site, including future hydrogeomorphic types, vegetation community types by dominant species (wetland and upland), and future water regimes.

v. Required wetland buffers for existing wetlands and proposed compensation areas. Also, identify any zones where buffers are proposed to be reduced or enlarged outside of the standards identified in this Chapter.

vi. A plant schedule for the compensation area, including all species by proposed community type and water regime, size and type of plant material to be installed, spacing of plants, typical clustering patterns, total number of each species by community type, timing of installation.

vii. Performance standards (measurable standards reflective of years post-installation) for upland and wetland communities, monitoring schedule, and maintenance schedule and actions by each biennium.

J. Buffer Mitigation Ratios. Impacts to buffers shall be mitigated at a 1:1 ratio. Compensatory buffer mitigation shall replace those buffer functions lost from development.

K. Protection of the Mitigation Site. The area where the mitigation occurred and any associated buffer shall be located in a critical area tract or a conservation easement consistent with Chapter XX.XX.

L. Monitoring. Mitigation monitoring shall be required for a period necessary to establish that performance standards have been met, but not for a period less than five years. If a scrub-shrub or forested vegetation community is proposed, monitoring may be required for ten years or more. The project mitigation plan shall include monitoring elements that ensure certainty of success for the project's natural resource values and functions. If the mitigation goals are not obtained within the initial five-year period, the applicant remains responsible for restoration of the natural resource values and functions until the mitigation goals agreed to in the mitigation plan are achieved.

M. Wetland Mitigation Banks.

1. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands when:

   a. The bank is certified under state rules;

   b. The Administrator determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts; and

   c. The proposed use of credits is consistent with the terms and conditions of the certified bank instrument.

2. Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the certified bank instrument.

3. Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the certified bank instrument. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.

N. In-Lieu Fee. To aid in the implementation of off-site mitigation, the City may develop an in-lieu fee program. This program shall be developed and approved through a public process and be consistent with federal rules, state policy on in-lieu fee mitigation, and state water quality regulations. An approved in-lieu-fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor, a governmental or non-profit natural resource management entity. Credits from an approved in-lieu-fee program may be used when paragraphs 1-6 below apply:

1. The approval authority determines that it would provide environmentally appropriate compensation for the proposed impacts.

2. The mitigation will occur on a site identified using the site selection and prioritization process in the approved in-lieu-fee program instrument.

3. The proposed use of credits is consistent with the terms and conditions of the approved in-lieu-fee program instrument.

4. Land acquisition and initial physical and biological improvements of the mitigation site must be completed within three years of the credit sale.

5. Projects using in-lieu-fee credits shall have debits associated with the proposed impacts calculated by the applicant's qualified wetland scientist using the method consistent with the credit assessment method specified in the approved instrument for the in-lieu-fee program.

6. Credits from an approved in-lieu-fee program may be used to compensate for impacts located within the service area specified in the approved in-lieu-fee instrument.

O. Advance Mitigation. Mitigation for projects with pre-identified impacts to wetlands may be constructed in advance of the impacts if the mitigation is implemented according to federal rules, state policy on advance mitigation, and state water quality regulations.

P. Alternative Mitigation Plans. The Administrator may approve alternative critical areas mitigation plans that are based on best available science, such as priority restoration plans that achieve restoration goals identified in the SMP. Alternative

mitigation proposals must provide an equivalent or better level of protection of critical area functions and values than would be provided by the strict application of this chapter.

The Administrator shall consider the following for approval of an alternative mitigation proposal:

1. The proposal uses a watershed approach consistent with *Selecting Wetland Mitigation Sites Using a Watershed Approach (Western Washington)* (Ecology Publication #09-06-32, Olympia, WA, December 2009).

2. Creation or enhancement of a larger system of natural areas and open space is preferable to the preservation of many individual habitat areas.

3. Mitigation according to Section E is not feasible due to site constraints such as parcel size, stream type, wetland category, or geologic hazards.

4. There is clear potential for success of the proposed mitigation at the proposed mitigation site.

5. The plan shall contain clear and measurable standards for achieving compliance with the specific provisions of the plan. A monitoring plan shall, at a minimum, meet the provisions in Section I.

6. The plan shall be reviewed and approved as part of overall approval of the proposed use.

7. A wetland of a different type is justified based on regional needs or functions and values; the replacement ratios may not be reduced or eliminated unless the reduction results in a preferred environmental alternative.

8. Mitigation guarantees shall meet the minimum requirements as outlined in Section.I.a.viii.

9. Qualified professionals in each of the critical areas addressed shall prepare the plan.

10. The City may consult with agencies with expertise and jurisdiction over the resources during the review to assist with analysis and identification of appropriate performance measures that adequately safeguard critical areas.

