



Department of Commerce

Critical Areas Handbook

A Handbook for Reviewing Critical Areas Regulations

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Brian Bonlender, Director

Acknowledgements

Washington State Department of Commerce

Mark McCaskill, Managing Director, Growth Management Services
Heather Ballash, Senior Planner, Project Manager/Writer
Barbara Dunn, Communications Director, Editor

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Heather Ballash
Washington State Department of Commerce
Growth Management Services
1011 Plum St. SE
P.O. Box 42525
Olympia, WA 98504-2525
www.commerce.wa.gov

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Chapter 1

Introduction: Reviewing and Updating Critical Areas Programs

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Recognizing the Value of Critical Areas Protection

Critical areas perform key functions that enhance our environment and protect us from hazards. The beneficial functions and values that critical areas provide include, but are not limited to, water quality protection and enhancement; fish and wildlife habitat; food chain support; flood storage, conveyance, and attenuation (the slow release) of flood waters; groundwater recharge and discharge; drinking water quality and quantity; erosion control; wave attenuation; protection from natural hazards; historical, archaeological, and aesthetic value protection; and recreation. Identifying the functions and values of local critical areas is essential to define the purpose of a critical areas protection program.

Each critical area performs different functions and each community assesses the values of the critical areas in its environment differently. Therefore, the purpose of protecting critical areas is unique for each community. Critical areas protection is essential to protect the public's health and safety, and can be used to comply with state and federal laws. Additionally, there are economic reasons to protect critical areas. Protection of drinking water quality and quantity supports sustainable growth. Critical areas support resource industries, such as salmon and shellfish harvesting. If the functions of critical areas are not protected now, attempting to restore them in the future is likely to be costly, if not impossible. One example is restoration of flood storage capacity. Failure to protect local populations of fish and wildlife can result in federal listings under the Endangered Species Act (ESA), which can bring significant constraints.

For every community, there are at least three reasons to protect critical areas:

- To protect the public from threats to human safety and to protect public and private property from natural hazards.
- To protect the environment and enhance the state's quality of life.
- To preserve those environmentally sensitive areas that are valuable to the public and provide ecological function.

Introduction

This handbook is designed to help Washington communities review and, if needed, revise locally adopted programs for designating and protecting critical areas under the Growth Management Act (GMA). The Legislature amended GMA in 1997 to require counties and cities to periodically take action to review and, if needed, revise their comprehensive land use plan and development regulations to ensure that the plan and regulations are consistent with changes to statute since the last update.¹ Meeting the Best Available Science (BAS) requirement was challenging for many jurisdictions in the initial round of periodic updates that were due

¹ RCW 36.70A.130.

between 2004 through 2008.² Identifying the “best available science” and “including” that science in updated regulations often presented logistical and political challenges.

Although not all counties and cities are fully planning under the GMA pursuant to RCW 36.70A.040, all counties and cities in the state are required to adopt development regulations to protect critical areas, and to periodically review those regulations. While local governments have broad discretion in developing and amending comprehensive plans and development regulations tailored to local circumstances (including critical areas regulations), that discretion is bounded by the goals and requirements of the Growth Management Act.³

Each city and county in Washington state initially had the responsibility to perform the complex task to classify, designate, and protect those critical areas found in its local environment. Counties and cities planning under RCW 36.70A.040 were required to adopt development regulations to protect critical areas by September 1, 1991. All other counties and cities were required to adopt regulations by March 1, 1992.⁴ All counties and cities in the state have adopted critical areas regulations, and most have updated them at least once.

As local governments continue to work through periodic updates, the focus of this handbook is to help them identify any needed revisions to their critical areas regulations. This handbook, and guidance published by other state agencies, provide recommendations for local communities to consider when updating their critical areas regulations based on best available science. It provides additional recommendations for monitoring critical areas regulation implementation and effectiveness.

This handbook suggests multiple approaches to critical areas protection, including regulatory and non-regulatory methods. Protecting critical areas involves a variety of strategies, from the adoption of conservation policies in comprehensive plans, to the designation of appropriate land uses, zoning, and protection of open spaces. Subdivision codes are important in how communities plan for open space and plan for the retention of important natural landscape features. Critical areas regulations are important because they provide the administrative review and approval process for regulating land uses that may impact critical areas. Monitoring of the permit process for implementation and effectiveness can provide a feedback loop to assess and improve critical areas protection. While each local government uses unique approaches, all have a common interest in achieving no net loss of critical areas functions and values.

The suggestions in this handbook are not mandatory, for there is no single best approach to critical areas protection for all communities. Each city or county must decide which approaches

² The original deadline of September 1, 2002, was extended in the 2002 session by the Legislature to a staggered schedule of every eight years. The Legislature amended the deadline again to reflect the current staggered schedule of 2015 – 2019, and every eight years thereafter.

³ See *King County v. Central Puget Sound Growth Management Hearings Board*, 142 Wn.2d 543, 555-59 (2000) (King County II).

⁴ RCW 36.70A.060(2)

to critical areas protection are appropriate to apply locally, consistent with the requirements of the GMA and the community's future vision. This handbook does not create any new standards or any new legal authority. The sole purpose is to provide a resource to local governments in reviewing and, if needed, revising their critical areas protection programs by discussing issues and presenting examples for consideration.

This handbook provides references to other resources and contacts to help jurisdictions identify potential sources of aid. Given the changing nature of regulations, natural resources, and scientific inquiry, the chapters of this handbook can be separately revised as needed to reflect new information and new requirements.

This handbook mostly addresses critical areas as defined by Washington's Growth Management Act. Information about other state and federal regulations that may have different requirements applicable to critical areas is provided in Chapter 4. Chapter 7 applies to critical areas both under the GMA and the Shoreline Management Act (SMA).

Handbook Organization

This handbook is organized for ease of use by counties and cities that are updating local critical areas protection programs. Handbook topics are organized sequentially following a process a city or county might use when updating a critical areas protection program, starting with a review of best available science and management recommendations, and other policy considerations.

This chapter provides an overview of the requirements of the Growth Management Act, and provisions in Commerce guidance under the Washington Administrative Code (WAC).

Subsequent chapters and sections provide:

- Information about and links to state resources for reviewing and updating critical areas protection measures;
- Structuring critical areas regulations;
- Critical areas protection and other local land use regulations, and state and federal regulatory programs and requirements;
- Critical areas protection in natural resource lands
- Non-regulatory incentive programs; and
- Monitoring and adaptive management for permit implementation.

Commerce Administrative Code Updates

A table of WAC updates, including effective dates for ease of reference in determining changes since a county or city's last update, is provided in Appendix 1.A. Commerce undertook a

significant update of its WACs in 2010 to reflect statutory changes, case law, and important Growth Management Hearings Board decisions.

Court and Growth Management Hearings Board Decisions

The GMA affords local government significant discretion in how they achieve compliance. While this provides a significant degree of flexibility, it also creates a lack of certainty. In reviewing critical area protection programs for compliance, local governments are encouraged to review decisions made by the Growth Management Hearings Board and Washington state courts. While Hearings Board decisions are not binding on jurisdictions not subject to a particular appeal, they provide guidance on how the Board may decide future appeals. Court of Appeals decisions are binding on jurisdictions within their district, and provide persuasive precedent for other jurisdictions. Supreme Court decisions are binding on all jurisdictions in the state. Local government consideration of court and hearings board decisions can help build defensible and effective critical area protection programs.

A summary of all court decisions, and a compilation of Growth Management Hearings Board digest summaries since 2005, that address critical areas protection are provided in Appendix 1.B. Full texts of court cases should be consulted.⁵ Hearings Board decisions and the Hearings Board digests are available on the Hearings Board website at www.gmhb.wa.gov.

All of the court decisions relating to critical areas are summarized or referenced, as applicable, throughout the text of the Handbook. The Handbook includes several of the more important Growth Management Hearings Board case digest summaries are provided.

Critical Areas Protection Provision Examples

In addition to the information included in the handbook, examples of locally adopted ordinances and programs to designate and protect critical areas, including recently updated programs, [will be] posted on the Department of Commerce Growth Management Services [Critical Areas and Best Available Science web site](#). While these local examples are valuable references, your community may have conditions that need to be addressed differently depending on local environmental conditions and community values.

⁵ Recent decisions by the Court of Appeals and the Supreme Court can be obtained through their [web site](#).

When to Update Your Critical Areas Program

The GMA requires that comprehensive land use plans and development regulations, including critical areas regulations, be subject to continuing review and evaluation by the county or city that adopted them. Counties and cities are required to take legislative action to review and, if needed, revise their comprehensive land use plans and development regulations to ensure the plans and regulations comply with the requirements of the GMA according to an eight-year cycle. However, changes are also recommended in response to changing local knowledge, advances in scientific or technical knowledge, and in response to findings from monitoring programs.

For the update schedule, and more detailed guidance on conducting a periodic review process, see [Keeping Your Comprehensive Plan and Development Regulations Current](#) (2016) on the Commerce website.

The Legislature provided an additional 12-month grace period for the completion of critical area ordinances for all jurisdictions. This means that if the periodic update was due in 2017, the review and any revisions to the plan and regulations must be complete by June 30 of that year for the jurisdiction to continue to be in compliance with the GMA. However, for the purposes of grants and loans, a jurisdiction would not be considered out of compliance until June 30 of 2018 if they had not completed the review and update of their critical areas ordinance.⁶

The level of review should depend on several common-sense factors. For example, if the jurisdiction contains significant, extensive, and/or inadequately protected critical areas, a more detailed review of its policies and development regulations may be necessary. If new sources of best available science are identified (including any management recommendations associated with the new science), the jurisdiction should review those updates for applicability to its critical areas regulations.

A well-documented record should support local governments' decision-making, including the facts relied upon, the analysis used, and the conclusions reached. The record should include a description of the review that was conducted, and the rationale for that review. Once adopted, the critical areas regulations should contain a "Findings of Fact" or other statement that documents this process. To assist local governments with this process, some examples of findings of fact are provided in Appendix 1.D. The examples provide different approaches to draft a good update process summary.

⁶ RCW 36.70A.130 (7)(b)

Steps to Review and Update a Critical Areas Protection Program

In reviewing and updating a critical areas program, the following steps are recommended:

- Consult your requirements for public participation in the review and update process. Counties and cities should follow their adopted public participation program⁷ that identifies procedures and schedules for the public to participate in the periodic update of their critical areas regulations.
- Consult the Commerce critical areas checklist⁸, and links to other state agency resources posted on Commerce critical areas website, for any amendments to the GMA or Commerce WAC and any updates on best available science or agency management recommendations. **Commerce strongly recommends using the critical areas checklist in designing a work program to complete the periodic update.**
- After determining the scope of changes needed, counties and cities may elect to adopt an ordinance or resolution letting the public know early “what is on the table” as part of the update.
- Review any revisions for consistency with the comprehensive plan policies and land use designations, and for consistency with other development regulations. The land use element of comprehensive plans must include an assessment of stormwater pollution and provide approaches to reduce and mitigate such discharges. Managing stormwater discharges can be directly related to protecting critical areas.
- If the critical areas ordinance has been adopted by reference in the Shoreline Master Program (SMP), an update to the SMP will be required if your jurisdiction wants the critical area regulations to apply in shoreline jurisdiction. Jurisdictions may consider amending the SMP concurrently with critical area amendments. The joint review process under WAC 173-26-104 should help jurisdictions with a unified approach to amending the critical areas and shoreline master program.
- Consult with other jurisdictions in the watershed for consistency and any regional issues and approaches to consider.
- Consult with regional state agency staff while drafting decisions, including Washington Department of Fish and Wildlife (WDFW) regional habitat biologists; Washington Department of Ecology (Ecology) regional wetlands specialists, flood program managers, and groundwater protection specialists; Washington Department of Natural Resources (WDNR) geology staff and aquatic program regional managers; and Washington Department of Health Office of Drinking Water staff.⁹ Consultation early in the process is recommended to identify and address issues, thus avoiding “surprises” that can cause delays in adoption or possible appeals.
- If substantial revisions are being considered, think about convening a technical advisory committee that includes local experts such as natural resource program managers,

⁷ As required by RCW 36.70A.140.

⁸ See the [Commerce Growth Management Critical Areas web page](#).

⁹ A complete list of state agencies with environmental expertise is provided in [WAC 197-11-920](#).

tribes, Salmon Recovery Lead Entities¹⁰, and Local Integrating Organizations for Puget Sound, water service suppliers, regional state agency technical staff, and any non-governmental entities working on habitat or species recovery or management.

- Take legislative action to adopt any revisions to the critical areas regulations and conclude that the periodic update of the critical areas regulations is complete. The ordinance or resolution:
 - Must be explicitly approved by the local government’s legislative body as having been completed in accordance with GMA update requirements (citing specifically to RCW 36.70A.130), both to comply with the statute and to set time and subject matter limits;
 - Should include findings that refer to any previous legislative actions that were part of the periodic update (e.g., resolutions adopting a public participation plan), and a finding that the jurisdiction has completed its periodic update requirement under the GMA; and
 - Should include findings that reference any sources of best available science and how the science was considered substantively in the development of any revisions to the regulations.
- Submit notice of intent to adopt to Commerce at least 60 days prior to adoption.¹¹
- Send a complete and accurate copy of the critical areas regulations to Commerce within 10 days after final adoption.¹²

Growth Management Hearings Board Decisions

Futurewise and Pilchuck Audubon Society challenged Snohomish County’s update to its critical areas ordinance where there had been no new or recent GMA amendments, no substantive, relevant regulatory amendments, and no new best available science. The Central Puget Sound Growth Management Hearings Board rejected the petitioners’ interpretation of a Supreme Court decision regarding standing to challenge a county’s actions under GMA review and update requirements.¹³ However, the Board found that the County had clearly articulated the applicable law: “...where a regulation is wholly unchanged or is amended in a manner unrelated to the substance of the legal issue...and petitioner cites no changed science or GMA mandate, the challenge is time barred.” The Hearings Board went on to state:

...even though the Board rejects Petitioners’ interpretation of *Thurston County*, challenges to CAR amendments may be raised if the County failed to consider BAS in substantively amending the CARs. That is, if there has been “new”, more recent, science

¹⁰ The [Governor’s Salmon Recovery Office and Recreation and Conservation Office website](#) provides links to the recovery plans, monitoring efforts, policies, and the [lead entity staff](#) that coordinate salmon recovery locally.

¹¹ RCW 36.70A.106(1). Some counties and cities combine this notice with their notice of determination under the State Environmental Policy Act.

¹² RCW 36.70A.106(2)

¹³ *Thurston County v. Western Washington Growth Management Hearings Board*, 164 Wn.2d 329 (2008).

developed applicable to the protection of the functions and values of a particular critical area, an amended CAR would need to reflect consideration of same.¹⁴

In a previous case, the Central Board found that a specific restriction to the Board’s scope of review arises when a party challenges a comprehensive plan or development regulation that has been “updated” in response to GMA planning cycles. The Supreme Court has ruled that the periodic updates required in the statute do not create an open season for challenges to previously-adopted provisions that are carried over into the new plan or code. Thus a party may challenge only new or amended plan and regulatory provisions in an update. Challenge to unchanged provisions is time-barred except where required by a recent GMA legislative amendment, new population forecast, or changed science concerning protection of critical area functions and values.¹⁵

However, the Central Board also previously found that the GMA requires that critical areas regulations be updated periodically, RCW 36.70A.130(3), and that cities “shall include” best available science in designating critical areas, RCW 36.70A.172(1). The Board noted that a city violated the GMA when it failed to include in its designation of geological hazard areas a great deal of new science it was aware of concerning the existence and location of surficial faults, and concerning the past occurrence and future risks of tsunamis and lahars.¹⁶

Growth Management Act Requirements to Protect Critical Areas

Local governments are required to do two things to comply with the GMA: designate critical areas and protect their functions and values. In doing so, they must include the best available science, and must give special consideration to anadromous fish.¹⁷ And, they should consider critical areas protection broadly by using a landscape scale approach to protecting ecosystem functions and values.

There are five types of critical areas identified in the GMA.¹⁸ They are:

- Wetlands
- Areas with a critical recharging effect on aquifers used for potable water
- Frequently flooded areas
- Geologically hazardous areas
- Fish and wildlife habitat conservation areas

¹⁴ *Futurewise, Pilchuck Audubon Society, and the Tulalip Tribes v. Snohomish County*, Case No. 15-3-0012c, FDO at 4 (February 17, 2017). Note: This summary is the author’s as it provides more detail than the Growth Management Hearings Board digest. As of March 2018, the digest notes that an appeal of this decision is pending.

¹⁵ *John Postema v. Snohomish County*, Case No. 15-3-0011, FDO at pp 5-6 (April 8, 2016). Note: An appeal of this decision is pending.

¹⁶ *Seattle Audubon Society, et al v. City of Seattle*, 06-3-0024, FDO (12/11/06), at 19.

¹⁷ RCW 36.70A.172

¹⁸ See RCW 36.70A.030(5).

Designating Critical Areas

The Minimum Guidelines

The Legislature directed the Washington State Department of Community, Trade and Economic Development (now Commerce)¹⁹ in 1990 to develop minimum guidelines to guide the classification of agricultural lands, forestlands, mineral resource lands and critical areas.²⁰ Chapter 365-190 WAC was adopted in 1991, and amended in 2010.²¹

The Minimum Guidelines are minimum requirements for critical areas classification and designation. The Guidelines reference the statutory requirement to include best available science, and recommend that counties and cities designate critical areas using maps and performance standards.²² Designation is usually done with a map such as a zoning map. However, there is usually not enough on-the-ground information to do an effective job of designating critical areas using this method. Critical areas designation is typically done through performance standards. The term “performance standards” means the criteria or characteristics of the land that determine that it is a critical area.²³

Adopting performance standards provides a way to designate critical areas without requiring a prohibitively expensive inventory and mapping before the requirements for protecting the critical area would apply. Instead, the legislative act of designation is the adoption of criteria, or performance standards, that are used to determine whether a particular area is a critical area by applying the criteria on the ground. This typically happens during local project review. For example, the criteria may identify characteristics such as the presence of certain plant communities or the presence of hydric soils as performance standards indicating a wetland. Determining the exact location of the boundary occurs only through a delineation process during the site investigation associated with development. The National Wetlands Inventory map shows some, but not all, wetlands. The duty to protect wetlands exists regardless of whether a particular wetland is in in the National Wetland Inventory.

¹⁹ For purposes of this handbook, references to Commerce include the former Department of Community, Trade and Economic Development.

²⁰ RCW 36.70A.050

²¹ See Appendix 1.A for a table of amendments to Commerce WAC provisions related to critical areas with effective dates.

²² WAC 365-190-080(3) and (4)

²³ WAC 365-190-040(5), WAC 365-190-080(4)

The Minimum Guidelines provide a process that local governments used when they first designated critical areas under the GMA.²⁴ Sources of best available science are included in the Guidelines, and in Chapter 2 of this Handbook.

The critical areas requirements in the GMA are closely related to many underlying public interests related to governmental costs and efficiency. The unwise development of critical areas, including lands or areas susceptible to natural hazards, may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, put species at risk of extinction and the regulatory burdens that listing triggers, subject persons and property to unsafe conditions, and affect the perceived quality of life. It is more costly to remedy the loss of critical areas functions and values than to conserve and protect them from loss or degradation. The inherent economic, ecological, social, and cultural values of critical areas should be considered in the development of strategies designed to protect these lands.²⁵

In recognition of these common concerns, classification and designation of critical areas is intended to protect critical areas, and to preclude land uses and development which are incompatible with critical areas. When classifying, designating, and protecting critical areas, counties and cities should integrate regulatory and non-regulatory approaches together in a comprehensive program that relates to existing local, state, and federal efforts.²⁶ An integrated approach should also consider other applicable planning requirements, including the need to identify open space corridors in RCW [36.70A.160](#), and the need to include the best available science in policies and regulations protecting critical areas in RCW [36.70A.172](#).²⁷

Not all areas and ecosystems are critical for the same reasons. Some are critical because of the hazard they present to public health and safety, some because of the values they represent to the public welfare. In some cases, the risk posed to the public by use or development of a critical area can be mitigated or reduced by engineering or design; in other cases that risk cannot be effectively reduced except by avoidance of the critical area. Classification and designation of critical areas is intended to lead counties and cities to recognize the differences among these areas, and to develop appropriate regulatory and non-regulatory actions in response.²⁸

Precluding incompatible uses and development does not mean a prohibition of all uses or development. Rather, it means governing changes in land uses, new activities, or development that could adversely affect critical areas. For each type of critical area, counties and cities planning under the act should review and, if necessary, update their classification schemes and development regulations that govern changes in land uses and new activities.

²⁴ WAC 365-190-040

²⁵ WAC 365-190-020(2)

²⁶ Non-regulatory approaches are discussed in Chapter 6.

²⁷ WAC 365-190-020(3)

²⁸ WAC 365-190-020(4)

Critical areas designation is an overlay of other land uses, including designated natural resource lands.²⁹

For example, if both critical area and natural resource land use designations apply to a given parcel or a portion of a parcel, both or all designations must be made.

Court and Growth Management Hearings Board Decisions

After Commerce adopted the Minimum Guidelines, there was some confusion as to whether the guidelines in Chapter 365-190 were mandatory. Subsequent court decisions have made it clear that the guidelines are, in fact, mandatory.

The Court of Appeals, Division 2, referred to the Minimum Guidelines as mandatory. “[T]he minimum guidelines require counties to map natural resource land”, citing WAC 365-190-040(2)(b)(vii).³⁰ The GMA sets forth objectives and minimum guidelines that local government must follow when classifying land.³¹

The Supreme Court approved the Division 2 Court’s approach of reliance on the Minimum Guidelines in 2006.³² Subsequently, the Division 2 Court stated, “Our Supreme Court has held that a county may designate a minimum parcel size for certain land type designations so long as the limitation is consistent with GMA and with [Commerce] principles....”³³ Since 2012, in keeping with the Supreme and appellate courts’ clarifications, the Growth Management Hearings Board has held that counties and cities must follow the Minimum Guidelines.³⁴

In order to ensure a defensible critical areas protection program, the Commerce Minimum Guidelines should be considered mandatory and must be used to designate critical areas.

²⁹ WAC 365-190-020(6)

³⁰ *Manke Lumber Company v. Diehl*, 91 Wn. App. 793, 807 (1998).

³¹ *Id.* at 840.

³² *Lewis County v. Western Washington Hearings Board*, 157 Wn.2d 488, 501 (2006).

³³ *Clark County v WWGMHB*, 161 Wn.App. 204, 232, 254 P.3d 862 (2011): rev’ granted 172 Wn.2d 1006, 259 P.3d 1108 (Sep. 6, 2011): “... the regulation actually *requires* counties to consider the 10 factors.”

³⁴ See *Friends of Pierce County, et al. v. Pierce County*, GMHB No. 12-3-0002c, FDO at 31 (July 9, 2012); *Futurewise, Pilchuck Audubon Society; and the Tulalip Tribes v. Snohomish County*, Case No. 15-3-0012c, FDO at 17 (February 17, 2017).

Protecting Critical Areas

There are two primary forms of critical areas protection – protection of functions and values, and protection of health and safety. They often apply at the same time.

Protecting Functions and Values

RCW 36.70A.172(1) requires counties and cities to protect the functions and values of critical areas. Although counties and cities may protect critical areas in different ways, or may allow some localized impacts to critical areas, or even the potential loss of some critical areas, development regulations must preserve the existing functions and values of critical areas. The Supreme Court found that a “no harm” standard provision in a county ordinance protected critical areas by maintaining existing conditions. The county’s decision to not require mandatory riparian buffers in agricultural lands was upheld because doing so would impose a requirement to restore habitat functions that no longer existed. The GMA requirement to protect critical areas does not impose a corresponding requirement to enhance.³⁵ However, the GMA requires that critical areas regulations protect all functions and values of the designated areas.³⁶

The term “functions and values” refers to the core ecological processes performed by a particular critical area. Critical area functions contribute to the overall health of the ecosystem. Ecological functions of critical areas include flood attenuation, wildlife habitat, water quality, and groundwater recharge. Once a wetland has been identified, one must determine what functions need to be protected, and what is required to do protect them. For example, the width of the wetland buffer is determined by the habitat and water quality values associated with the wetland, or the amount of separation required to reduce pollution in stormwater runoff going into the wetland.

Protecting Health and Safety

“Protection” in the context of critical areas under the GMA means preservation of the functions and values of the natural environment, or to safeguard the public from hazards to health and safety.³⁷ Approaches to protection of the functions and values of critical areas will vary with the type of critical area. Functions and values of wetlands and fish and wildlife habitat conservation areas usually involve some sort of vegetative buffer to protect water quality, manage flow during storm events, and protect habitat. Protection of critical aquifer recharge areas typically

³⁵ *Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board*, 161 Wn.2d 415 (2007).

³⁶ *Yakima County v. Eastern Washington Growth Management Hearings Board*, 168 Wn. App. 680 (2012); and *Whidbey Environmental Action Network v. Island County*, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), review denied, 153 Wn.2d 1025 (2005).

³⁷ WAC 365-196-830(3)

requires protection from spills and polluting runoff. Protection of geologically hazardous areas is about reducing risk to life and property from events such as landslides, tsunamis, and volcanic eruptions. While protecting frequently flooded areas involves protecting both floodplain and habitat function, it also protects life and property from flood events.

Growth Management Hearings Board Decisions

The Western Washington Growth Management Hearings Board views the GMA as effectively establishing two categories of critical areas – those areas whose functions and values are protected for the beneficial services they provide (i.e. Wetlands, FWHCAs, Aquifer Recharge Areas) and those areas for which protection is needed due to the threat these areas pose to persons and property (i.e. Frequently Flooded Areas, Geologically Hazardous Areas).³⁸

The Central Puget Sound Growth Management Hearings Board addressed the question of what land use regulations are required, once a hazard is acknowledged. The Board agreed with Pierce County that land use policy and responsibility with respect to Mount Rainier Case II lahars – “low probability, high consequence” events – is within the discretion of the elected officials; they bear the burden of deciding “How many people is it okay to sacrifice.”³⁹

Mitigation Sequencing and Compensatory Mitigation

If a project proponent is proposing to impact a critical area, the critical areas regulations should require them to show that they have first avoided and minimized impacts wherever practicable. The Washington State Environmental Policy Act (SEPA) rules⁴⁰ and Section 404 of the federal Clean Water Act both require that a sequence of actions be taken for proposals that will impact wetlands.

Mitigation sequencing should be applied to show avoidance and minimization of impacts. The following are the steps in the mitigation sequence according to SEPA:

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;

³⁸ *OSF/CPCA v. Jefferson County*, Case No. 08-2-0029c, FDO, at 27 (Nov. 19, 2008).

³⁹ *Tahoma Audubon Society, et al v. Pierce County*, 05-3-0004c, Final Decision and Order, July 12, 2005, at 23 – 25.

⁴⁰ WAC 197-11-768

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.

Mitigation sequencing should be applied first (starting with avoidance through minimization, rectification, reduction or elimination over time) before determining whether compensatory mitigation is appropriate. Commerce’s Procedural Criteria provide that, if development regulations allow harm to critical areas (step 5 above), they must require compensatory mitigation of the harm. Development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas.⁴¹

Given the requirement to protect the functions and values of critical areas, compensatory mitigation should only be used after mitigation sequencing and it should be allowed with caution. Before allowing compensatory mitigation, a local government will need to determine that there is the ability to replace the functions and values through compensatory mitigation. Compensatory mitigation is specifically called out in the Minimum Guidelines as it applies to wetlands⁴², and to geologically hazardous areas⁴³. The WAC is silent with respect to the three other types of critical areas. For some types of critical areas or for some types of impacts, compensation may not be possible. When compensatory mitigation is not possible, harm to the critical area from development activity must be avoided.

Compensatory mitigation is used to offset the unavoidable impacts to critical areas by replacing the functions and values lost when a critical area is impacted. Examples of compensatory mitigation include mitigation ratios, debit-credit tools, mitigation banks, in-lieu fee programs, and off-site mitigation. For more information on examples of compensatory mitigation for wetlands impacts, see Ecology’s [Wetlands Guidance for CAO Updates](#), Eastern and Western Washington Versions (2016), pp. 13 – 16.

The Western Washington Growth Management Hearings Board clarified the difference between mitigation sequencing and compensatory mitigation:

“Mitigation” and “mitigation sequencing” are not always clearly understood. Those terms are easily confused with “compensatory mitigation”. The latter is the step in the mitigation sequence that occurs after avoidance and minimization. It involves restoring (re-establishing, rehabilitating), creating (establishing), enhancing, or preserving wetlands to replace those lost or degraded through permitted activities. “Mitigation” and “mitigation sequencing” have a broader meaning: they include as the first option, avoidance of any impact. If avoidance is not possible, the second step in mitigation

⁴¹ WAC 365-196-830

⁴² WAC 365-190-090(2)(d)(v)

⁴³ WAC 365-190-120(2)

sequencing is minimization. Only after those first steps does one then consider compensatory mitigation.⁴⁴

No Net Loss

With protection of critical areas, it is important to understand that protection does not mean that critical areas will not be impacted. Rather, impacts to high-quality critical areas should be prohibited except in limited circumstances. Impacts to other critical areas must be avoided and minimized under the mitigation sequence. When impacts cannot be avoided, new development must replace the lost functions and values through compensatory mitigation.

WAC 365-196-830(4) provides:

Although counties and cities may protect critical areas in different ways or may allow some localized impacts to critical areas, or even the potential loss of some critical areas, development regulations must preserve the existing functions and values of critical areas. If development regulations allow harm to critical areas, they must require compensatory mitigation of the harm. Development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas.

For critical areas regulated under the Shoreline Management Act (RCW 90.58.020), local shoreline master programs must include policies and regulations designed to achieve no net loss of ecological functions.⁴⁵

An Ecosystem Approach

The Western Washington and Central Puget Sound Growth Management Hearings Boards have found that, under the statutory definition of “critical areas”⁴⁶, counties and cities must protect “areas and ecosystems”. In these decisions, the Boards found that development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas.⁴⁷

⁴⁴ *Friends of the San Juans, P.J. Taggares Company, Common Sense Alliance, William H. Wright, and San Juan Builders Association v. San Juan County*, 13-2-0012c, Order Finding Compliance, p. 1, May 14, 2015.

⁴⁵ WAC 173-26-186(8)(b) and 201(2)(e)(i)

⁴⁶ RCW 36.70A.020(5).

⁴⁷ *Whidbey Environmental Action Network v. Island County*, 14-2-0009, Final Decision and Order, June 26, 2015; *Ann Aagaard, Judy Fisher, Bob Fisher, Glen Conley, and Save a Valuable Environment (SAVE) v. City of Bothell*, 15-3-0001, Final Decision and Order, July 21, 2015.

Functions and values must be evaluated at a scale appropriate to the function being evaluated. Commerce’s Procedural Criteria recommends protection at the ecosystem scale. Functions are the conditions and processes that support an ecosystem. Conditions and processes operate on varying geographic scales ranging from site-specific to watershed and even regional scales. Some critical areas, such as wetlands and fish and wildlife habitat conservation areas, may constitute ecosystems or parts of ecosystems that transcend the boundaries of individual parcels and jurisdictions, so that protection of their function, and values should be considered on a larger scale.⁴⁸ This is often true for salmon habitat.

Best Available Science

In 1995, the Washington State Legislature added a new section to the GMA to ensure that counties and cities include reliable scientific information when adopting policies and development regulations to designate and protect critical areas. RCW 36.70A.172 requires all counties and cities in Washington to “include the best available science in developing policies and development regulations to protect the functions and values of critical areas.”

The Legislature considered this requirement an important step towards regulatory reform and making timely project permitting decisions. Local governments’ understanding of where on the landscape critical areas occur, how they naturally function, and how best to regulate land uses that may impact them is important in ensuring that zoning and project permit decisions are being made without the need to complete expensive environmental review and new studies at the permit level. Good upfront planning and the adoption of scientifically defensible development standards should lead to quicker permit decisions.

While science is not the sole criterion to be used in developing critical areas policies and regulations, the Legislature singled out science for special mention. Rather than imposing any particular statewide standard, the Legislature opted to defer to local decision making when determining how to “include” the best available science.

The objective of including science is “to protect the functions and values of critical areas.” Science plays a central role in delineating critical areas, identifying functions and values, and recommending strategies to protect their functions and values. Scientifically valid information should help with an evaluation and discussion of the applicability, relevance, and limitation, if any, of the science that is contained in the record. Following enactment of RCW 36.70A.172, science-based recommendations cannot simply be disregarded in favor of competing considerations. Informed decision making requires that decision makers receive scientific information that has not been filtered through screens of competing interests.

⁴⁸ WAC 365-196-830(6)

For hazard-related critical areas, such as geologically hazardous or frequently flooded areas, the purpose of including best available science is to ensure that planning and decision-making (public and private) is informed by and consistent with the most complete understanding available of the extent and magnitude of natural hazards. This information changes frequently as data improves, and updates that increase or decrease the risk to an area should in turn trigger consideration of updates in the appropriate regulations, codes, and plans.

What Constitutes the Best Available Science?

Local governments must identify, collect, and assess the available scientific information relating to the protection of critical areas within their jurisdiction, and then determine which of that science constitutes the “best available science.” Local governments may accept or solicit scientific information from state and federal agencies, universities, tribes, subject matter experts, Salmon Recovery lead entities and Puget Sound Local Integrating Organization technical committees, and others. But the burden ultimately is on the local government to determine whether the scientific information assembled in fact constitutes the best available science.

With respect to the availability of science, the Western Washington Growth Management Hearings Board found that the best available science is science that is presently available as well as practically and economically feasible.⁴⁹ The Central Puget Sound Growth Management Hearings Board reasoned “that the “best available science” requirement includes the word “available” as an indicator that a jurisdiction is not required to sponsor independent research but may rely on competent science that is provided from other sources. . . .”⁵⁰

In September 1998, Commerce convened a technical team comprised of planners and scientists from state agencies and local governments to address the uncertainties regarding the inclusion of the “best available science” for critical areas designation and protection. Building on the work of the technical team, and following an extensive public dialog, Commerce adopted six new sections to the Procedural Criteria, Part Nine, WAC 365-195. The best available science rules are codified at [WAC 365-195-900 through 925](#) and took effect August 27, 2000.

What Does It Mean to “Include” the Best Available Science?

In order to demonstrate that the best available science has been “included” in the development of critical areas policies and regulations, a local government’s record should provide a rationale connecting the criteria in the ordinance used for designation and protection to the documented functions and values of critical areas known or potentially existing within the jurisdiction. The

⁴⁹ *WEAN/CARE v. Island County*, 08-2-0026c, Order on Reconsideration, December 22, 2008.

⁵⁰ *Hood Canal Environmental Council, et al v. Kitsap County*, 06-3-0012c, FDO (8/28/06), at 30.

local government’s record supporting adoption of those policies and regulations should include the following:

- The specific policies and regulations adopted to protect the functions and values of critical areas.
- Copies of (or references to) the best available science used in the decision making.
- The nonscientific information used as a basis for departing from science-based recommendations.
- The rationale supporting the local government’s reliance on the identified nonscientific information.
- Actions taken to address potential risks to the functions and values of the critical areas the policies and regulations are intended to protect.⁵¹

Court and Growth Management Hearings Board Decisions

Local governments must substantively consider the best available science when adopting policies and development regulations to designate or protect critical areas. Several court decisions have addressed this. The Division II Court of Appeals held that evidence of the best available science must be included in the record and must be considered substantively in the development of critical areas policies and regulations.⁵²

The Division III Court of Appeals held in 2014 that a county must indicate in the record that best available science was included or analyzed with a reasoned process. Mere inclusion of best available science in the record is not sufficient. The written record must “show the work” of the county or city, and explain how best available science was considered substantively in the development of the critical areas regulations.⁵³

In a 2005 decision⁵⁴, the Supreme Court found that the record must demonstrate that the County used scientific information and analyzed that information using a reasoned process. The Court appeared to have used a two-part test to assess a county’s compliance with the best available science requirement:

- (1) The County must rely on scientific information—the BAS requirement does not mandate the use of a particular methodology, but it requires at a minimum the use of a scientific methodology; and
- (2) The steps taken in analyzing the scientific information must constitute a reasoned process, with the process evident in the record.

⁵¹ WAC 365-195-915

⁵² *Whidbey Environmental Action Network v. Island County*, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), review denied, 153 Wn.2d 1025 (2005).

⁵³ *Ferry County v. Growth Management Hearings Board*, 184 Wn. App. 685, 339 P.3d 478 (2014).

⁵⁴ *Ferry County v. Concerned Friends of Ferry County*, 155 Wn.2d 824, 123 P.3d 102 (Nov. 17, 2005).

Quoting from a 2000 Western Washington Growth Management Hearings Board decision, the Supreme Court suggested it is not a reasoned process for a county to “choose its own science over all other science” or “use outdated science to support its choice.”

However, in 2012 the Division II Court of Appeals held that “including” BAS does not impose a duty on local governments to describe each step of their deliberative process but rather the local government is required to address on the record the relevant sources of BAS included in their decision-making.⁵⁵

The Division III Court of Appeals held that a county had failed to include the best available science in designating critical habitats, as required by RCW 36.70A.172(1). The county only designated as critical wildlife habitat areas that had been designated by a state or federal agency process as habitat for endangered, threatened, or sensitive species. The court ruled that, by tying the classification of critical habitat to lands designated by another state or federal agency, the county had avoided consideration of any scientific information. Instead, counties must use some kind of scientific methodology in a reasoned process of analysis to designate the critical habitats.⁵⁶

Departing from the Best Available Science

In general, local governments must take actions to protect critical areas based on best available science. In departing from actions supported by best available science, caution should be exercised. Local governments should only depart from best available science if it is necessary to balance competing goals of the GMA. Even then, the adopted policies and regulations must still protect the functions and values of critical areas.

- If you are considering an approach to protecting critical areas that is not supported by best available science, you must demonstrate how the alternative approach will protect the functions and values of critical areas. Specifically, in departing from BAS a local government should: Identify the information in the record that supports its decision to depart from science-based recommendations;
- Explain its rationale for departing from science-based recommendations; and
- Identify potential risks to the functions and values of the critical area or areas at issue and any additional measures chosen to limit such risks. State Environmental Policy Act (SEPA) review often provides an opportunity to establish and publish the record of this assessment.⁵⁷

⁵⁵ *Olympic Stewardship Foundation v. Western Washington Growth Management Hearings Board*, 166 Wn. App. 172 (2012), review denied, 174 Wn.2d 1007 (2012).

⁵⁶ *Stevens County v. Futurewise*, 146 Wn. App. 493 (2008), review denied, 165 Wn.2d 1038 (2009).