XX.080 Unauthorized Alterations and Enforcement

A. When a wetland or its buffer has been altered in violation of this Chapter, all ongoing development work shall stop, and the critical area shall be restored. The City

shall have the authority to issue a "stop-work" order to cease all ongoing development work and order restoration, rehabilitation, or replacement measures at the owner's or other responsible party's expense to compensate for violation of provisions of this Chapter.

B. Requirement for Restoration Plan**.** All development work shall remain stopped until a restoration plan is prepared and approved by the City. Such a plan shall be prepared by a qualified professional using the currently accepted scientific principles and shall describe how the actions proposed meet the minimum requirements described in Subsection (C). The Administrator shall, at the violator's expense, seek expert advice in determining the adequacy of the plan. Inadequate plans shall be returned to the applicant or violator for revision and resubmittal.

C. Minimum Performance Standards for Restoration**.** The following minimum performance standards shall be met for the restoration of a wetland, provided that if the violator can demonstrate that greater functions and habitat values can be obtained, these standards may be modified:

1. The historic structure, functions, and values of the affected wetland shall be restored, including water quality and habitat functions.
2. The historic soil types and configuration shall be restored to the extent practicable.
3. The wetland and buffers shall be replanted with native vegetation that replicates the vegetation historically found on the site in species types, sizes, and densities. The historic functions and values should be replicated at the location of the alteration.
4. Information demonstrating compliance with other applicable provisions of this Chapter shall be submitted to the Administrator.

D. Site Investigations**.** The Administrator is authorized to make site inspections and take such actions as are necessary to enforce this Chapter. The Administrator shall present proper credentials and make a reasonable effort to contact any property owner before entering onto private property.

E. Penalties**.** Any person, party, firm, corporation, or other legal entity convicted of violating any of the provisions of this Chapter shall be guilty of a misdemeanor.

1. Each day or portion of a day during which a violation of this Chapter is committed or continued shall constitute a separate offense. Any development carried out contrary to the provisions of this Chapter shall constitute a public nuisance and may be enjoined as provided by the statutes of the state of Washington. The City may levy civil penalties against any person, party, firm, corporation, or other legal entity for violation of any of the provisions of this Chapter. The civil penalty shall be assessed at a maximum rate of $XX dollars per day per violation.

2. If the wetland affected cannot be restored, monies collected as penalties shall be deposited in a dedicated account for the preservation or restoration of landscape processes and functions in the watershed in which the affected wetland is located. The City may coordinate its preservation or restoration activities with other cities in the watershed to optimize the effectiveness of the restoration action.

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Appendix B - Wetland Definitions

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Appendix B – Wetland Definitions

Alteration – Any human-induced change in an existing condition of a critical area or its buffer. Alterations include, but are not limited to, grading, filling, channelizing, dredging, clearing of vegetation, construction, compaction, excavation, or any other activity that changes the character of the critical area.

Best Available Science – Current scientific information used in the process to designate, protect, or restore critical areas, that is, derived from a valid scientific process as defined by WAC 365-195-900 through 925. Examples of best available science are included in *Citations of Recommended Sources of Best Available Science for Designating and Protecting Critical Areas* published by the Washington State Department of Commerce.

Best Management Practices (BMPs) – Conservation practices or systems of practices and management measures that:

(a) Control soil loss and reduce water quality degradation caused by high concentrations of nutrients, animal waste, toxics, or sediment;

(b) Minimize adverse impacts to surface water and ground water flow and circulation patterns and to the chemical, physical, and biological characteristics of wetlands;

(c) Protect trees, vegetation and soils designated to be retained during and following site construction and use native plant species appropriate to the site for re-vegetation of disturbed areas; and

(d) Provide standards for proper use of chemical herbicides within critical areas.

Bog – A low-nutrient, acidic wetland with organic soils and characteristic bog plants, which is sensitive to disturbance and impossible to re-create through compensatory mitigation.

Buffer or Buffer Zone – The area contiguous with a critical area that maintains the functions and/or structural stability of the critical area.

Critical Areas – Critical areas include any of the following areas or ecosystems: critical aquifer recharge areas, fish and wildlife habitat conservation areas, geologically hazardous areas, frequently flooded areas, and wetlands, as defined in RCW 36.70A and this Chapter.

Creation – The manipulation of the physical, chemical, or biological characteristics to develop a wetland on an upland or deepwater site, where a wetland did not previously exist. Creation results in a gain in wetland acreage and function. A typical action is the excavation of upland soils to elevations that will produce a wetland *hydroperiod* and hydric soils, and support the growth of hydrophytic plant species.

Cumulative Impacts or Effects – The combined, incremental effects of human activity on ecological or critical area functions and values. Cumulative impacts result when the effects of an action are added to or interact with the effects of other actions in a particular place and within a particular time. It is the combination of these effects, and any resulting environmental degradation, that should be the focus of cumulative impact analysis and changes to policies and permitting decisions.