⁵⁷ WAC 365-195-915(1)(c)

Court and Growth Management Hearings Board Decisions

The Division II Court of Appeals held that if a city or county adopts a critical areas requirement that is outside the range supported by the best available science, it must provide findings explaining the reasons for its departure from the best available science and identifying the other GMA goals being implemented by that departure.⁵⁸

Regarding the availability of science, the Division II Court of Appeals found the GMA requires local governments to use best *available* science. The court recognized that the best science that is available may include science that is “immature” or not fully developed. The court upheld the Growth Management Hearings Board finding that the GMA required including the best science that was available. The proper remedy for addressing the problem of science that was not fully developed was the requirement in the GMA for periodic updates, rather than rejection of the available but not fully developed science.⁵⁹

The Division II Court also found that, to the extent a county or city relies on a previously-adopted ordinance to protect critical areas, that prior ordinance may be challenged for compliance with the GMA’s best available science requirements. The County relied partly on a six-year-old wetlands ordinance to protect fish and wildlife habitat conservation areas. The Court agreed that the BAS requirement does not operate retroactively, but it explained that critical areas regulations adopted before the BAS requirement was enacted were subject to challenge to the extent the County relied on them to fulfill the obligations imposed by the BAS requirement. “Otherwise, a county could use myriad preexisting regulations in an attempt to satisfy GMA critical areas requirements without actually having to include BAS analysis. This would contravene RCW 36.70A.172.”⁶⁰ However, in this case, the Court found the County did not rely substantively on the earlier wetlands buffers to protect fish and wildlife habitat, and it reversed the Board’s invalidation of the wetlands buffers.⁶¹

In the same decision, the Division II Court found that, if a city or county adopts a critical areas requirement that is outside the range supported by the best available science, it must provide findings explaining the reasons for its departure from the best available science and identifying the other GMA goals being implemented by that departure.⁶²

The Division III Court of Appeals found that a county failed to comply with the GMA when it departed from or ignored the recommendation of WDFW to designate habitat for endangered,

⁵⁸ *Whidbey Environmental Action Network v. Island County*, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), review denied, 153 Wn.2d 1025 (2005).

⁵⁹ *Kitsap Alliance of Property Owners v. Central Puget Sound Growth Management Hearings Board*, 160 Wash. App. 250 (2011)

⁶⁰ *Id.* at 180. The language and holding in this portion of the decision was modified from the previous decision withdrawn by the Court.

⁶¹ Note, this was not a challenge to an update under RCW 36.70A.130 of the county’s critical areas ordinance.

⁶² *Whidbey Environmental Action Network v. Island County*, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), review denied, 153 Wn.2d 1025 (2005).

threatened and sensitive species or designate species of local importance. The court also found that the county failed to provide a reasoned justification for departing from best available science. When departing from best available science, the county must “show its work” and include the analysis in the record. In the absence of scientific information, the county should adopt a precautionary or no risk approach.⁶³

The Supreme Court held that a county did not include best available science when it adopted standard buffers and adjusted minimum stream and wetland buffers. The Court found that the adopted buffers did not protect all functions for either streams or wetlands because almost all of the scientific studies reviewed by the county recommended buffers greater than those that were adopted. However, the court also found that the County had provided reasoned justification for not regulating ephemeral streams as critical areas.⁶⁴

The Supreme Court also held that the GMA doesn’t require local governments to always follow best available science. Here the court stated that the county was required to “include” best available science in the record and departures from best available science would be permitted where the county provided a reasoned justification for the departure. A tribe challenged the county's critical areas ordinance for failing to require mandatory riparian buffers. The court concluded the county is not required to enhance critical areas but could protect critical areas by maintaining existing conditions. The county’s decision to not require mandatory riparian buffers was a justified departure from best available science because doing so would impose a requirement to restore habitat functions that no longer existed. The GMA requirement to protect critical areas does not impose a corresponding requirement to enhance.⁶⁵

Addressing Inadequate Scientific Information

In developing critical area protection programs, local governments are likely to encounter situations where no applicable scientific information exists, or where the existing scientific information does not provide insufficient certainty or direction on how to protect critical areas. In such situations, local government should consider a precautionary or no risk approach. The basic concept behind a no risk approach is that actions that cannot later be “undone”, and which may harm critical area, are prohibited until the uncertainty is resolved through scientific or technological advances⁶⁶. A no risk approach may require that limits be placed on development and land use activities.

An adaptive management program is another approach to addressing a lack of adequate scientific information. Adaptive management programs rely on scientific methods to evaluate

⁶³ *Ferry County v. Growth Management Hearings Board*, 184 Wn. App. 685, 339 P.3d 478 (2014)

⁶⁴ *Yakima County v. Eastern Washington Growth Management Hearings Board*, 168 Wn. App. 680 (2012).

⁶⁵ *Swinomish Indian Tribal Community. v. Western Washington Growth Management Hearings Board*, 161 Wn.2d 415 (2007).

⁶⁶ WAC 365-195-920(1).

how well regulatory and non-regulatory actions are achieving their objectives. Under an adaptive management program management, policy, and regulatory actions are experimental. These actions are then purposefully monitored to evaluate their effectiveness. Based on the results of the monitoring program, changes may be necessary to ensure effective critical areas protection.⁶⁷

An adaptive management program is a formal and deliberate scientific approach to taking action and obtaining information in the face of uncertainty. To implement an adaptive management program effectively, counties and cities should be willing to:

- (a) Address funding for the research component of the adaptive management program;
- (b) Change course based on the results and interpretation of new information that resolves uncertainties; and
- (c) Commit to the appropriate time frame and scale necessary to reliably evaluate regulatory and non-regulatory actions affecting critical areas protection and anadromous fisheries.⁶⁸

Court and Growth Management Hearings Board Decisions

The Western Washington Hearings Board found that, when a less than cautionary approach is chosen for protection, that approach requires monitoring and adaptive management. In one case, that approach was found to require an effective monitoring and adaptive management program that relies on scientific methods to evaluate how well regulatory and non-regulatory actions adopted by the county achieve their objectives.⁶⁹

In another case, a county which had considered the best available science and adopted less stringent protection standards that balance the need for protection of potable water supplies against the chilling effect of regulation against development, was found by the Western Board to have complied with the GMA only if the county also adopted a monitoring strategy that includes stricter development regulations that will be implemented at once if the less stringent protection standards prove to be inadequate to protect against seawater intrusion.⁷⁰

The Western Board also held that because the City has adopted precautionary measures based on best available science to protect wetlands, the Board did not need to reach the issue of whether its adaptive management problem complied with RCW 36.70A.172.⁷¹

⁶⁷ WAC 365-195-920(2)

⁶⁸ WAC 365-195-920(2)(a) – (c)

⁶⁹ *Swinomish Indian Tribal Community et al. v. Skagit County*, 2-2-0012c (Compliance Order, 12-8-03)

⁷⁰ *Olympic Environmental Council, et al. v. Jefferson County*, 01-2-0015 (Compliance Order, 12-4-02).

⁷¹ *Evergreen Islands/Futurewise, et al v. Anacortes*, Case No. 05-2-0016, (Compliance Order, at 5, 4-09-07).

Updates to Include New Science

As previously noted, the Central Puget Sound Growth Management Hearings Board found that the GMA requires that critical areas regulations be updated periodically, RCW 36.70A.130(3), and that cities “shall include” best available science in designating critical areas, RCW 36.70A.172(1). The Board noted that a city violated the GMA when it failed to include in its designation of geologically hazardous areas a great deal of new science.⁷²

Providing a Constitutional Nexus

Compliance with the best available science requirement may be necessary to satisfy constitutional nexus and proportionality requirements per the earliest court decision regarding best available science. The Division II Court of Appeals suggested in dictum⁷³ that the best available science requirement may have constitutional ramifications with respect to the nexus and rough proportionality limits the United States Supreme Court has placed on governmental authority to impose conditions on development applications.⁷⁴

Special Consideration for Anadromous Fish

When developing policies and regulations to designate and protect critical areas, local governments must give special consideration to measures necessary to preserve or enhance anadromous fisheries. WDFW defines “anadromous fish” as a fish that is born in fresh water, spends much of its life in the sea, and returns to fresh water to spawn. While most Pacific salmonids die after their first spawning, adult char (e.g., bull trout), cutthroat trout and steelhead can live for many years, moving in and out of saltwater and spawning each year. The life history of Pacific salmonids contains critical periods of time when these fish are more susceptible to environmental and physical damage than at other times.⁷⁵

The requirement to focus on protection measures for anadromous fish is in addition to the requirement to include the best available science. WAC 365-195-925 explains what it means to give “special consideration” to the protection of anadromous fisheries:

⁷² *Seattle Audubon Society, et al v. City of Seattle*, 06-3-0024, FDO (12/11/06), at 19.

⁷³ “Dictum”, or “dicta” in the plural form, is a legal term for opinions of a judge that do not embody the determination of the court. Because they go beyond the facts before the court, they are the individual views of the opinion’s author and are not binding as legal precedent.

⁷⁴ *Honesty in Environmental Analysis & Legislation (HEAL) v. Central Puget Sound Growth Management Hearings Board*, 96 Wn. App. 522, 979 P.2d 864 (June 21, 1999) (amended Aug. 25, 1999).

⁷⁵ [Land Use Planning for Salmon, Steelhead and Trout: A Land Use Planner’s Guide to Salmonid Habitat Protection and Recovery](#), WDFW, October 2009.

- The county or city should take the same steps it takes to demonstrate it has included the best available science. It should make a record showing that its critical areas policies and regulations identify and address “conservation or protection measures necessary to preserve or enhance anadromous fisheries” that are grounded in the best available science.
- The “conservation or protection measures” for anadromous fisheries should include measures that preserve or enhance habitat for all life stages of anadromous fish.
- The life stages of anadromous fish can be tied to the following general habitat requirements:
 - Adequate but not excessive stream flows.
 - Cool, well-oxygenated, unpolluted water.
 - Streambed gravels that are relatively free of fine sediments.
 - Instream structural diversity (interposed pools, riffles, hiding and resting cover).
 - Unimpeded migratory access to and from spawning and rearing areas.
 - Complex estuarine and nearshore habitats that support food production, migratory cover, and physiological transition between fresh and salt water.

These habitat requirements and life cycle needs should be given special consideration when developing critical area protection programs. This can be done many different ways, including ensuring riparian corridors and vegetation management along shorelines are preserved to help provide large woody debris for structural diversity, lower water temperature, nutrient input, pollutant inputs and shoreline stabilization. Flood hazard mitigation is important, as well as groundwater discharge, to ensure adequate but not excessive stream flows for anadromous fish.

Methods to protect water quality and ensure that there is cool, well-oxygenated, unpolluted water should be taken into consideration. This can include development strategies that minimize soil compaction and impervious cover, and retain native vegetation. Erosion control and stormwater management are needed to keep fine sediments and other pollutants from entering the stream and reducing spawning gravel quality or harming aquatic invertebrates utilized as food sources. Maintenance and protection of wetlands is important for preserving adequate water recharge to streams during low flow periods, as well as important habitat for amphibious species and insects that are potential food sources for fish.

Commerce notes in the Procedural Criteria that a regional approach is especially important when giving special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.⁷⁶ A regional approach recognizes that ecosystems and the fish that rely on them cross jurisdictional boundaries.

⁷⁶ WAC 365-196-830(7)

Court and Growth Management Hearings Board Decisions

The Supreme Court addressed the question of whether enhancement of natural conditions under the GMA is required. The Court stated:

The legislature has also recognized that “protect” has a different meaning than “enhance.” In several sections of the GMA, the legislature allows enhancement of natural conditions under the GMA without requiring enhancement. For example, RCW 36.70A.172(1) requires counties to “give special consideration to protection measures necessary to preserve or enhance anadromous fisheries.” This statute clearly gives counties a choice between preserving “or” enhancing. Furthermore, the requirement is to give “special consideration to” such measures, not necessarily to adopt them. See WAC 365-195-925(2) (a county must include “in the record” evidence of special consideration to comply with RCW 36.70A.172(1)). Another statute, RCW 36.70A.020(10), lists as a goal of the GMA to “enhance the state's high quality of life, including air and water quality.” However, the GMA allows counties to decide how to achieve the goal of enhancing water quality without specifically requiring enhancement of a damaged fish habitat. In our judgment, water quality and fish habitat are related, but they are not the same. A duty to enhance the quality of water is not a duty to enhance fish habitat. A third example is RCW 36.70A.460. It recognizes that under chapter 77.55 RCW, fish habitat enhancement projects that meet certain criteria are entitled to a streamlined permitting process. Nothing in that chapter, however, requires a county to undertake such projects. See RCW 77.55.181.

As the foregoing illustrates, the legislature has not imposed a duty on local governments to enhance critical areas, although it does permit it. Without firm instruction from the legislature to require enhancement of critical areas, we will not impose such a duty. Therefore, to the extent that the Tribe argues that the GMA places a higher burden upon the county than the duty to prevent new harm to critical areas, we disagree. The “no harm” standard, in short, protects critical areas by maintaining existing conditions.⁷⁷

The Central Puget Sound Growth Management Hearings Board reviewed Pierce County’s detailed scientific evidence in the record regarding salmon habitat along marine shorelines to determine whether the County gave “special consideration to anadromous fish.” The Hearings Board found that:

Despite the detailed information about the function and values of salmonids habitat specific to each shoreline reach, Pierce County eliminated “marine shorelines” from the fish and wildlife habitat conservation areas listed in its critical areas ordinance without

⁷⁷ *Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board*, 161 Wn.2d 415 (2007).

determining whether the remaining designated critical areas adequately met the needs of salmon.⁷⁸

Deferring salmon habitat protection to a site-by-site analysis based on disaggregated factors is inconsistent with Pierce County's best available science. Nothing in the science amassed by the County supports disaggregating the values and functions of marine shorelines.⁷⁹

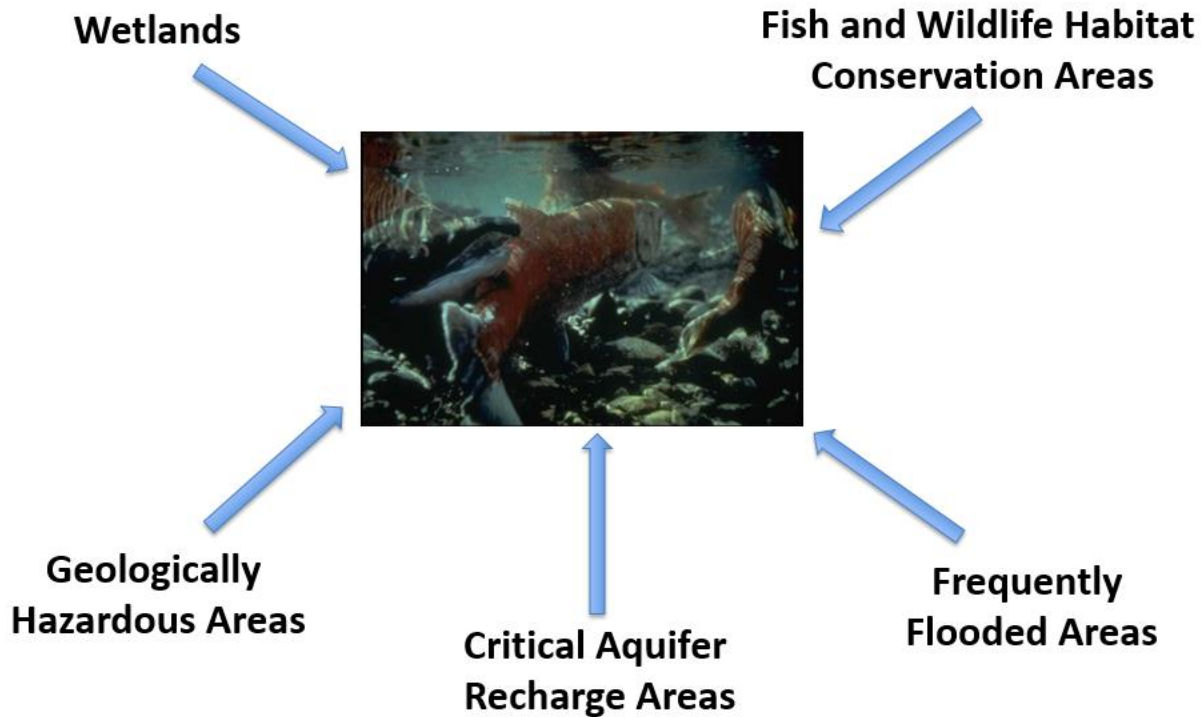
The Board finds that Pierce County's site-by-site assessment of marine shorelines during the permit application process, as established in (the CAO), does not meet the requirement of using best available science to devise regulations protective of the integrated functions and values of marine shorelines as critical salmon habitat.⁸⁰

⁷⁸ *Tahoma Audubon Society, et al v. Pierce County*, 05-3-0004c, FDO July 12, 2005, at 38-40.

⁷⁹ *Id.*, at 40.

⁸⁰ *Id.*, at 40 – 41.

Special Consideration of Anadromous Fisheries in the Context of the Five Types of Critical Areas



Each type of critical area defined under the GMA either provides critical habitat or has the potential for contributing to habitat conditions needed to conserve or protect of anadromous fisheries. For example:

- **Wetlands** and their buffers store floodwater, recharge groundwater, remove pollutants and excess nutrients, and provide habitat for a large number of plants and animals.
- **Fish and wildlife habitat conservation areas**, including wetland buffers and riparian management zones, provide continuous vegetated riparian areas that are key to functioning salmonid habitat.
- **Frequently flooded areas** protection addresses flooding that can directly impact salmonid habitat quality and availability. Restoring floodplain connectivity improves off-channel rearing habitat vital for young salmonids (smolts). Flood control levees often channelize flood flows that can lead to channel erosion and high turbidity from high velocity flows. Floodplains are also hydrologically connected to adjacent streams, rivers, and wetlands. Impervious surface coverage, vegetation removal, and other alterations can affect water quality, stream flows, and other ecosystem functions vital to salmon habitat.

- **Geologically hazardous areas** may affect salmonids in a variety of ways. Steep slopes along shorelines can include feeder bluffs that benefit salmon habitat. While erosion and mass wasting slide events that occur naturally can block streams or overload them with sediment in the short term, the focus should be on maintaining natural sediment loads and ecosystem functions. Seismic events can cause built objects to fall into streams, including pollutants such as chemicals and spilled fuels.
- **Critical aquifer recharge areas** contribute to groundwater quality and in-stream flow. While critical aquifer recharge areas are designated and protected to ensure availability of potable water, the groundwater resource also interacts with streams. Both discharge and recharge areas help to cool summer daytime temperatures and provide year round habitat for invertebrates, and important salmonid food source. Protecting aquifer recharge areas from stormwater pollution helps protect water quality for salmonids.

It should be noted that groundwater falls within the definition of “waters of the state” and must therefore be considered in designating fish and wildlife habitat conservation areas (WAC 365-190-130(2)(f)). Also, the GMA requires that actions be taken to prevent contamination of waters of the state and water flowing into the Puget sound (RCW 36.70A.070(1)). Water quality, water quantity, and water temperature are all related and all vital to supporting anadromous fish habitat.

More detail on how critical area protection can contribute to salmon habitat and opportunities for restoration is addressed under each type of critical area in Chapter 2: Resources for Designating and Protecting Critical Areas and in Chapter 4: Critical Areas Protection and Other Laws and Regulations.

Sources of Best Available Science

Other Washington state natural resource agencies provide sources of best available science, and some provide management recommendations, for protecting critical areas. For links to state agency sources of best available science, see Chapter 2: Resources for Designating and Protecting Critical Areas. Consulting with the local salmon recovery lead entity technical team can provide further guidance on how to address salmon habitat in critical area protection.⁸¹

A Comprehensive Approach to Critical Areas Protection

Each community is encouraged to design a comprehensive program to protect critical areas. More than just a regulatory ordinance, a local program should include land use policies, critical areas regulations, and zoning standards, and may include non-regulatory programs.

⁸¹ See [Governor’s Salmon Recovery Office](#) web site.

Recognizing unique environments and the local values of each community, each local program should be specific to the individual community's needs.

Setting Program Goals and Policies

Consistent with environmental policies adopted in comprehensive plans and county-wide planning policies, a critical areas protection program should establish goals that seek to:

- Protect members of the public and public resources and facilities from injury, loss of life, or property damage due to landslides and steep slope failures, erosion, seismic events, volcanic eruptions, or flooding.
- Maintain healthy, functioning ecosystems through the protection of unique, fragile, and valuable elements of the environment, including ground and surface waters, wetlands, and fish and wildlife and their habitats, and to conserve the biodiversity of plant and animal species.
- Direct activities not dependent on the use of critical areas resources to less ecologically sensitive sites and mitigate unavoidable impacts to critical areas by regulating alterations in and adjacent to critical areas.
- Prevent cumulative adverse environmental impacts to water quality, wetlands, and fish and wildlife habitat, and the overall net loss of the ecological functions of wetlands, frequently flooded areas, and habitat conservation areas.
- Promote the enhancement of ecological processes through conservation and restoration measures.⁸²

These goals may be used both to establish policy support for critical areas regulations and to define the purpose of a critical areas ordinance. Integrating both the environmental policies and regulations within the critical areas regulations will help to maintain consistency between the comprehensive plan and other critical areas program elements.

Environmental Policies

Counties and cities should consider using innovative land management techniques that minimize land use incompatibilities and most effectively maintain critical areas. Techniques to conserve and protect critical areas include the purchase or transfer of development rights, fee simple purchase of the land, less than fee simple purchase, purchase with leaseback, buffering, land trades, conservation easements, or other innovations that maintain current uses and ensure the conservation of these lands.

When considering a community's growth strategy, and when reviewing proposals to change the zoning in an area, cities and counties should use their land use plans to direct growth away

⁸² WAC 365-195-925

from areas that contain large amounts or complex collections of critical areas.⁸³ Areas that are likely to contain large amounts or complex collections of critical areas are expensive and difficult to develop. Counties and cities can use existing data sources to identify areas with a high probability of critical area conflicts.

They are not likely to achieve the densities specified in the underlying zoning. Avoiding increased densities in these areas will keep a community from setting expectations of development that will be difficult and expensive to meet during local project review. In the case of frequently flooded areas, expansion of the urban growth area into the floodplain is prohibited for some jurisdictions.⁸⁴

Regional Planning and Collaboration

Considering that neighboring jurisdictions may be faced with similar circumstances, it may be beneficial for communities to work together to address critical areas protection. Ecosystems do not stop at city and county borders, or tribal trust lands. Most critical areas are part of larger geographical networks, such as rivers, shorelines, and fault lines that extend through multiple jurisdictions. As jurisdictions consider comprehensive approaches and innovative techniques in planning for critical areas, regional collaboration may provide an opportunity to better address and protect critical areas.

Cities are encouraged to coordinate with each other and with their county to share costs and resources to identify and map critical areas, to review the best science that is available and locally applicable, and to draft regulations. Regional agencies or councils of government may help coordinate development of critical area regulations. Including neighboring tribes in technical advisory committees convened for critical areas ordinance updates can be very helpful.

Multiple jurisdictions may also pool resources in non-regulatory programs. For example, purchasing or management of critical areas easements may be infeasible for an individual jurisdiction, but could be accomplished through a consortium of agencies and non-governmental organizations (such as land trusts) combining resources. Partnerships with local land trust organizations has proven helpful in overseeing the successful implementation of landowner conservation easement agreements and other land conservation strategies. An example of this approach is the regional transfer of development rights from counties to cities to conserve natural resources lands.⁸⁵

⁸³ WAC 365-196-485

⁸⁴ RCW 36.70A.110(8)

⁸⁵ [Regional Transfer of Development Rights, http://www.commerce.wa.gov/serving-communities/growth-management/growth-management-topics/development-rights/](http://www.commerce.wa.gov/serving-communities/growth-management/growth-management-topics/development-rights/)

Regional Planning Efforts

Many state and federal laws require planning for particular purposes for areas related by physical features, such as watersheds, rather than by political boundaries. For example, instream resource protection regulations for water resource inventory areas (WRIAs) under the state Water Resources Act, and recovery plans under the federal Endangered Species Act. The environmental and ecological systems addressed in resource management, fish and wildlife management, and pollution control are generally not circumscribed by county and city jurisdictional lines.⁸⁶ Aquifer recharge and geologically hazardous areas are connected to geographic features, and are very likely to extend over jurisdictional boundaries (or even if not, certainly over specific development sites). Counties and cities should attempt to identify these geographic areas that require a regional planning approach and, if needed, work toward creating collaborative processes involving all agencies with jurisdiction in the relevant geographical area.⁸⁷

The [Watershed Planning Act](#)⁸⁸ was established by the State Legislature in 1997 to set a framework for developing local solutions to watershed issues in Washington. Between 1998 and 2012, 44 watershed-based planning groups developed plans and 33 groups adopted their plans. As planning was completed, the effort switched to watershed management. A few of these watershed groups continue to implement priority actions in their plans. Ecology maintains a [Watershed Plan Archive](#)⁸⁹ and Watershed planning/management document links for purposes of compliance with [Engrossed Substitute Senate Bill 6091](#)⁹⁰ regarding water availability, passed by the Legislature and signed into law by the Governor with an effective date of January 19, 2018.

As previously noted, salmon recovery plans have been adopted by regions around the state.⁹¹ And, WDFW's [Land Use Planning for Salmon, Steelhead and Trout](#)⁹² provides guidance for counties and cities to protect and restore salmonid habitat.

Ecology's [Puget Sound Watershed Characterization Project](#)⁹³ is a regional tool that compares areas of the Puget Sound basin in terms of their suitability and value for restoration and protection. The website lets you explore individual watershed in terms of water flow processes, water quality processes, and fish and wildlife habitats.

The Puget Sound Regional Council is developing a [Regional Open Space Conservation Plan](#)⁹⁴ to accelerate the conservation of open space now and into the future. The Regional Open Space Conservation Plan will knit together open space and related plans from four counties, tribes, resource agencies, salmon recovery groups, and other organizations. The plan will identify and elevate these

⁸⁶ WAC 365-196-730 and 735

⁸⁷ WAC 365-196-740

⁸⁸ Chapter 90.82 RCW

⁸⁹ <https://ecology.wa.gov/Water-Shorelines/Water-supply/Streamflow-restoration/Watershed-plan-archive>

⁹⁰ <http://lawfilesexternal.wa.gov/biennium/2017-18/Pdf/Bills/Session%20Laws/Senate/6091-S.SL.pdf?page=1>

⁹¹ [Regional Salmon Recovery Organizations](#),

https://www.rco.wa.gov/salmon_recovery/regions/regional_orgs.shtml

⁹² <https://wdfw.wa.gov/publications/00033/>

⁹³ <https://fortress.wa.gov/ecy/coastalatlus/wc/landingpage.html>

⁹⁴ <https://www.psrc.org/our-work/regional-open-space-conservation-plan>

open space needs to attract funding and support. The draft plan was released January 2018 for board review. The final plan will be completed by summer 2018.

Growth Management Hearings Board Decisions Regarding an Ecosystem Approach

RCW 36.70A.030(5) defines “critical areas” to include “areas and ecosystems”. Recent Growth Management Hearings Board decisions have required an ecosystem approach to protecting critical areas based on this definition. An ecosystem approach suggests that counties and cities should be collaborating to protect critical areas at a regional level.

The Western Washington Growth Management Hearings Board found that the GMA required Island County to protect the functions and values of critical areas ecosystems. The Board stated:

An ecosystem consists of all the organisms that live in a particular area along with physical components of the environment with which those organisms interact. There must be an appropriate mixture of plants, animals, and microbes if the ecosystem is to function. . . . So complete is the interconnectedness of the various living and nonliving components of the ecosystem that a change in any one will result in a subsequent change in almost all the others.⁹⁵

The Central Puget Sound Growth Management Hearings Board also found that, under the statutory definition, counties and cities must protect “areas and ecosystems”. The Board stated that development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas.⁹⁶

⁹⁵ *Whidbey Environmental Action Network v. Island County*, 14-2-0009, Final Decision and Order (June 26, 2015), at 21.

⁹⁶ *Ann Aagaard, Judy Fisher, Bob Fisher, Glen Conley, and Save a Valuable Environment (SAVE) v. City of Bothell*, 15-3-0001, Final Decision and Order (July 21, 2015), at 23; see also Raymond Paollela, at 35-41.

Summary of Critical Areas WAC Amendments

December 2018

This table provides information on the more substantive amendments and their effective dates to the Commerce Washington Administrative Code (WAC) chapters applicable to critical areas since their adoption. Some minor amendments to wording are not included. Commerce staff compiled this table. For the 2010 official revisions summary, go to the Code Reviser web site at <http://lawfilesext.leg.wa.gov/law/wsr/2010/03/10-03-085.htm>.

Effective Dates of WAC Amendments

WAC Chapter Provision - Description of Amendment	Effective Date
Chapter 365-190 WAC Minimum Guidelines to Classify Agriculture, Forest, Mineral Lands and Critical Areas	Original adoption 4/15/91
<p>365-190-030 Definitions</p> <p>(5) "<u>Erosion hazard areas</u>" are those areas containing soils which, according to the United States Department of Agriculture ((Soil)) <u>Natural Resources Conservation Service Soil ((Classification System)) Survey Program</u>, may experience ((severe to very severe)) <u>significant erosion</u>. <u>Erosion hazard areas also include coastal erosion-prone areas and channel migration zones.</u></p> <p>(6)(a) "<u>Fish and wildlife habitat conservation areas</u>" are areas that serve a critical role in sustaining <u>needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness. Counties and cities may also designate locally important habitats and species.</u></p> <p>(b) "<u>Habitats of local importance</u>" designated as fish and wildlife habitat conservation areas include those areas found to be locally important by <u>counties and cities.</u></p> <p>((7)) (8) "<u>Frequently flooded areas</u>" are lands in the flood plain subject to <u>at least</u> a one percent or greater chance of flooding in any given year, <u>or within areas subject to flooding due to high ground water.</u> These areas include, but are not limited to, streams, rivers, lakes, coastal areas, wetlands, and ((the like)) <u>areas where high ground water forms ponds on the ground surface.</u></p> <p>(10) "<u>Landslide hazard areas</u>" are areas ((potentially subject to)) <u>at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors.</u></p>	1/19/2010

<p>(18) "<u>Seismic hazard areas</u>" are areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement, ((or)) soil liquefaction, <u>debris flows, lahars, or tsunamis</u>.</p> <p>(19) "<u>Species of local importance</u>" are those species that are of local concern due to their population status or their sensitivity to habitat ((manipulation)) <u>alteration</u> or that are game species.</p> <p>(21) "<u>Volcanic hazard areas</u>" shall include areas subject to pyroclastic flows, lava flows, and inundation by debris flows, <u>lahars, mudflows, or</u> related flooding resulting from volcanic activity.</p> <p>(22) "<u>Wetland</u>" or "<u>wetlands</u>" means areas that ..., <u>or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway</u>. However, wetlands may include those artificial wetlands intentionally created from nonwetland areas ((created)) to mitigate conversion of wetlands, if permitted by the county or city.</p>	
<p>365-190-030 Definitions – Fish and Wildlife Habitat Conservation Areas</p> <p>(6)(c): "Fish and wildlife habitat conservation areas" amended to reflect statutory amendment in 2012 to RCW 36.70A.030 to "not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of, and are maintained by, a port district or an irrigation district or company."</p>	1/27/15
<p>365-190-040 Process</p> <p>Amendments to (1) and (2) recognized counties and cities have adopted their initial critical areas regulations under the GMA.</p> <p>(4) Classification of critical areas - the "natural heritage program" was added to the state agency classification system in 4(b), formerly 4(c).</p> <p>(6) "Classifying, inventorying, and designating lands does not imply a change in a landowner's right to use his or her land under current law. <u>The law requires that natural resource land uses be protected from land uses on adjacent lands that would restrict resource production. Development regulations adopted to protect critical areas may limit some land development options....</u>"</p> <p>(7) <u>Overlapping designations. The designation process may result in critical area designations that overlay other critical area or natural resource land classifications. ((That is,)) Overlapping designations should not necessarily be considered inconsistent.</u> If two or more critical area designations apply to a given parcel, or portion of a given parcel, both or all designations apply.</p> <p><u>If a critical area designation overlies a natural resource land designation, both designations apply.</u> For counties and cities required or opting to plan under ((chapter 36.70A RCW)) <u>the act</u>, reconciling these multiple designations will be the subject of local development regulations adopted pursuant to <u>RCW 36.70A.060</u>.</p> <p>(8) Counties and cities ((shall)) <u>must</u> involve the public in classifying and designating natural resource lands and critical areas. <u>The process should include:</u></p> <p>Public participation <u>program</u>:</p> <p>Public participation should include, at a minimum, <u>representative participation from the following entities</u>: Landowners; representatives of agriculture, forestry, mining, business, environmental, and community groups; tribal governments; representatives of adjacent counties and</p>	1/19/2010

<p>cities; and state agencies. The public participation program should include early and timely public notice of pending designations and regulations and should address proposed nonregulatory incentive programs.</p> <p>Counties and cities ((should)) <u>are encouraged to consider</u> (((using: Technical and citizen advisory committees with broad representation, press-releases, news conferences, neighborhood meetings, paid advertising (e.g., newspaper, radio, T.V., transit), newsletters, and other means beyond the required normal legal advertising and public notices. Plain, understandable language should be used))) <u>a variety of opportunities to adequately communicate with the public. These methods of notification may include, but are not limited to, traditional forms of mailed notices, published announcements, electronic mail, and internet sites to distribute informational brochures, meeting times, project timelines, and design and map proposals to provide an opportunity for the public to participate.</u></p> <p>The department (((of community development will))) <u>provides technical assistance in preparing public participation</u> (((plans, including: A pamphlet series, workshops, and a list of agencies available to provide help))) <u>programs.</u></p> <p>Adoption process. Statutory and local processes already in place governing land use decisions are the minimum processes required for designation and regulation pursuant to RCW 36.70A.060 and 36.70A.170. At (((least these))) <u>a minimum the following steps should be included in the adoption process:</u></p> <p>Accept the requirements of chapter 36.70A RCW (((, especially definitions of agricultural lands, forest lands, minerals, long-term commercial significance, critical areas, geologically hazardous areas, and wetlands as mandatory minimums:)));</p> <ul style="list-style-type: none"> (ii) Consider minimum guidelines developed by <u>the department</u> (((of community development))) under RCW 36.70A.050 ((-)); (iii) Consider other definitions used by state and federal regulatory agencies ((-)); (iv) Consider definitions used by (((the county and city and other))) <u>similarly situated counties and cities</u> ((-)); (v) Determine recommended definitions and check conformance with minimum definitions (((of))) <u>in chapter 36.70A RCW</u> ((-)); (vi) Adopt definitions, classifications, and standards ((-)); (vii) Apply definitions (((to the land))) <u>by mapping designated natural resource lands</u> ((-)); <u>and</u> (viii) Establish (((designation amendment))) <u>procedures for amending natural resource lands and critical areas designations.</u> 	
<p>365-190-080 Critical Areas - Replaced this section that addressed all five types of critical areas with provisions that apply generally to all critical areas:</p> <p><u>(1) Counties and cities must protect critical areas. Counties and cities required or opting to plan under the act must consider the definitions and guidelines in this chapter when designating critical areas and when preparing development regulations that protect the function and values of critical areas. The department provides additional recommendations for adopting critical areas regulations in WAC 365-196-485.</u></p> <p><u>(2) Counties and cities must include the best available science as described in chapter 365-195 WAC, when designating critical areas and when developing policies and regulations that protect critical areas. Counties and cities must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. Counties and cities are encouraged to also protect both surface and ground water resources, because these waters often recharge wetlands, streams and lakes.</u></p>	1/19/2010

<p><u>(3) Counties and cities are encouraged to develop a coordinated regional critical areas protection program that combines interjurisdictional cooperation, public education, incentives to promote voluntary protective measures, and regulatory standards that serve to protect these critical areas.</u></p> <p><u>(4) Counties and cities should designate critical areas by using maps and performance standards.</u></p> <p><u>(a) Maps may benefit the public by increasing public awareness of critical areas and their locations. County and city staff may also benefit from maps which provide a useful tool for determining whether a particular land use permit application may affect a critical area. However, because maps may be too inexact for regulatory purposes, counties and cities should rely primarily on performance standards to protect critical areas. Counties and cities should apply performance standards to protect critical areas when a land use permit decision is made.</u></p> <p><u>(b) Counties and cities should clearly state that maps showing known critical areas are only for information or illustrative purposes.</u></p> <p>Guidance for each of the five types of critical areas were moved and reorganized into five new separate sections for each critical area, 090 – 130.</p>	
<p>365-190-090 Wetlands – a new section was created that includes the text about wetlands from former WAC 365-190-080, with revisions:</p> <p>(1) Wetlands. The wetlands of Washington state are fragile ecosystems that which serve a number of important beneficial functions. Wetlands assist in the reduction of erosion, siltation, flooding, ground and surface water pollution, and provide wildlife, plant, and fisheries habitats. Wetlands destruction or impairment may result in increased public and private costs or property losses.</p> <p>(2) In designating wetlands for regulatory purposes, counties and cities shall use the definition of wetlands in RCW 36.70A.030(22). Counties and cities are requested and encouraged to make their actions consistent with the intent and goals of "protection of wetlands," Executive Orders 89-10 and 90-04 as they exist on September 1, 1990. Additionally, counties and cities should consider wetlands protection guidance provided by the department of ecology including the model wetlands protection ordinance.</p> <p>—(a) Counties and cities that do not now rate wetlands shall consider a wetlands rating system to reflect the relative function, value and uniqueness of wetlands in their jurisdictions. In developing wetlands rating systems, counties and cities should consider the following:</p> <ul style="list-style-type: none"> —(i) The Washington state four-tier wetlands rating system; —(ii) Wetlands functions and values; —(iii) Degree of sensitivity to disturbance; —(iv) Rarity; and —(v) Ability to compensate for destruction or degradation. <p>—If a county or city chooses to not use the state four-tier wetlands rating system, the rationale for that decision must be included in its next annual report to department of community development.</p> <p><u>(3) Wetlands rating systems. Wetland functions vary widely.</u></p>	<p>1/19/2010</p>

<p><u>(a) When designating wetlands, counties and cities should use a rating system that evaluates the existing wetland functions and values to determine what functions must be protected.</u></p> <p><u>(b) In developing wetlands rating systems, counties and cities should consider using the wetland rating system developed jointly by the department of ecology and the United States Army Corps of Engineers.</u></p> <p><u>(c) If a county or city chooses to use an alternative rating system, it must include the best available science.</u></p> <p><u>(d) A rating system should evaluate, at a minimum, the following factors:</u></p> <ul style="list-style-type: none"> <u>(i) Wetlands functions and values;</u> <u>(ii) Degree of sensitivity to disturbance;</u> <u>(iii) Rarity;</u> <u>(iv) The degree to which a wetland contributes to functions and values of a larger ecosystem. Rating systems should generally rate wetlands higher when they are well-connected to adjacent or nearby habitats, are part of an intact ecosystem or function in a network of critical areas; and</u> <u>(v) The ability to replace the functions and values through compensatory mitigation.</u> <p>(4b) <u>Counties and cities may use the National Wetlands Inventory and a landscape-scale watershed characterization as information sources as an information source for determining the approximate distribution and extent of wetlands. The National Wetlands Inventory is an This inventory providing maps of wetland areas according to the definition of wetlands issued by the United States Department of Interior - Fish and Wildlife Service. A landscape-scale watershed characterization may identify areas that are conducive to forming wetlands based on topography, soils and geology, and hydrology. Any potential locations of wetlands based on the National Wetlands Inventory or landscape-scale watershed characterization should be confirmed by field visits, either before or as part of permitting activities, and identified wetlands should have their boundaries, and its wetland boundaries should be delineated for regulation consistent with the wetlands definition in RCW 36.70A.030(22).</u></p> <p>(5e) <u>Counties and cities must use the methodology for regulatory delineations in the adopted state manual identified in RCW 36.70A.175. should consider using the methodology in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands, cooperatively produced by the United States Army Corps of Engineers, United States Environmental Protection Agency, United States Department of Agriculture Soil Conservation Service, and United States Fish and Wildlife Service, that was issued in January 1989, and regulatory guidance letter 90-7 issued by the United States Corps of Engineers on November 29, 1990, for regulatory delineations.</u></p>	
<p>365-190-100 Critical aquifer recharge area (CARA) – a new section was created that includes the text about CARAs from former WAC 365-190-080, with the following revisions:</p> <p>... (3) Counties and cities must classify recharge areas for aquifers according to the aquifer vulnerability. Vulnerability is the combined effect of hydrogeological susceptibility to contamination and the contamination loading potential. High vulnerability is indicated by land uses that contribute directly or indirectly to contamination that may degrade ground water, and hydrogeologic conditions that facilitate degradation. Low vulnerability is indicated by land uses that do not contribute contaminants that will degrade ground water, and by hydrogeologic conditions that</p>	1/19/2010

do not facilitate degradation. Hydrological conditions may include those induced by limited recharge of an aquifer. Reduced aquifer recharge from effective impervious surfaces may result in higher concentrations of contaminants than would otherwise occur.