Developable Area – A site or portion of a site that may be used as the location of development, in accordance with the rules of this Chapter.

Development – A land use consisting of the construction or exterior alteration of structures; grading, dredging, drilling, or dumping; filling; removal of sand, gravel, or minerals; bulk heading; driving of pilings; or any project of a temporary or permanent nature which modifies structures, land, or shorelines and which does not fall within the allowable exemptions contained in the City Code.

Enhancement – The manipulation of the physical, chemical, or biological characteristics of a wetland to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in a change in wetland function(s) and can lead to a decline in other wetland functions, but does not result in a gain in wetland acres. Examples are planting vegetation, controlling non-native or invasive species, and modifying site elevations to alter hydroperiods.

Functions and Values – The services provided by critical areas to society, including, but not limited to, improving and maintaining water quality, providing fish and wildlife habitat, supporting terrestrial and aquatic food chains, reducing flooding and erosive flows, wave attenuation, historical or archaeological importance, educational opportunities, and recreation.

Growth Management Act – RCW 36.70A and 36.70B, as amended.

Hazardous Substances – Any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical, or biological properties described in WAC 173-303-090 or 173-303-100.

Historic Condition – Condition of the land, including flora, fauna, soil, topography, and hydrology that existed before the area and vicinity were developed or altered by Euro-American settlement, or in some cases before any human habitation occurred.

Impervious Surface – Any alterations to the surface of a soil that prevents or retards the entry of water into it compared to its undisturbed condition, or any reductions in infiltration that cause water to run off the surface in greater quantities or at an increased rate of flow compared to that present prior to development. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking

lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled macadam or other surfaces which similarly impede the natural infiltration of stormwater.

In-Kind Compensation – To replace critical areas with substitute areas whose characteristics and functions closely approximate those destroyed or degraded by a regulated activity.

In-Lieu-Fee Program – An agreement between a regulatory agency (state, federal, or local) and a single sponsor, generally a public agency or non-profit organization. Under an in-lieu-fee agreement, the mitigation sponsor collects funds from an individual or a number of individuals who are required to conduct compensatory mitigation required under a wetland regulatory program. The sponsor may use the funds pooled from multiple permittees to create one or a number of sites under the authority of the agreement to satisfy the permittees' required mitigation.

Infiltration – The downward entry of water into the immediate surface of soil.

Isolated Wetlands – Those wetlands that are outside of and not contiguous to any 100-year floodplain of a lake, river, or stream and have no contiguous hydric soil or hydrophytic vegetation between the wetland and any surface water, including other wetlands.

Mature Forested Wetland – A wetland where at least one acre of the wetland surface is covered by woody vegetation greater than 20 feet in height with a crown cover of at least 30 percent and where at least 8 trees/acre are 80 to 200 years old OR have average diameters (dbh) exceeding 21 inches (53 centimeters) measured from the uphill side of the tree trunk at 4.5 feet up from the ground.

Mitigation – Avoiding, minimizing, or compensating for adverse critical areas impacts. Mitigation, in the following sequential order of preference, is:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action;

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;

(c) Rectifying the impact to wetlands, critical aquifer recharge areas, and habitat conservation areas by repairing, rehabilitating, or restoring the affected environment to the conditions existing at the time of the initiation of the project;

(d) Minimizing or eliminating a hazard by restoring or stabilizing the hazard area through engineered or other methods;

(e) Reducing or eliminating the impact or hazard over time by preservation and maintenance operations during the life of the action;

(f) Compensating for the impact to wetlands, critical aquifer recharge areas, and habitat conservation areas by replacing, enhancing, or providing substitute resources or environments; and

(g) Monitoring the hazard or other required mitigation and taking remedial action when necessary.

Mitigation for individual actions may include a combination of the above measures.

Monitoring – Evaluating the impacts of development proposals on the biological, hydrological, and geological elements of such systems, and assessing the performance of required mitigation measures through the collection and analysis of data by various methods for the purpose of understanding and documenting changes in natural ecosystems and features. Monitoring includes gathering baseline data.

Native Vegetation – Plant species that occur naturally in a particular region or environment and were not introduced by human activities.

Off-Site Compensation – To replace critical areas away from the site on which a critical area has been impacted.

On-Site Compensation – To replace critical areas at or adjacent to the site on which a critical areas has been impacted.

Ordinary High Water Mark – That mark which is found by examining the bed and banks of water bodies and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, that the soil has a character distinct from that of the abutting upland in respect to vegetation.

Practical Alternative – An alternative that is available and capable of being carried out after taking into consideration cost, existing technology, and logistics in light of overall project purposes, with less of an impact to critical areas.