...(b) The following may be considered to evaluate vulnerability based on the contaminant loading potential:

- (i) General land use;
- (ii) Waste disposal sites;
- (iii) Agriculture activities;
- (iv) Well logs and water quality test results;
- (v) Proximity to marine shorelines; and
- (vi) Other information about the potential for contamination.

(4) A classification strategy for aquifer recharge areas should be to maintain the quality, and if needed, the quantity of the ground water, with particular attention to recharge areas of high susceptibility.

(a) In recharge areas that are highly vulnerable, studies should be initiated to determine if ground water contamination has occurred. Classification of these areas should include consideration of the degree to which the aquifer is used as a potable water source, feasibility of protective measures to preclude further degradation, availability of treatment measures to maintain potability, and availability of alternative potable water sources.

(b) Examples of areas with a critical recharging effect on aquifers used for potable water may include:

- (i) Recharge areas for sole source aquifers designated pursuant to the Federal Safe Drinking Water Act;
- (ii) Areas established for special protection pursuant to a ground water management program, chapters 90.44, 90.48, and 90.54 RCW, and chapters 173-100 and 173-200 WAC;
- (iii) Areas designated for wellhead protection pursuant to the Federal Safe Drinking Water Act;
- (iv) Areas near marine waters where aquifers may be subject to saltwater intrusion; and
- (v) Other areas meeting the definition of "areas with a critical recharging effect on aquifers used for potable water" in these guidelines.
- (c) Some aquifers may also have critical recharging effects on streams, lakes, and wetlands that provide critical fish and wildlife habitat. Protecting adequate recharge of these aquifers may provide additional benefits in maintaining fish and wildlife habitat conservation areas.

365-190-110 Frequently flooded areas— a new section was created that includes the text about frequently flooded areas from former WAC 365-190-080, with the following revisions.

(2) Counties and cities should consider the following when designating and classifying frequently flooded areas:

1/19/2010

<p>(a) Effects of flooding on human health and safety, and to public facilities and services;</p> <p>(b) Available documentation including federal, state, and local laws, regulations, and programs, local studies and maps, and federal flood insurance programs, <u>including the provisions for urban growth areas in RCW 36.70A.110</u>;</p> <p>(c) The future flow flood plain, defined as the channel of the stream and that portion of the adjoining flood plain that is necessary to contain and discharge the base flood flow at build out without any measurable increase in flood heights;</p> <p>(d) The potential effects of tsunami, high tides with strong winds, sea level rise, <u>and extreme weather events, including those potentially resulting from global climate change</u>;</p> <p>(e) Greater surface runoff caused by increasing impervious surfaces.</p>	
<p>365-190-120 Geologically hazardous areas – a new section was created that includes the text about geologically hazardous areas from former WAC 365-190-080, with the following revisions.</p> <p>(2) Some geological hazards can be reduced or mitigated by engineering, design, or modified construction or mining practices so that risks to public health and safety are <u>minimized acceptable</u>. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas <u>must be is best-avoided</u>. The distinction <u>between avoidance and compensatory mitigation</u> should be considered by counties and cities that <u>do not currently do not now</u> classify geological hazards, as they develop their classification scheme. <u>(5) Erosion hazard areas include areas likely to become unstable, such as bluffs, steep slopes, and areas with unconsolidated soils. Erosion hazard areas may also include coastal erosion areas: This information can be found in the Washington state coastal atlas available from the department of ecology. Counties and cities may consult with the United States Department of Agriculture Natural Resources Conservation Service for data to help identify erosion hazard areas.</u></p> <p>(6) Landslide hazard areas shall include areas potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. They include any areas susceptible <u>to landslide</u> because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other factors. Example of these may include, but are not limited to, and include, at a minimum, <u>and include, at a minimum,</u> the following:</p> <p>(a) Areas of historic failures, such as:</p> <p>(i) Those areas delineated by the United States Department of Agriculture Soil <u>Natural Resources</u> Conservation Service as having a <u>“severe” significant</u> limitation for building site development;</p> <p>(ii) Those <u>coastal</u> areas mapped as class u (unstable), uos (unstable old slides), and urs (unstable recent slides) in the department of ecology <u>Washington coastal zone</u>-atlas; or...</p> <p>(f) Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action, <u>including stream channel migration zones</u>;...</p> <p>(h) Areas located in a canyon or on an active alluvial fan, presently or potentially subject to inundation by debris flows or catastrophic flooding; and</p>	1/19/2010

<p>(i) Any area with a slope of forty percent or steeper and with a vertical relief of ten or more feet except areas composed of consolidated rock bedrock. A slope is delineated by establishing its toe and top and measured by averaging the inclination over at least ten feet of vertical relief.</p> <p>(7) Seismic hazard areas shall<u>must</u> include areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement <u>or subsidence</u>, soil liquefaction, surface faulting, <u>or tsunamis</u>. <u>Settlement and soil liquefaction conditions occur in areas underlain by cohesionless soils of low density, typically in association with a shallow ground water table.</u> One indicator of potential for future earthquake damage is a record of earthquake damage in the past. Ground shaking is the primary cause of earthquake damage in Washington, <u>and ground settlement may occur with shaking.</u> The strength of ground shaking is primarily affected by:...</p> <p>(8) Other geological events<u>hazard areas</u>:</p> <p>(a) Volcanic hazard areas shall<u>must</u> include areas subject to pyroclastic flows, lava flows, debris avalanche, or inundation by debris flows, lahars, mudflows, or related flooding resulting from volcanic activity....</p>	
<p>365-190-130 Fish and wildlife habitat conservation areas - a new section was created that includes the text about fish and wildlife habitat conservation areas from former WAC 365-190-080, with the following revisions.</p> <p>(5) Fish and wildlife habitat conservation areas. Fish and wildlife habitat conservation means land management for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean cooperative and coordinated land use planning is critically important among counties and cities in a region. In some cases, intergovernmental cooperation and coordination may show that it is sufficient to assure that a species will usually be found in certain regions across the state.</p> <p><u>(1) "Fish and wildlife habitat conservation" means land management for maintaining populations of species in suitable habitats within their natural geographic distribution so that the habitat available is sufficient to support viable populations over the long term and isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term. Counties and cities should engage in cooperative planning and coordination to help assure long term population viability.</u></p> <p><u>Fish and wildlife habitat conservation areas contribute to the state's biodiversity and occur on both publicly and privately owned lands. Designating these areas is an important part of land use planning for appropriate development densities, urban growth area boundaries, open space corridors, and incentive-based land conservation and stewardship programs.</u></p> <p><u>(2) Fish and wildlife habitat conservation areas that must be considered for classification and designation include:</u></p> <ul style="list-style-type: none"> (a) Areas with which<u>where</u> endangered, threatened, and sensitive species have a primary association; (b) Habitats and species of local importance, <u>as determined locally</u>; (c) Commercial and recreational shellfish areas; (d) Kelp and eelgrass beds; herring, smelt, and <u>other forage fish</u> spawning areas; (e) Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat; 	1/19/2010

(f) Waters of the state;

(g) Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; and

(h) State natural area preserves, natural resource conservation areas, and state wildlife areas.

~~(3) Counties and cities may consider the following when classifying and designating these areas:~~ When classifying and designating these areas, counties and cities must include the best available science, as described in [chapter 365-195 WAC.](#)

(a) Counties and cities should consider the following:

(i) Creating a system of fish and wildlife habitat with connections between larger habitat blocks and open spaces, integrating with open space corridor planning where appropriate:

(ii) Level of human activity in such areas including presence of roads and level of recreation type (passive or active recreation may be appropriate for certain areas and habitats);

(iii) Protecting riparian ecosystems including salmonid habitat, which also includes marine nearshore areas;

(iv) Evaluating land uses surrounding ponds and fish and wildlife habitat conservation areas that may negatively impact these areas, or conversely, that may contribute positively to their function;

(v) Establishing buffer zones around these areas to separate incompatible uses from habitat areas;

(b) Counties and cities may also consider the following:

(i) Potential for restoring lost and impaired salmonid habitat;

(ii) Potential for designating areas important for local and ecoregional biodiversity; and

(iii) Establishing or enhancing nonregulatory approaches in addition to regulatory methods to protect fish and wildlife habitat conservation areas.

(4) Sources and methods.

~~(i) Counties and cities should classify seasonal ranges and habitat elements with which federal and state listed endangered, threatened and sensitive species have a primary association and which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long term.~~

~~(ii) Counties and cities should determine which habitats and species are of local importance. Habitats and species may be further classified in terms of their relative importance.~~

(a) Endangered, threatened and sensitive species. Counties and cities should identify and classify seasonal ranges and habitat elements where federal and state listed endangered, threatened and sensitive species have a primary association and which, if altered, may reduce the likelihood that the species will persist over the long term. Counties and cities should consult current information on priority habitats and species identified by the Washington state department of fish and wildlife. Recovery plans and management recommendations for many of these species are available from the United States Fish and Wildlife Service, the National Marine Fisheries Service and the Washington state department of fish and

wildlife. Additional information is also available from the Washington state department of natural resources, natural heritage program, and aquatic resources program.

~~Counties and cities may use information prepared by the Washington department of wildlife to classify and designate locally important habitats and species. Priority habitats and priority species are being identified by the department of wildlife for all lands in Washington state. While these priorities are those of the department, they and the data on which they are based may be considered by counties and cities.~~

(b) Habitats and species areas of local importance. Counties and cities should identify, classify and designate locally important habitats and species. Counties and cities should consult current information on priority habitats and species identified by the Washington state department of fish and wildlife. Priority habitat and species information includes endangered, threatened and sensitive species, but also includes candidate species and other vulnerable and unique species and habitats. While these priorities are those of the Washington state department of fish and wildlife, they should be considered by counties and cities as they include the best available science. The Washington state department of fish and wildlife can also provide assistance with identifying and mapping important habitat areas at various landscape scales. Similarly, the Washington state department of natural resources' natural heritage program can provide a list of high quality ecological communities and systems and rare plants.

...

(d) Kelp and eelgrass beds; herring, smelt and other forage fish spawning areas. Counties and cities ~~shall~~must classify kelp and eelgrass beds, identified by the Washington state department of natural resources and the department of ecology. Though not an inclusive inventory, locations of kelp and eelgrass beds are compiled in the *Puget Sound Environmental Atlas, Volumes 1 and 2* Washington coastal atlas published by the department of ecology. Herring, smelt and other forage fish spawning times and locations are outlined in WAC 220-110-240 through 220-110-260271 and the *Puget Sound Environmental Atlas*.

...

(f) Waters of the state.

(i) Waters of the state are defined in ~~Title 222 WAC~~RCW 90.48.020 and include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses in Washington. Stream types are classified in TITLE 222 WAC, the forest practices regulations. Counties and cities ~~should~~may use the classification system established in WAC 222-16-030 to classify waters of the state. Counties and cities using the water types defined in WAC 222-16-030 or 222-16-031 (interim) should not rely solely on Washington state department of natural resources maps of these stream types for purposes of regulating land uses or establishing stream buffers.

(ii) Counties and cities that use the stream typing system developed by the department of natural resources should develop a process to verify actual stream conditions, identify flow alterations, and locate fish passage barriers by conducting a field visit. Field verification of all intermittent or nonfish bearing streams should occur during the wet season months of October to March or as determined locally.

(iii) Counties and cities may consider the following factors when classifying waters of the state as fish and wildlife habitat conservation areas:

(A) Species present which are endangered, threatened or sensitive, and other species of concern;

(B) Species present which are sensitive to habitat manipulation (e.g., priority habitats and species program);

(C) Historic presence of species of local ~~concern~~ importance;

(D) Existing surrounding land uses that are incompatible with salmonid habitat;

(E) Presence and size of riparian ecosystems;

(F) Existing water rights; and

(G) The intermittent nature of some ~~of the higher classes of~~ waters of the state.

(g) Lakes, ponds, streams, and rivers planted with game fish. This includes game fish planted in these water bodies under the auspices of a federal, state, local, or tribal program or which supports priority fish species as identified by the Washington state department of fish and wildlife.

(h) State natural area preserves, natural resource conservation areas, and state wildlife areas. Natural area preserves and natural resource conservation areas are defined, established, and managed by the department of natural resources. State wildlife areas are defined, established, and managed by the Washington state department of fish and wildlife, which provides information about state wildlife areas for each county.

(i) Salmonid habitat. Counties and cities should consider recommendations found in salmon recovery plans (see the governor's salmon recovery office). Counties and cities may use information prepared by the United States Department of the Interior Fish and Wildlife Service, National Marine Fisheries Service, the Washington state department of fish and wildlife, the state recreation and conservation office, and the Puget Sound partnership to designate, protect and restore salmonid habitat.

Chapter 365-195 WAC Best Available Science	Original Adoption 2000
365-195-900 Background and purpose – no amendments	
365-195-905 Criteria for determining which information is the “best available science” – no amendments	
365-195-910 Criteria for obtaining the best available science – no amendments	
365-195-915 Criteria for including the best available science in developing policies and development regulations – no amendments	
365-195-920 Criteria for addressing inadequate scientific information – no amendments	
365-195-925 Criteria for demonstrating “special consideration” has been given to conservation or protection measures necessary to preserve or enhance anadromous fisheries – no amendments	
Chapter 365-196 WAC Procedural Criteria for Adopting Comprehensive Plans and Development Regulations (Formerly Chapter 365-195, reorganized and adopted in a new Procedural Criteria chapter in 2010)	Original Adoption 1991
<p>365-196-485 Critical Areas -formerly 365-195-410, this section addressed original critical areas designation and ordinances prior to adoption of the comprehensive plan. In 2010, the previous section was repealed and a new section adopted that addresses critical areas that recognizes all cities and counties have designated critical areas and adopted ordinances. The previous section is no longer relevant and therefore not provided here.</p> <p><u>New Section</u></p> <p>(1) Relationship to the comprehensive plan.</p> <p>(a) The act requires that the planning goals in RCW 36.70A.020 guide the development and adoption of comprehensive plans and development regulations. These goals include retaining open space; enhancing recreation opportunities; conserving fish and wildlife habitat; protecting the environment and enhancing the state's high quality of life, including air and water quality, and the availability of water.</p> <p>(b) Jurisdictions are required to include the best available science in developing policies and development regulations to protect the functions and values of critical areas.</p> <p>(c) Counties and cities are required to identify open space corridors within and between urban growth areas for multiple purposes, including those areas needed as critical habitat by wildlife.</p> <p>(d) RCW 36.70A.070(1) requires counties and cities to provide for protection of the quality and quantity of ground water used for public water supplies in the land use element. Where applicable, the land use element must review drainage, flooding, and storm water runoff in the area and in nearby jurisdictions, and provide guidance to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound.</p>	2/19/2010

(e) Because the critical areas regulations must be consistent with the comprehensive plan, each comprehensive plan should set forth the underlying policies for the jurisdiction's critical areas program.

(f) In pursuing the environmental protection and open space goals of the act, such policies should identify nonregulatory measures for protecting critical areas as well as regulatory approaches. Nonregulatory measures include but are not limited to: Incentives, public education, and public recognition, and could include innovative programs such as the purchase or transfer of development rights. When such policies are incorporated into the plan (either in a separate element or as a part of the land use element), the consistency of the regulations can be readily assessed.

(2) Requirements. Prior to the original development of comprehensive plans under the act, counties and cities were required to designate critical areas and adopt development regulations protecting them. Any previous designations and regulations must be reviewed in the comprehensive plan process to ensure consistency between previous designations and the comprehensive plan. Critical areas include the following areas and ecosystems:

- (a) Wetlands;
- (b) Areas of critical recharging effect on aquifers used for potable water;
- (c) Fish and wildlife habitat conservation areas;
- (d) Frequently flooded areas; and
- (e) Geologically hazardous areas.

(3) Recommendations for meeting requirements.

(a) In the initial period following adoption of the act, much of the analysis which was the basis for the comprehensive plan came later than the initial identification and regulation of critical areas. Upon the adoption of the initial comprehensive plans, such designations and regulations were to be reviewed and, where necessary, altered to achieve consistency with the comprehensive plan. Subsequently, jurisdictions updating local critical areas ordinances are required to include the best available science.

(b) The department has issued guidelines for the classification and designation of critical areas which are contained in [chapter 365-190WAC](#).

(c) Critical areas should be designated and protected wherever the applicable environmental conditions exist, whether within or outside of urban growth areas. Critical areas may overlap each other, and requirements to protect critical areas apply in addition to the requirements of the underlying zoning.

(d) The review of existing designations during the comprehensive plan adoption process should, in most cases, be limited to the question of consistency with the comprehensive plan, rather than a revisiting of the entire prior designation and regulation process. However, counties and cities must address the requirements to include the best available science in developing policies and development regulations to protect the functions and values of critical areas, and give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. To the extent that new information is available or errors have been discovered, the review process should take this information into account.

<p>(e) The department recommends that planning jurisdictions identify the policies by which decisions are made on when and how regulations will be used and when and how other means will be employed (purchases, development rights, etc.). See WAC 365-196-855.</p> <p>(4) Avoiding impacts through appropriate land use designations.</p> <p>(a) Many existing data sources can identify, in advance of the development review process, the likely presence of critical areas. When developing and reviewing the comprehensive plan and future land use designations, counties and cities should use available information to avoid directing new growth to areas with a high probability of conflicts between new development and protecting critical areas. Identifying areas with a high probability of critical areas conflicts can help identify lands that are likely to be unsuitable for development and help a county or city better provide sufficient capacity of land that is suitable for development as required by RCW 36.70A.115. Impacts to these areas could be minimized through measures such as green infrastructure planning, open space acquisition, open space zoning, and the purchase or transfer of development rights.</p> <p>(b) When considering expanding the urban growth area, counties and cities should avoid including lands that contain large amounts of mapped critical areas. Counties and cities should not designate new urban areas within the one hundred year flood plain unless no other alternatives exist, and if included, impacts on the flood plain must be mitigated, including the provisions in RCW 36.70A.110(8).</p> <p>(c) If critical areas are included in urban growth areas, they still must be designated and protected. See WAC365-196-310.</p>	
<p>365-196-485 Critical Areas – further amended as follows.</p> <p>(4) Avoiding impacts through appropriate land use designations.</p> <p>(b) When considering expanding the urban growth area, counties and cities should avoid including lands that contain large amounts of mapped critical areas. Counties and cities should not designate new urban areas within the one hundred-year flood plain unless no other alternatives exist, and if included, impacts on the flood plain must be mitigated((, including the provisions in RCW 36.70A.110(8))). <u>RCW 36.70.110(8) prohibits expansion of the urban growth area into the one hundred-year flood plain in some cases. See WAC 365-196-310.</u></p>	12/3/2010

WAC 365-196-830 - Protection of critical areas.

2/19/2010

New Section

(1) The act requires the designation of critical areas and the adoption of regulations for the protection of such areas by all counties and cities, including those that do not plan under RCW 36.70A.040. The department has adopted minimum guidelines in chapter 365-190 WAC detailing the process involved in establishing a program to protect critical areas.

(2) Critical areas that must be protected include the following areas and ecosystems:

- (a) Wetlands;
- (b) Areas of critical recharging effect on aquifers used for potable water;
- (c) Fish and wildlife habitat conservation areas;
- (d) Frequently flooded areas; and
- (e) Geologically hazardous areas.

(3) "Protection" in this context means preservation of the functions and values of the natural environment, or to safeguard the public from hazards to health and safety.

(4) Although counties and cities may protect critical areas in different ways or may allow some localized impacts to critical areas, or even the potential loss of some critical areas, development regulations must preserve the existing functions and values of critical areas. If development regulations allow harm to critical areas, they must require compensatory mitigation of the harm. Development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas.

(5) Counties and cities must include the best available science in developing policies and development regulations to protect functions and values of critical areas. See chapter 365-195 WAC.

(6) Functions and values must be evaluated at a scale appropriate to the function being evaluated. Functions are the conditions and processes that support the ecosystem. Conditions and processes operate on varying geographic scales ranging from site-specific to watershed and even regional scales. Some critical areas, such as wetlands and fish and wildlife habitat conservation areas, may constitute ecosystems or parts of ecosystems that transcend the boundaries of individual parcels and jurisdictions, so that protection of their function, and values should be considered on a larger scale.

<p>(7) Protecting some critical areas may require using both regulatory and nonregulatory measures. When impacts to critical areas are from development beyond jurisdictional control, counties and cities are encouraged to use regional approaches to protect functions and values. It is especially important to use a regional approach when giving special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. Conservation and protection measures may address land uses on any lands within a jurisdiction, and not only lands with designated critical areas.</p> <p>(8) Local government may develop and implement alternative means of protecting critical areas from some activities using best management practices or a combination of regulatory and nonregulatory programs. When developing alternative means of protection, counties and cities must assure no net loss of functions and values and must include the best available science.</p> <p>(a) When developing alternative means of protection, counties and cities must assure no net loss of functions and values and must include the best available science.</p> <p>(b) Local governments must review and, if needed, revise their development regulations to assure the protection of critical areas where agricultural activities take place.</p> <p>(c) Local governments shall not broadly exempt agricultural activities from their critical areas regulations.</p> <p>(d) Counties participating in the voluntary stewardship program must review and, if needed, revise their development regulations not governed by the voluntary stewardship program, except as provided in RCW 36.70A.130(8).</p> <p>(9) In designing development regulations and nonregulatory programs to protect designated critical areas, counties and cities should endeavor to make such regulations and programs fit together with regional, state and federal programs directed to the same environmental, health, safety and welfare ends. Local plans and policies may in some respects be adequately implemented by adopting the provisions of such other programs as part of the local regulations.</p>	<p>2/19/2010</p> <p>11/14/17 (8 a-d)</p>
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WAC 365-196-832 - Protection of critical areas and voluntary stewardship program.

11/14/17

New Section

(1) Upon approval of a watershed work plan, counties participating in the voluntary stewardship program pursuant to RCW [36.70A.710](#) are encouraged to reference and describe their participation in the program within their critical areas development regulations. Counties should ensure their development regulations are consistent with the approved watershed work plan.

(2) Prior to the approval of a work plan by the state conservation commission director, agricultural activities located in participating watersheds as defined in RCW [36.70A.703](#)(5) are subject to existing development regulations that protect critical areas.

(3) After watershed work plan approval, protection of functions and values of critical areas from agricultural activities located in participating watersheds as defined in RCW [36.70A.703](#)(5) is provided by the watershed work plan and any applicable development regulations. Agricultural activities located in nonparticipating watersheds are subject to applicable development regulations that protect critical areas.

(4) **County responsibilities when withdrawing from the voluntary stewardship program.** Counties that elect to protect critical areas through the voluntary stewardship program under RCW [36.70A.710](#) (1)(a) may withdraw a participating watershed from the program by adopting an ordinance or resolution withdrawing the watershed from the program. A county may withdraw a watershed from the program at the end of three years, five years or eight years after receipt of funding, or any time after ten years of funding. Watersheds withdrawn from the program are subject to RCW [36.70A.710](#) (7)(b).

Within eighteen months after withdrawing a participating watershed from the program, counties must review and, if needed, revise their development regulations that protect critical areas in that watershed as they specifically apply to agricultural activities. The development regulations must protect the critical area functions and values as they existed on July 22, 2011. During this interim period, counties must continue to protect critical areas in watersheds withdrawn from the program. The adopted ordinance or resolution used to withdraw participating watersheds must state how counties will continue to protect critical areas in watersheds withdrawn from the program. Counties have two options during the interim period:

- (a) Adopt interim development regulations or revert to development regulations that were in place at the time of the watershed work plan approval; or
- (b) Continue to implement the watershed work plan.

(5) County responsibilities when exiting the voluntary stewardship program. Watershed work plans that are not approved, fail, or are not funded are subject to RCW [36.70A.735](#)(1).

Within eighteen months, counties must adopt one of the four options pursuant to RCW [36.70A.735](#)(1). During this interim period, counties must continue to protect critical areas in areas used for agricultural activities. The four options include:

- (a) Pursuant to RCW [36.70A.735](#) (1)(a) develop, adopt, and implement a watershed work plan approved by the state department of commerce that protects critical areas in areas used for agricultural activities while maintaining the viability of agriculture in the watershed.
- (b) Pursuant to RCW [36.70A.735](#) (1)(b) adopt development regulations previously adopted by another local government to protect critical areas in areas used for agricultural activities. Counties may adopt another county's critical area development regulations, provided such regulations are from a region with similar agricultural activities, geography, and geology, and are from Clallam, Clark, King, or Whatcom counties at the time the voluntary stewardship program legislation was enacted, and have not been invalidated, or are from any county (including Clallam, Clark, King, or Whatcom) and have been upheld as adequately protective of critical areas functions and values in areas used for agricultural activities by the growth management hearings board or court after July 1, 2011.
- (c) Pursuant to RCW [36.70A.735](#) (1)(c) adopt development regulations certified by the state department of commerce as protective of critical areas in areas used for agricultural activities.
- (d) Pursuant to RCW [36.70A.735](#) (1)(d) review and, if needed, revise development regulations adopted to protect critical areas as they relate to agricultural activities.

Appendix 1.B

Critical Areas Legal Review: Critical Areas Case Law (1997 – 2017) and Growth Management Hearings Board Decisions (2005 – 2017)

This document has been compiled to provide county and city planners with summaries of appellate court and Growth Management Hearings Board decisions related to critical areas requirements under the Washington State Growth Management Act. The court decision summaries were written with the assistance of the Assistant Attorney General. Summaries of Growth Management Hearings Board decisions are compiled from digests provided by the Growth Management Hearings Board on its web page at <http://www.gmhb.wa.gov/>.

Per the Growth Management Hearings Board, the Digest provides synopses of cases and their key holdings. The case synopses and key-holdings excerpts are provided for the convenience of practitioners and should not be relied on out of context. Further, users of the Digest are reminded that decisions of the Board may be appealed to court and thus some of the excerpted cases may have been impacted by subsequent court and/or Board rulings. It is the responsibility of the user to research the case thoroughly prior to relying on holdings of a decision.

All references to CTED refer to the former Department of Community, Trade and Economic Development, now the Department of Commerce.

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Designation and Protection of Critical Areas

Court Decisions

Stevens County v. Futurewise, 146 Wn. App. 493 (2008), *review denied*, 165 Wn.2d 1038 (2009)

The court held that the county had failed to comply with the GMA when it only designated as critical wildlife habitat areas that had been designated by a state or federal agency process as habitat for endangered, threatened, or sensitive species. The court stated that the GMA required the county to designate and protect all critical areas, not just those identified by another agency.

Growth Management Hearings Board Decisions

Eastern Washington

Simmons, et al v. Ferry County, 09-1-0002c, FDO at 10-11 (July 30, 2009). One of the primary goals of the GMA is to protect the environment and enhance the state's high quality of life, including air and water quality and the availability of water. To accomplish this task, jurisdictions are required to adopt guidelines to classify critical areas ... Jurisdictions which are required to plan or voluntarily opt to plan, like Ferry County, are also required to designate critical areas ... and shall include BAS in developing policies and development regulations to protect the functions and values of critical areas.

Riparian Property Owners, et al v. Ferry County, 09-1-0002, Order on Motion to Dismiss at 5 (April 22, 2009). [Contrary to the Petitioners' assertion that an identifiable threat to critical areas was needed, the Board stated:] The GMA does not require a threat to be established to the functions and values of critical areas for these areas to be designated and protected. The term "where appropriate," indicates all critical areas as defined by the GMA ... Local jurisdictions have discretion as to how this will be accomplished, but not "where" if the critical area falls within the definition.

Futurewise v. Stevens County, 05-1-0006, FDO, (Jan. 13, 2006). In designating fish and wildlife habitat conservation areas, the County must at least designate "areas with which endangered, threatened, or sensitive species have a primary association and the designation" must be based on best available science as required by 36.70A.172.

The County has done an admirable job of requiring pre-set buffers or alternative buffers set on a case by case basis, and requiring a report from a qualified professional to set management recommendations, if a development is within "a mapped critical habitat area" for endangered, threatened, or sensitive species. But the County falls short by defining "critical habitat" as "only those areas designated by a state or federal agency through a formal statutory or rule-making process.

If Stevens County does not designate fish and wildlife conservation areas for certain listed species using BAS and all the information available from WDFW, but neighboring counties, such as Ferry County and Pend Oreille County do, then there would be a disconnect in protection for the listed species and

extinction a real possibility. To protect endangered, threatened and sensitive species and their habitat, such as the lynx, which knows no country, state or county boundary, there must be intergovernmental cooperation and coordination, as stated in WAC 365-190-080(5).

Western Washington

Friends of the San Juans, et al. v. San Juan County, 13-2-0012c FDO (September 6, 2013), at 9. The Board dismissed alleged violations of RCW 36.70A.040(3) regarding the designation and protection of critical areas stating that statute “established the requirement that jurisdictions adopt initial comprehensive plans and implementing development regulations” and the County “had adopted the required comprehensive plan and development regulations many years ago.”

ADR/Diehl v. Mason County, 07-2-0010, FDO, at 19 (Jan. 16, 2008). The issue of allowing new residential construction in frequently flooded areas is a question of protection of critical areas. Pursuant to WAC 365-195-825(2)(b), “protection” of critical areas also means “to safeguard the public from hazards to health and safety.” Whether to allow new residential construction in a frequently flooded area is a matter of hazards to public health and safety. Therefore, the adoption of regulations allowing such residential construction must include BAS.

Central Puget Sound

Pilchuck Audubon Society, et al v. Snohomish County, 06-3-0015c, FDO (9/15/06), at 68. [T]he Board finds that Petitioners’ theory is unsupported by the GMA. The GMA acknowledges that critical areas occur throughout the landscape, within urban, rural and resource land designations. The GMA does not discriminate; it simply requires that their functions and values be protected wherever they are found.

Sno-King Environmental Alliance, et al v. Snohomish County, 06-3-0005, 5/25/06 Order on Motions, at 12-13. [Regulations affecting nuisance odors from a wastewater treatment facility such as hydrogen sulfide or ammonia are not regulations protecting critical areas, and BAS is not applicable.] Odor does not fit within the GMA’s definition of critical areas (See RCW 36.70A.030(5), nor has the County defined it as such.

Pilchuck Audubon Society v. Snohomish County, 95-3-0047c, FDO (12/6/95), at 24. The requirement that critical areas are to be protected in the urban area is not inconsistent with the Act’s predilection for compact urban development.

Bremerton v. Kitsap County, 95-3-0039c, FDO (10/6/95), at 31. Two of the Act’s most powerful organizing concepts to combat sprawl are the identification and conservation of resource lands and the protection of critical areas (see RCW 36.70A.060 and .170) and the subsequent setting of urban growth areas (UGAs) to accommodate urban growth (see RCW 36.70A.110). It is significant that the Act required cities and counties to identify and conserve resource lands and to identify and protect critical areas before the date that IUGAs had to be adopted. This sequence illustrates a fundamental axiom of growth management: “the land speaks first.”

Level of Protection and Mitigation Required under the GMA

Court Decisions

Yakima County v. Eastern Washington Growth Management Hearings Board, 168 Wn. App. 680 (2012). In updates to its critical areas ordinance, Yakima County adopted standard buffers and adjusted minimum stream and wetland buffers. The ordinance was challenged for failure to include BAS and failure to protect all the functions and values of the critical areas as required by RCW 36.70A.172. Almost all of the scientific studies reviewed by the County recommended buffers greater than those adopted by the County. The court found that the GMA requires that regulations for critical areas must protect all functions and values of the designated areas and not just some. The buffers adopted did not protect all functions either for streams or wetlands. While the court recognized that local governments may depart from BAS if a reasoned justification is provided, in this case the court found that the County failed to do so. However, the court also found that the County had provided reasoned justification for not regulating ephemeral streams as critical areas.

Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board, 161 Wn.2d 415 (2007)

The tribe challenged the county's critical areas ordinance alleging, among other things, that a "no harm" provision failed to protect critical areas, as required by RCW 36.70A.060(2). The court concluded that the "no harm" standard protected critical areas by maintaining existing conditions. The Court stated that absent clear legislative direction, it would not conclude that the GMA imposed a duty on local governments to enhance critical areas. The county's decision to not require mandatory riparian buffers was upheld because doing so would impose a requirement to restore habitat functions that no longer existed. The GMA requirement to protect critical areas does not impose a corresponding requirement to enhance.

Whidbey Environmental Action Network v. Island County, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), *review denied*, 153 Wn.2d 1025 (2005). The GMA requires that critical areas regulations protect all functions and values of the designated areas.

Growth Management Hearings Board Decisions

Eastern Washington

Larson Beach Neighbors/Wagenman v. Stevens County, 07-1-0013 First Order on Compliance at 24 (April 16, 2009). [T]he relevant standard under the GMA is for the functions and values of critical areas are to be protected with further degradation of the area being prevented ... The GMA requires the County to enact development language which protect critical areas from adverse impacts, not minimize the effect of those impacts.

Western Washington

Friends of the San Juans, P.J. Taggares Company, Common Sense Alliance, William H. Wright, and San Juan Builders Association v. San Juan County, 13-2-0012c: “Mitigation” and “mitigation sequencing” are not always clearly understood. Those terms are easily confused with “compensatory mitigation”. The latter is the step in the mitigation sequence that occurs after avoidance and minimization. It involves restoring (re-establishing, rehabilitating), creating (establishing), enhancing, or preserving wetlands to replace those lost or degraded through permitted activities. “Mitigation” and “mitigation sequencing” have a broader meaning: they include as the first option, avoidance of any impact. If avoidance is not possible, the second step in mitigation sequencing is minimization. Only after those first steps does one then consider compensatory mitigation. Order Finding Compliance, p. 10 (May 14, 2015).

Friends of the San Juans, et al. v. San Juan County, 13-2-0012c: Establishing property-specific buffers is indeed one approach [to protecting FWHCAs] and, as stated in Wetlands Volume 2 “. . . is probably the most consistent with what a review of the scientific literature reveals about buffer effectiveness.” However, that is not the only method: “Three basic types of buffer regulations are generally recognized: variable-width, fixed-width, or some combination.” Order Finding Compliance and Continuing Non-Compliance, (August 20, 2014), pg. 17.

If development regulations allow harm to critical areas, they must require compensatory mitigation of the harm. Development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas. When developing alternative means of protection, counties and cities must assure no net loss of ecological functions and values and must include the Best Available Science. FDO (September 6, 2013), at 45.

For critical areas, the preferred option is to avoid negative impacts. However, when that is not an option, steps to reduce and mitigate adverse impacts are appropriate when a jurisdiction follows a mitigation sequencing process. FDO (September 6, 2013), at 67.

The Board finds and concludes that a blanket exemption for activities which could result in significant impacts to a critical area, without any consideration of the quality of a wetland, and which does not include steps to avoid, minimize or mitigate, fails to protect critical areas. FDO (September 6, 2013), at 71.

Ecosystem Approach to Protection

Whidbey Environmental Action Network v. Island County, 14-2-0009: Under the statutory definition, “Critical Areas” include “areas and ecosystems,” and it is the functions and values of those areas and ecosystems that counties and cities are required to protect. Development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas. Final Decision and Order, June 26, 2015, p. 21.

FWHCAs are “areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem”. In sum, the GMA requires the County to protect the functions and values of Critical Area Ecosystems. Final Decision and Order, June 26, 2015, p. 21.

“An ecosystem consists of all the organisms that live in a particular area along with physical components of the environment with which those organisms interact. There must be an appropriate mixture of plants, animals, and microbes if the ecosystem is to function. . . So complete is the interconnectedness of the various living and nonliving components of the ecosystem that a change in any one will result in a subsequent change in almost all the others.” Final Decision and Order, June 26, 2015, p. 21.

[The Board disagreed with the County’s view that the sole purpose of FWHCAs, including Natural Area Preserves, is the protection of the species found therein] By failing to establish buffers for the NAP based on an assumption that it encompasses “the land required for species preservation”, the County has failed to protect the NAP’s habitat or the functional integrity of its ecosystem. [Citing WAC 365-190-130(3)(a) and the role of buffers to separate incompatible uses from habitat areas.] Final Decision and Order, June 26, 2015, p. 24-2.

The GMA guidelines focus on the “functional integrity of the ecosystem” and make no distinction between plant and animal species. Plants and animals are interconnected components of all terrestrial ecosystems. The GMA statutes make no distinction between plant and animal species; rather the GMA statutes require protection of the integrated habitat area and ecosystem. The County [failed to consider] WAC 365-190-130(1)(a)’s guideline to consider for classification and designation, among other things, “areas where endangered, threatened, and sensitive species [which may be plant or animal] have a primary association”. Final Decision and Order, June 26, 2015, p. 28.

It is the County’s obligation to designate and protect habitat areas and ecosystems; the protection afforded by other entities or regulations is irrelevant. Final Decision and Order, June 26, 2015, p. 31.