Preservation – The removal of a threat to, or preventing the decline of, wetland conditions by an action in or near a wetland. This term includes the purchase of land or easements, repairing water control structures or fences, or structural protection. Preservation does not result in a gain of wetland acres but may result in a gain in functions over the long term.

Project Area – All areas, including those within fifty (50) feet of the area, proposed to be disturbed, altered, or used by the proposed activity or the construction of any proposed structures. When the action binds the land, such as a subdivision, short subdivision, binding site plan, planned unit development, or rezone, the project area shall include the entire parcel, at a minimum.

Prior Converted Croplands – Prior converted croplands (PCCs) are defined in federal law as wetlands that were drained, dredged, filled, leveled, or otherwise manipulated, including the removal of woody vegetation, before December 23, 1985, to enable production of an agricultural commodity, and that: 1) have had an agricultural commodity planted or produced at least once prior to December 23, 1985; 2) do not have standing water for more than 14 consecutive days during the growing season, and 3) have not since been abandoned.

Qualified Professional – A person with experience and training in the pertinent scientific discipline, and who is a qualified scientific expert with expertise appropriate for the relevant critical area subject in accordance with WAC 365-195-905. A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, engineering, environmental studies, fisheries, geomorphology, or related field, and have at least five years of related work experience.

(a) A qualified professional for wetlands must be a professional wetland scientist with at least two years of full-time work experience as a wetlands professional, including delineating wetlands using the federal manuals and supplements, preparing wetlands reports, conducting function assessments, and developing and implementing mitigation plans.

(b) A qualified professional for habitat must have a degree in biology or a related degree and professional experience related to the subject species.

(c) A qualified professional for a geological hazard must be a professional engineer or geologist, licensed in the state of Washington.

(d) A qualified professional for critical aquifer recharge areas means a hydrogeologist, geologist, engineer, or other scientist with experience in preparing hydrogeologic assessments.

Re-establishment – The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland acres and functions. Activities could include removing fill, plugging ditches, or breaking drain tiles.

Rehabilitation – The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions and processes of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain or returning tidal influence to a wetland.

Repair or Maintenance – An activity that restores the character, scope, size, and design of a serviceable area, structure, or land use to its previously authorized and undamaged condition. Activities that change the character, size, or scope of a project beyond the

original design and drain, dredge, fill, flood, or otherwise alter critical areas are not included in this definition.

Restoration – Measures taken to restore an altered or damaged natural feature, including:

(a) Active steps taken to restore damaged wetlands, streams, protected habitat, or their buffers to the functioning condition that existed prior to an unauthorized alteration; and

(b) Actions performed to re-establish structural and functional characteristics of the critical area that have been lost by alteration, past management activities, or catastrophic events.

SEPA – Washington State Environmental Policy Act, Subchapter 43.21C RCW.

Soil Survey – The most recent soil survey for the local area or county by the National Resources Conservation Service, U.S. Department of Agriculture.

Species – Any group of animals or plants classified as a species or subspecies as commonly accepted by the scientific community.

Species, Endangered – Any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state (WAC 232-12-297, Section 2.4).

Species of Local Importance – Those species of local concern designated by the City in Chapter XX.XX due to their population status or their sensitivity to habitat manipulation.

Species, Priority – Any fish or wildlife species requiring protective measures and/or management guidelines to ensure its persistence at genetically viable population levels as classified by the Washington Department of Fish and Wildlife, including endangered, threatened, sensitive, candidate, and monitor species, and those of recreational, commercial, or tribal importance.

Species, Threatened – Any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats (WAC 232-12-297, Section 2.5).

Species, Sensitive – Any wildlife species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened throughout a significant portion of its range within the state without cooperative management or removal of threats (WAC 232-12-297, Section 2.6).

Stream – An area where open surface water produces a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices, or other entirely artificial watercourses, unless they are used by salmonids or are used to convey a watercourse naturally occurring prior to construction. A channel or bed need not contain

water year-round, provided there is evidence of at least intermittent flow during years of normal rainfall.

Unavoidable Impacts – Adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved.

Washington Administration Code (WAC) – Administrative guidelines implementing the Growth Management Act, WAC 365-190 and WAC 365-195, as amended.

Wetlands – Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.

Wetland Mitigation Bank – A site where wetlands are restored, created, enhanced, or in exceptional circumstances, preserved expressly for the purpose of providing advance mitigation to compensate for future, permitted impacts to similar resources.

Wetland Mosaic – An area with a concentration of multiple small wetlands, in which each patch of wetland is less than one acre; on average, patches are less than 100 feet from each other; and areas delineated as vegetated wetland are more than 50% of the total area of the entire mosaic, including uplands and open water.