Central Puget Sound

Hood Canal Environmental Council, et al v. Kitsap County, 06-3-0012c, FDO (8/28/06), at 39-41. Kitsap County’s marine buffers buffer widths are assigned based on SMA land use classifications, not based on the functions and values of the critical areas designation – here, fish and wildlife habitat conservation areas. . . .The County has not differentiated among the functions and values that may need to be protected on shorelines that serve, for example, as herring and smelt spawning areas, juvenile chum rearing areas, Chinook migratory passages, shellfish beds or have other values. Rather they have chosen an undifferentiated buffer width that is at or below the bottom of the effective range for pollutant and sediment removal cited in [BAS]. And they have applied that buffer to SMP land use classifications, not to the location of specific fish and wildlife habitat. . . .The flaw [in this approach] is illustrated by the fact that eelgrass, kelp, and shellfish beds are protected by larger buffers if they happen to be off shores designated Natural or Conservancy [in the SMP], while the same critical resources – eelgrass, kelp, shellfish – have just 35 feet of buffer off the Urban, Semi-rural or Rural shore. Protection for critical areas functions and values should be based first on the needs of the resource as determined by BAS. . . .Here Kitsap County has opted to designate its whole shoreline as critical area but then has not followed through with the protection of all the applicable functions and values.

Ecosystem Approach to Protection

Ann Aagaard, Judy Fisher, Bob Fisher, Glen Conley, and Save a Valuable Environment (SAVE) v. City of Bothell, 15-3-0001: Under the statutory definition of “Critical Areas,” counties and cities must protect “areas and ecosystems.” Development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas. Final Decision and Order, (July 21, 2015), p. 23; see also Raymond Paoella Concurrence, pp. 35-41.

Low Impact Development, Density, and Critical Areas

Aagaard, et al v. City of Bothell, 08-3-0002, FDO, at 11-12. [Petitioners’ challenged a lot modification provision of the Low Impact Development Ordinance that would allow increased density – i.e. smaller lots than the existing large lot zoning. The City’s record contained no analysis of the additional lot yield, if any, likely or possible as the result of the lot modification provisions. The City relied on a study indicating that] preserving or restoring forest cover, minimizing impervious surfaces, managing stormwater on-site and reducing the need for landscape chemicals] are the determining factors that “can be limited to an equal or greater extent for higher density development utilizing Low Impact Development techniques.” (Citation omitted.) The result should be cool, reliable groundwater that supplies steady flows to streams that support native salmon. Particularly in light of the criteria for Lot Modification, identified below, the Board is not persuaded that the City’s Lot Modification allowance reduces protection for the North Creek hydrology.

[Petitioners contend that designated wildlife corridors (designated critical areas) or “connecting segments” to designated critical areas would not be protected under the LID Ordinance.] The Board determines that the LID Ordinance does not exempt wildlife corridors from critical areas regulations or best available science. [Rather], any “variation, averaging or reduction” of critical areas and buffers identified as corridors requires not only the critical areas process and standards of BMC 14.04 but, in addition, a “specific finding” concerning accommodation of wildlife movement. The “specific finding” provision is not a loophole but an added requirement.

Special Consideration for Anadromous Fish

Tahoma Audubon Society, et al v. Pierce County, 05-3-0004c, FDO July 12, 2005, at 38-40. [The Board reviewed the detailed scientific evidence in the record regarding salmon habitat along marine shorelines to determine whether the County gave “special consideration to anadromous fish.”] Despite the detailed information about the function and values of salmonids habitat specific to each shoreline reach, Pierce County eliminated “marine shorelines” from the fish and wildlife habitat conservation areas listed in its critical areas ordinance without determining whether the remaining designated critical areas adequately met the needs of salmon. Undoubtedly some of Pierce County’s remaining designated and mapped salt-water critical areas, such as eelgrass beds, surf smelt beaches, salt marshes and steep bluffs, overlap with habitats critical to the survival of anadromous fish. But there is nothing in the record to indicate that the high-value shoreline reaches identified by the Pentec Report for salmonids habitat [much less the restorable habitat stretches] are designated and protected in the Pierce County critical areas regulations.

Deferring salmon habitat protection to a site-by-site analysis based on disaggregated factors is inconsistent with Pierce County's best available science. Nothing in the science amassed by the County supports disaggregating the values and functions of marine shorelines. [Various studies are reviewed pertaining to the integrated function and value of salmon habitat. FDO, at 40.

The Board finds that Pierce County's site-by-site assessment of marine shorelines during the permit application process, as established in (the CAO), does not meet the requirement of using best available science to devise regulations protective of the integrated functions and values of marine shorelines as critical salmon habitat. FDO, at 40-41.

Inclusion of Best Available Science

Court Decisions

Ferry County v. Growth Management Hearings Board, 184 Wash. App. 685, 339 P.3d 478 (2014).

A local government must include BAS in the record when designating fish and wildlife habitat conservation areas and must rely on and analyze the information using a reasoned process. The court found that Ferry County failed to comply with the GMA when it departed from or ignored the recommendation of WDFW to designate habitat for endangered, threatened and sensitive (ETS) species or designate species of local importance. Nor did the County indicate in the record that BAS was included or analyzed with a reasoned process. Mere inclusion of BAS is not sufficient. The written record must "show the work" of the county and show how the BAS was considered substantively in the development of the county's ordinance.

Yakima County v. Eastern Washington Growth Management Hearings Board, 168 Wn. App. 680 (2012).

In updates to its critical areas ordinance, Yakima County adopted standard buffers and adjusted minimum stream and wetland buffers. The ordinance was challenged for failure to include BAS and failure to protect all the functions and values of the critical areas as required by RCW 36.70A.172. Almost all of the scientific studies reviewed by the County recommended buffers greater than those adopted by the County. The court found that the GMA requires that regulations for critical areas must protect all functions and values of the designated areas and not just some. The buffers adopted did not protect all functions either for streams or wetlands. While the court recognized that local governments may depart from BAS if a reasoned justification is provided, in this case the court found that the County failed to do so. However, the court also found that the County had provided reasoned justification for not regulating ephemeral streams as critical areas.

Olympic Stewardship Foundation v. Western Washington Growth Management Hearings Board, 166 Wn. App. 172 (2012), *review denied*, 174 Wn.2d 1007 (2012).

Olympic Stewardship Foundation challenged Jefferson County's regulations that restricted vegetation removal in zones surrounding rivers at high risk for channel migration (channel migration zones or CMZ). The CMZ was designated as critical areas under the "geologically hazardous areas" component of the definition. The Foundation challenged the vegetation removal restrictions as not including BAS, alleging that the County had failed to develop a record showing how the science considered supported the vegetation removal record. The court held that "including" BAS does not impose a duty on local governments to describe each step of their deliberative process but rather the local government is

required to address on the record the relevant sources of BAS included in their decision-making. The court also found that, by prohibiting vegetation removal and development only within those areas determined to be "high risk" critical areas, any dedications of land within the critical areas are de facto "reasonably necessary as a direct result of the proposed developments," in compliance with RCW 82.02.020.

Stevens County v. Futurewise, 146 Wn. App. 493 (2008), *review denied*, 165 Wn.2d 1038 (2009). The court held that Stevens County had failed to consider the best available science in designating critical habitats, as required by RCW 36.70A.172(1), when it only designated as critical wildlife habitat areas that had been designated by a state or federal agency process as habitat for endangered, threatened, or sensitive species. The court ruled that, by tying the classification of critical habitat to lands designated by another state or federal agency, the county had avoided consideration of any scientific information. Instead, counties must use some kind of scientific methodology in a reasoned process of analysis to designate the critical habitats.

Ferry County v. Concerned Friends of Ferry County, 155 Wn.2d 824, 123 P.3d 102 (Nov. 17, 2005). Compliance with the GMA's best available science requirement must be supported by evidence in the record. Noting the absence of any statutory definition, the Court turned to the Growth Management Hearings Boards' interpretations of the BAS requirement as an indication of the operative standards at the time of Ferry County's actions in this case. The Court concluded the Boards "at least required local governments to produce valid scientific information and consider competing scientific information and other factors through analysis constituting a reasoned process." The Court held that regardless of the precise definition applied, the process undertaken and the information considered by Ferry County in this case did not rise to the level of BAS.

The record must demonstrate that the County used scientific information and analyzed that information using a reasoned process. The Court appears to have used a two-part test to assess the County's compliance with the GMA's BAS requirement: (1) the County must rely on scientific information—the BAS requirement does not mandate the use of a particular methodology, but it requires at a minimum the use of a scientific methodology; (2) the steps taken in analyzing the scientific information must constitute a reasoned process, with the process evident in the record. Quoting from a 2000 Western Board decision, the Court suggested it is not a reasoned process for a county to "choose its own science over all other science" or "use outdated science to support its choice."

The Court also cited approvingly to the BAS guidance adopted by the state Department of Community, Trade and Economic Development in 1999 (WAC 365-195-900 through -925), which provide criteria for assessing whether proffered information can be considered scientific information and for engaging in a "reasoned process." The rules did not apply to Ferry County's actions here because the rules took effect after those actions.

Whidbey Environmental Action Network v. Island County, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), *review denied*, 153 Wn.2d 1025 (2005). Evidence of the best available science must be included in the record and must be considered substantively in the development of critical areas policies and regulations. RCW 36.70A.172(1) requires the BAS to be included in the record and considered substantively in the development of critical areas policies and regulations.¹

¹ *Id.* at 171, citing *Honesty in Env'tl. Analysis & Legis. (HEAL) v. Cent. Puget Sound Growth Mgmt. Hrgs. Bd.*, 96 Wn. App. 522, 532, 979 P.2d 864 (1999) (discussed above at page 7).

If a city or county adopts a critical areas requirement that is outside the range supported by the best available science, it must provide findings explaining the reasons for its departure from the best available science and identifying the other GMA goals being implemented by that departure.

A Growth Management Hearings Board is free to choose from among competing scientific evidence in the record in assessing whether the County properly included the best available science. When the Board observes that the majority of scientific information in the record supports a specific conclusion and explains its reasoning, it has not inappropriately relied on a preponderance of the evidence (rather than the clearly erroneous standard required under RCW 36.70A.320(3)).

The GMA requires that critical areas regulations protect all functions and values of the designated areas.

To the extent a county or city relies on a previously-adopted ordinance to protect critical areas, that prior ordinance may be challenged for compliance with the GMA's best available science requirements. The County relied partly on a six-year-old wetlands ordinance to protect fish and wildlife habitat conservation areas. The Court agreed that the BAS requirement does not operate retroactively, but it explained that critical areas regulations adopted before the BAS requirement was enacted were subject to challenge to the extent the County relied on them to fulfill the obligations imposed by the BAS requirement. "Otherwise, a county could use myriad preexisting regulations in an attempt to satisfy GMA critical areas requirements without actually having to include BAS analysis. This would contravene RCW 36.70A.172."² In this case, the Court found the County did not rely substantively on the earlier wetlands buffers to protect fish and wildlife habitat, and it reversed the Board's invalidation of the wetlands buffers.

An exception from critical areas regulations for agricultural activities must be supported by evidence in the record that such an exception is necessary and that the best available science was employed in crafting the exception.

Honesty in Environmental Analysis & Legislation (HEAL) v. Central Puget Sound Growth Management Hearings Board, 96 Wn. App. 522, 979 P.2d 864 (June 21, 1999) (amended Aug. 25, 1999). Local governments must give substantial consideration to the best available science when developing critical area policies and regulations. The Court rejected the argument that the best available science requirement is purely procedural, requiring only that the science be included in the record. The Court also rejected the contention that a critical area policy or regulation must precisely mirror the best available science in the record. The Court instead took a middle approach, holding that local governments must give substantive consideration to the best available science.

The best available science requirement is intended to ensure that critical areas regulations are not based on "speculation and surmise." Borrowing from a federal case analyzing an analogous requirement in federal law, the Court of Appeals described the best available science requirement as intended "to ensure that regulations not be based on speculation and surmise."

Compliance with the best available science requirement may be necessary to satisfy constitutional nexus and proportionality requirements. The Court suggested in dictum that the best available science

² *Id.* at 180. The language and holding in this portion of the decision was modified from the previous decision withdrawn by the Court.

requirement may have constitutional ramifications with respect to the nexus and rough proportionality limits the United States Supreme Court has placed on governmental authority to impose conditions on development applications.

Growth Management Hearings Board Decisions

Eastern Washington

Concerned Friends of Ferry County v. Ferry County, 97-1-0018c (Order Finding Continuing Noncompliance [Fish and Wildlife Habitat Conservation Areas] February 5, 2014). Ferry County is a long-running dispute since 1997, with over 14 Growth Board Orders find Ferry County Non-Compliant with the GMA for failure to designate, protect, and include BAS in its FWHCAs; these orders were upheld and affirmed by the Superior Court, the Court of Appeals, and the Washington Supreme Court.

Under WAC 365-190-130(2), the County must classify and designate those areas where Endangered, Threatened, Sensitive (ETS) species have a primary association. The Board cited Court of Appeals and Supreme Court decisions holding that the GMA directs counties to determine what lands are primarily associated with listed species, and then to adopt regulations protecting those lands. *Stevens County v. Futurewise*, 146 Wn. App. 512 (2008), rev. denied, *Stevens County v. Futurewise*, 165 Wn.2d 1038 (2009); *Ferry County v. Concerned Friends of Ferry County*, 155 Wn.2d 824, 837 – 839 (2005).

In the 2014 Growth Board case, Petitioners challenged the County's election not to designate habitat for Bull Trout in part because there is no federally – designated "critical habitat" for the species in the County. The Board held that federal Endangered Species Act has different standards for designating habitat than the GMA. Thus, the absence of federally – designated critical habitat is not a determinative fact for purposes of a County's GMA designation of areas where endangered, threatened, or sensitive species have a "primary association." It went on to find substantial evidence in the record demonstrating that Bull Trout is present in Ferry County and has a primary association with certain areas of the County. Accordingly, the County's failure to designate any Bull Trout habitat was not supported by substantial evidence in the record and represented a departure from BAS without any reasoned justification. The Board found that Petitioners failed to come forward with evidence that the County failed to include BAS in designating habitat for the Bald Eagle, Peregrine Falcon, and Fisher.

Concerned Friends of Ferry County, 97-1-0018, coordinated with Concerned Friends of Ferry County and David L. Robinson v. Ferry County, 06-1-0003; Compliance Order (December 1, 2011), page 16: There was no substantial evidence in the record to support a County finding that Best Available Science was included in designating the following types of Fish and Wildlife Habitat Conservation Areas: (1) areas where Endangered, Threatened, and Sensitive Species have a Primary Association, and (2) Habitats and Species of Local Importance. On remand, Ferry County should provide a reasoned justification for departing from Best Available Science in designating Fish and Wildlife Habitat Conservation Areas.

Loon Lake Property Owners Assoc., et al. v. Stevens County, 03-1-0006c, 3rd Order on Compliance, (Dec. 21, 2005). Local governments must "analyze the scientific evidence and other factors in a reasoned process." *Easy v. Spokane Co.*, EWGMHB #96-1-0016, 1997 WL 191457, at 6. Legislative bodies must also be cautious about using their own science just to support their own agenda:

“Under *Heal v. CPSGMHB*, Court of Appeals, Cause #40939-1-1 (June 21, 1999), the County cannot choose its own science over all other science and cannot use outdated science to support its choice.” *Island Co. Citizens’ Growth Management Coalition, et al, v. Island County*, et al, WWGMHB Case No. 98-2-0023c, Compliance Order (March 6, 2000).

The role of the BAS standard has been interpreted by the courts to require more than mere “consideration” of science. BAS must substantively control the standard established and must be reflected in the record.

Concerned Friends of Ferry County, v. Ferry County, 97-1-0018, Order on Reconsideration, (Nov. 24, 1999). It is the County’s obligation to include best available science in the designation and protection of frequently flooded areas. Ferry County, by its failure to demonstrate otherwise, forces this Board to conclude that best available science was not included in developing policies in the sections of the Second Amended Ordinance 95-06 under review. The contention that the silence of the reviewing Department is considered approval and constitutes consideration and inclusion of best available science is not correct.

Western Washington

Friends of the San Juans, et al. v. San Juan County, 13-2-0012c: The Board also observes that the [Petitioners’] argument highlights the difficulty of citing Board or appellate court decisions in regard to BAS and the BAS record. The BAS in any particular decision may not be similar to BAS relied on by a different jurisdiction and reflected in the decision challenging that decision. FDO (September 6, 2013), at 73.

RE Sources v. City of Blaine, 09-2-0015, Order on Reconsideration at 2-3 (April 27, 2010) [As to Petitioner’s alleged error in regards to the City’s two-step process, the Board clarified its FDO and stated:] What the Board did conclude [in the FDO] was that the City failed to adequately analyze all of the functions and values of its wetlands when creating the standard buffers but, given the site-specific detailed study process, the complete analysis of functions and values would be accomplished so as to protect these areas [Citing to various provisions of the City’s CAO, BMC 17.82] ... Thus, BMC 17.82’s two-step detailed study process incorporates BAS on a site-specific level and ensures the existing functions and values of Blaine’s critical areas will be protected from further degradation as required by RCW 36.70A.060(2) and 172.

OSF/CPCA v. Jefferson County, 08-2-0029c, FDO, at 37-39 (Nov. 19, 2008). [In noting that development regulations intended to protect critical areas must be based on BAS, the Board held:] The Board finds that although the retention of vegetation [within a CMZ] is important, the importance of vegetation retention is based on bank stabilization and erosion protection and is therefore more relevant within high to moderate risk areas which are at a greater probability of being impacted by the river or stream’s migration. A blanket restriction on the removal of vegetation that is not linked to the functions and values it is intended to protect is not supported by BAS.

ADR/Diehl v. Mason County, 07-2-0010, FDO, at 8 (Jan. 16, 2008). [In considering “references” as provided in WAC 365-195-905(5)(a)(6), specifically “other pertinent existing information,” the Board held]: [I]t is for the County to determine to what extent the Skillings-Connolly reports may be relevant,

and to disclose the basis for either relying upon or departing from studies that have been accepted as BAS. Until that is done, the CMZ Study cannot be accepted as BAS. To the extent that the amendments to [the ordinance] rely upon a study that cannot yet be accepted as BAS, they fail to comply with RCW 36.70A.172(1).

Swinomish Indian Tribal Community et al. v. Skagit County; 02-2-0012c (Compliance Order, 12-8-03).

While the Legislature could have imposed a more precise standard, the requirement to base the protection standard on BAS recognizes that science will change over time and the standards and protection measures will need to be revised. Standards and protection measures that are informed by BAS also provide cities and counties more flexibility to craft regulations that reflect local conditions. Nevertheless, this flexibility imposes on the County the complex responsibility of both setting a protection standard consistent with BAS, when the sources are sometimes conflicting, and harmonizing the goals and requirements of the GMA, while taking into consideration local conditions.

Diehl v. Mason County, 95-2-0073 (Compliance Order, 3-22-00). The “special consideration” language relating to anadromous fish under RCW 36.70A.172(1) requires a result more heavily weighted towards science than might otherwise be required under the BAS provisions of the Act.

Landscape Approach

WEAN/CARE v. Island County, 08-2-0026c, FDO at 14 (Nov 17, 2008). See also, Dec 22, 2008 Order on Reconsideration for WEAN/CARE v. Island County where the Board clarified its holding in regards to the landscape approach. The guidance offered in [Wetlands in Washington] Volume 2, that was based on the BAS synthesized in [Wetlands in Washington] Volume 1, and was considered by the County, recognizes that viable data was not yet available on wildlife habitat or wildlife corridors. Without the needed scientific data, it is impractical for the County to develop regulations based on a landscape approach. For this reason, the Board finds and concludes that the County’s decision to use a site-based approach to protect wetlands rather than a landscape-based approach is not a clearly erroneous violation of RCW 36.70A.040(3), RCW 36.70A.060, and RCW 36.70A.170(1).

[T]he science in the Record noted that the performance of wetland functions is controlled by a number of environmental factors within the wetland boundary (site scale) as well as in the broader landscape (landscape scale) and that wetlands do not function in isolation, but rather a wetland’s ability to provide certain functions is influenced by the conditions and land uses within their contributing basins. However, the Board noted that the data needed to develop a comprehensive, landscaped-based approach within Island County was not available at this point in time. [Citing to Ecology’s Wetland Manual, the Board concluded:] In other words, although the science may suggest utilizing a landscape approach, there is no science in the record for implementing such an approach ... the GMA requires the inclusion of the Best Available Science which is science that is presently available as well as practically and economically feasible so as to protect critical areas. The Board finds reliance on prescriptive buffers which incorporate readily available science and is a method supported by Ecology does not fail to protect the functions and values of wetlands. Order on Reconsideration, at 4-5 (Dec. 22, 2008).

Central Puget Sound

Hood Canal Environmental Council, et al v. Kitsap County, 06-3-0012c, FDO (8/28/06), at 30. Petitioner KAPO contends that the County may not rely on federal habitat designations undertaken for another purpose but must conduct its own shoreline inventory or “independent analysis” and show in the record its owned “reasoned process.” The Board however, reasons that the “best available science” requirement includes the word “available” as an indicator that a jurisdiction is not required to sponsor independent research but may rely on competent science that is provided from other sources. . . .The Board concludes that the County appropriately relied on available science.

HEAL reminds us that the choice of a city or a county, when faced with competing options for protecting critical areas – each based on competent and current science – is entitled to deference. Kitsap County chose the prescriptive buffer approach, with flexible alternatives, because it found the BAS supporting that approach more persuasive and because it was administratively feasible. The Board is not persuaded that the County’s choice was erroneous. FCO at 35-36.

Kitsap County’s marine buffers buffer widths are assigned based on SMA land use classifications, not based on the functions and values of the critical areas designation – here, fish and wildlife habitat conservation areas. . . .The County has not differentiated among the functions and values that may need to be protected on shorelines that serve, for example, as herring and smelt spawning areas, juvenile chum rearing areas, Chinook migratory passages, shellfish beds or have other values. Rather they have chosen an undifferentiated buffer width that is at or below the bottom of the effective range for pollutant and sediment removal cited in [BAS]. And they have applied that buffer to SMP land use classifications, not to the location of specific fish and wildlife habitat. . . .The flaw [in this approach] is illustrated by the fact that eelgrass, kelp, and shellfish beds are protected by larger buffers if they happen to be off shores designated Natural or Conservancy [in the SMP], while the same critical resources – eelgrass, kelp, shellfish – have just 35 feet of buffer off the Urban, Semi-rural or Rural shore. Protection for critical areas functions and values should be based first on the needs of the resource as determined by BAS. . . .Here Kitsap County has opted to designate its whole shoreline as critical area but then has not followed through with the protection of all the applicable functions and values. FDO, at 39-41.

Department of Ecology/Department of Community, Trade and Economic Development³, et al v. city of Kent, 05-3-0034, FDO (April 19, 2006), at 13-15. [A thorough discussion of the GMA’s Best Available Science (BAS) requirement in the context of *HEAL* (1999) and *Ferry County* (2005). The Board reiterated the Supreme Court’s holding in *Ferry County*, finding that the Court’s 3-factor analysis - (1) The scientific evidence contained in the record; (2) Whether the analysis by the local decision-maker of the scientific evidence and other factors involved a reasoned process; and (3) Whether the decision made by the local government was within the parameters of the Act as directed by the provisions of RCW 36.70A.172(1) - is a case-by-case, rather than a bright-line, review.]

The GMA mandate at issue in the present case, as in *WEAN*, is the requirement that local jurisdictions include best available science in designating critical areas and protecting their functions and values. Once a challenger has demonstrated that there is no science or outdated science in the City’s record in support of its ordinance, or that the City’s action is contrary to what BAS supports, it does not impermissibly shift the burden of proof for the Board to review the City’s record to determine what

³ Department of Community, Trade and Economic Development (CTED) is now the Department of Commerce.

science, if any, it relied upon. This is precisely the process undertaken in the Ferry County case. See generally, *Ferry County*, supra. It is Petitioners' burden to prove by clear and convincing evidence that the City's ordinance does not comply with the GMA because it does not include BAS for wetlands protection. FDO, at 17.

The Legislature determined that scientific understanding of the necessary critical area protections would improve over time; thus, cities do not have to answer all the scientific questions they can think of but only need to apply the best science available at a particular time and place. FDO, at 39.

The Board reviews this case under the framework laid down by the Supreme Court last year in *Ferry County* and adds a fourth consideration based on WEAN and on the CTED guidelines at WAC 395-195-915(c):

- (1) The scientific evidence contained in the record;
- (2) Whether the analysis by the local decision-maker of the scientific evidence and other factors involved a reasoned process;
- (3) Whether the decision made by the local government was within the parameters of the Act as directed by the provisions of RCW 36.70A.172(1); AND
- (4) Whether there is justification for departure from BAS.

FDO at 42.

Tahoma Audubon Society, et al v. Pierce County, 05-3-0004c, 1/12/06 Compliance Order, at 6. In remanding the noncompliant regulations to [the County], the Board pointed out that . . . the record already contained abundant science concerning the matters at issue. Nevertheless, [the County] undertook additional public process and re-analysis in developing the proposal for [the remand Ordinance]. Base on the prior well developed record, as refined in the compliance process, [the County] has now enacted both designation of critical salmon habitat in [the County] marine shorelines and measures to protect the functions and values of that habitat. While there are various ways that the science in the record might have been applied by [the County] to comply . . . the Board is persuaded that Ordinance No. 2005-80s meets the GMA standard.

HEAL, et al v. City of Seattle, 96-3-0012, 10/4/01 Remand Order, at 6-7. The Board properly applied the *State of Louisiana v. Verity* to the record before it in this case. [If there are scientifically respectable conclusions disputed by rival scientific evidence of presumably equal dignity, the court will not displace the administrative choice.] The Board found that the City took evidence and included it in the record. HEAL presented evidence contrary to the evidence relied upon by the City. The Board properly concluded it could not displace the City's judgment about which science the City would rely upon as the best available science. The Board rejected the idea that the statute required any particular substantive outcome or product. The Board is correct. The legislature passed RCW 36.70A.172(1) five years after the GMA was adopted. It knew of the other factors [goals and specific requirements], but neither made best available science the sole factor, the factor above all other factors nor made it purely procedural. Instead the legislature left the cities and counties with the authority and obligation to take scientific evidence and to balance that evidence among the many goals and factors to fashion locally appropriate regulations based on the evidence not on speculation and surmise. (Citations omitted.)

[The record contained scientific evidence based on "natural systems sciences" and "engineering sciences," the City discussed both sciences, discussed and deliberated on the capital and operational costs of each, then chose and used the "natural systems sciences" in developing its steep slope regulations.] The same evidence of best available science was included and substantively considered by the City when it simultaneously adopted amendments to the steep slope portion of its critical areas

regulations and the amendment to its steep slope policy. Consequently, the Board concludes that the City's adoption of the steep slope (critical area) policy amendment, complies with [the BAS requirement of .172(1). 10/4/01 Remand Order, at 7.

The Tulalip Tribes of Washington v. City of Monroe, 99-3-0013, 1/28/00 Order, at 4. When any local government in the Central Puget Sound region adopts amendments to policies and regulations that purport to protect critical areas pursuant to RCW 36.70A.060(2), those enactments will be subject to meeting the best available science requirements of RCW 36.70A.172 and the potential of appeal to this Board pursuant to RCW 36.70A.280.

HEAL, et al v. City of Seattle, 96-3-0012, 8/21/96, FDO, at 17. Amendments to a previously adopted critical areas ordinance, after the effective date of a legislative amendment (BAS – RCW 36.70A.172) of the GMA, are subject to the best available science requirement of RCW 36.70A.172(1).

Updates to Include New Science

Seattle Audubon Society, et al v. City of Seattle, 06-3-0024, FDO (12/11/06), at 19. [T]he GMA requires that critical areas regulations be updated periodically, RCW 36.70A.130(3), and that cities “shall include” best available science in designating critical areas, RCW 36.70A.172(1). Here, the City of Seattle is aware of a great deal of new science concerning the existence and location of surficial faults and concerning the past occurrence and future risks of tsunamis and lahars. But the City has not included this new science, even provisionally, in its designations of geological hazard areas.

Critical Areas and Stormwater Controls

Bremerton, et al v. Kitsap County, 95-3-0039c/98-3-0032c, FDO, at 31. Although the Booth studies document the basin-wide 10 percent impervious surface threshold for damage to aquatic systems, the studies also identify measures to mitigate the effects of impervious surfaces.

Rather than adopting a maximum limit on impervious surfaces . . . the County, utilizing best available science in a substantive way, adopted a system for critical areas protection that includes buffers, building setbacks, mitigation, and stormwater drainage controls. FDO, at 32.

Under the sequencing scheme of the GMA, the land does speak first; but, on the rare occasion, as is the case here, where the land may speak late – it will be heard. FDO, at 35.

Departure from Best Available Science – A Reasoned Process

Court decisions

Ferry County v. Growth Management Hearings Board, 184 Wn. App. 685, 339 P.3d 478 (2014).

A local government must include BAS in the record when designating fish and wildlife habitat conservation areas and must rely on and analyze the information using a reasoned process. The court found that Ferry County failed to comply with the GMA when it departed from or ignored the recommendation of WDFW to designate habitat for endangered, threatened and sensitive (ETS) species or designate species of local importance. The court also found that the County failed to provide a reasoned justification for departing from BAS. When departing from BAS, the county must “show its work” and include the analysis in the record. In the absence of scientific information, the county should adopt a precautionary or no risk approach.

Yakima County v. Eastern Washington Growth Management Hearings Board, 168 Wn. App. 680 (2012).

In updates to its critical areas ordinance, Yakima County adopted standard buffers and adjusted minimum stream and wetland buffers. The ordinance was challenged for failure to include BAS and failure to protect all the functions and values of the critical areas as required by RCW 36.70A.172. Almost all of the scientific studies reviewed by the County recommended buffers greater than those adopted by the County. The court found that the GMA requires that regulations for critical areas must protect all functions and values of the designated areas and not just some. The buffers adopted did not protect all functions either for streams or wetlands. While the court recognized that local governments may depart from BAS if a reasoned justification is provided, in this case the court found that the County failed to do so. However, the court also found that the County had provided reasoned justification for not regulating ephemeral streams as critical areas.

Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board, 161

Wn.2d 415 (2007). The GMA doesn't require local governments to always follow BAS. Here the court stated that the county was required to “include” BAS in the record and departures from BAS would be permitted where the county provided a reasoned justification for the departure. The tribe challenged the county's critical areas ordinance for failing to require mandatory riparian buffers. The court concluded the county is not required to enhance critical areas but could protect critical areas by maintaining existing conditions. The county's decision to not require mandatory riparian buffers was a justified departure from BAS because doing so would impose a requirement to restore habitat functions that no longer existed. The GMA requirement to protect critical areas does not impose a corresponding requirement to enhance.

Ferry County v. Concerned Friends of Ferry County, 155 Wn.2d 824, 837–38 (2005); WAC 365–195–915(1)(c)(i) – (iii). A county need not follow Best Available Science if it includes sufficient reasoned justification.

Whidbey Environmental Action Network v. Island County, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), *review denied*, 153 Wn.2d 1025 (2005). Departure from BAS is not reasoned without explanation and justification of another priority. If a city or county adopts a critical areas requirement that is outside the range supported by the best available science, it must provide findings explaining the reasons for its

departure from the best available science and identifying the other GMA goals being implemented by that departure.

Growth Management Hearings Board Decisions

Eastern Washington

Concerned Friends of Ferry County v. Ferry County, 97-1-0018, 8th Compliance Order (Feb. 23, 2010) Finding no reasoned justification for deviation from BAS in the Record, failure to designate FWHCAs, failure to protect functions and values of FWHCAs (specifically as to mapped polygon areas, and failure to adopt consistent language with Comprehensive Plan).

Concerned Friends of Ferry County/Robinson v. Ferry County, EWGMHB 06-1-0003, 2nd Compliance Order at 16 (March 17, 2009). The County is correct in that it has some local government discretion in adopting its regulations, but if the County departs from the science in the record or parameters of BAS, then it must include the BAS it used in order to prevent speculation and surmise in an area that is scientific in nature, identify other GMA goals which it is implementing, and provide reasoned justification when departing from BAS.³⁴ Departure from BAS does not amount to a relinquishment of the duty to protect the functions and values of wetlands.

[In citing to the Court of Appeals decisions in HEAL and WEAN and the Supreme Court's decision in Ferry County, the Board summarized the need for BAS in critical areas:] To reiterate from the HEAL and WEAN cases, the Court concluded:

1. Evidence of BAS must be included in the record.
2. BAS must be considered substantively during the development of critical areas regulations.
3. Local governments may adopt critical areas regulations outside of the range of BAS.
4. But if a regulation is outside of the range of BAS, then the local government must provide reasoned justification for departure from BAS and identify other GMA goals being implemented.
5. Critical areas regulations must protect all the functions and values of designated critical areas.

Concerned Friends of Ferry County /Robinson v. Ferry County, 97-1-0018, Compliance Order, at 13-14 (Feb. 13, 2009). The County's reading of WAC 365-190-080(5) fails to consider that BAS is required to be included to justify its decision whether or not to protect and designate fish and wildlife habitat conservation areas, which include "habitats and species of local importance." The County needs to keep in mind WAC 365-190 is a guideline adopted by the State to guide the classification of critical areas, the intent of which is to assist counties and cities in designating the classification of critical areas under RCW 36.70A.170. In other words, the RCW's control. The optional/permissive "sources and methods" under WAC 365-190-080(5)(c) allows counties to use other sources for BAS "other than the WDFW PHS program," not completely ignore habitats and species of local importance, particularly if the County has the science available in the record that shows certain habitat and species of local importance in the County are "candidates", a step from endangered, threatened and sensitive listing. That science was submitted by the WDFW and not refuted by any other science in the record. To reiterate the key language, the County is required by RCW 36.70A.172 to include BAS in developing policies and development regulations to protect the functions and values of critical areas. If the County chooses to disagree with or ignore scientific recommendations and resources made by state agencies, which it may, then the County must unilaterally develop and obtain valid scientific information. Critical areas are, among other areas, fish and wildlife habitat areas, which include not only areas with which endangered,

threatened, and sensitive species have a primary association, but habitats and species of local importance. If habitats and species of local importance weren't required elements to be protected, they would not have been listed under fish and wildlife Habitat areas.

Concerned Friends of Ferry County v. Ferry County, 97-1-0018, 2nd Order on Compliance, (May 23, 2000). The Board recognizes the prerogative of Ferry County to not adopt the DFW recommendation, as long as that decision was based on a sound, reasoned process that includes best available science. The County has consulted with a credentialed biologist, but the process he undertook to develop his recommendations was inadequate. There was no evidence in the record that the consultant coordinated his recommendation with any other scientists with expertise in Ferry County, such as the Colville tribe, U.S. Forest Service, or the DFW. There was no evidence that any on-site field observations were conducted. With specific reference to the Peregrine Falcon, his recommendation seems to conflict with activities of the Colville Tribe. Regarding Bull Trout, a sensitive species documented to exist in Ferry County, he makes no mention at all.

Western Washington

Friends of the San Juans, et al. v. San Juan County, 13-2-0012c: The Yakima County (Yakima County v. E. Wash. Growth Mgmt. Hearings Bd., 168 Wn. App. 680) decision required a reasoned explanation of a jurisdiction's BAS departure decision or identification of other GMA goals being implemented by that decision. Order Finding Compliance and Continuing Non-Compliance, (August 20, 2014), pg. 45.

[In discussing the requirement for a "reasoned justification" for departure from BAS, the Board stated]: a "reasoned justification" should include a consideration of the science in the record together with predominantly scientific, technical, or legal factors that support a departure from Best Available Science recommendations. Social, cultural, or political factors should not predominate over the scientific, technical, and legal factors as a rationale for departing from science-based recommendations. Order Finding Compliance and Continuing Non-Compliance, (August 20, 2014), pg. 35.

OSF/CPCA v. Jefferson County, 08-2-0029c, FDO, at 19-20 (Nov. 19, 2008). [When establishing buffers for streams, Petitioner, in citing to *Swinomish* and *Ferry County* asserted that the Record needs to contain evidence demonstrating that the County —undertook the required reasoned process of balancing the various planning goals against BAS. The Board disagreed and stated:] ... the Board does not read these two cases as requiring a balancing between the GMA's mandate to protect critical areas and the non-prioritized goals jurisdictions are to use as a guide when developing comprehensive plans and development regulations. Rather, both *Swinomish* and *Ferry County* set forth the principle that if a jurisdiction seeks to deviate from BAS it must provide a reasoned justification for such a deviation. In addition, the Court of Appeals in *WEAN v. Island County* stated that it is when a jurisdiction elects to adopt a critical area requirement that is outside the range that BAS would support, the jurisdiction must provide findings explaining the reasons for its departure from BAS and identifying the other goals of GMA which it is implementing by making such a choice. Here, Jefferson County's choice of buffer width did not deviate from BAS; rather the County selected a width within the range of BAS and as such, although the balancing of GMA goals is always required in the context of GMA planning, the justification sought by OSF is not needed for a decision supported by BAS.

Swinomish Indian Tribal Community et al. v. Skagit County; 2-2-0012c (Compliance Order, 12-8-03). When a less-than-precautionary approach is chosen for protection, that approach requires an effective

monitoring and adaptive management program that relies on scientific methods to evaluate how well regulatory and nonregulatory actions adopted by the County achieve their objectives.

Olympic Environmental Council, et al. v. Jefferson County, 01-2-0015 (Compliance Order, 12-4-02). A county which has considered the best available science and adopted less stringent protection standards that balance the need for protection of potable water supplies against the chilling effect of regulation against development has complied with the GMA only if the county also adopts a monitoring strategy that includes stricter development regulations that will be implemented at once if the less stringent protection standards prove to be inadequate to protect against seawater intrusion.

Central Puget Sound

Department of Ecology/Department of Community, Trade and Economic Development⁴, et al v. city of Kent, 05-3-0034, FDO (April 19, 2006), FDO at 53. Mere recitals on the part of the local government that it “considered” BAS and chose to depart from it in the service of other GMA goals are inadequate. The justifications for departure must be supported by evidence in the record.

[An analysis is required to demonstrate how the various regulations, projects, and programs, together or separately, protect the specific hydrologic, water quality and habitat functions and values of a City’s wetlands allow for, under WEAN, a departure from protections that are within the range of best available science. FDO, at 48-49.

Pilchuck Audubon Society v. The City of Mukilteo, 05-3-0029, FDO October 10, 2005, at 10-11. Although Mukilteo argues that the best available science was “included” in providing the basis for the 40% buffer reduction provision from DOE Buffer Alternative 3 methodology, nothing in the record shows that best available science was even considered in making the decision. The 50% reduction that appeared very early in the City’s revision process was not informed by best available science, as discussed supra, and nothing in the record indicates a reduction of more than 25% is an appropriate deviation from DOE Buffer Alternative 3 methodology. The City’s argument that changes can be made from best available science recommendations without any justification for the changes would eliminate the stated purpose of the best available science requirement – protection of the function and values of critical areas. A jurisdiction must provide some rationale for departing from science based regulations. (Citation and quote from Court of Appeals Division I decision in WEAN v. Island County).

⁴ Department of Community, Trade and Economic Development (CTED) is now the Department of Commerce.

Qualifications for Best Available Science under the GMA

Court Decisions

Ferry County v. Growth Mgmt. Hearings Bd., 184 Wash. App. 685, 339 P.3d 478 (2014).

The court found that Ferry County failed to comply with the GMA when it departed from or ignored the recommendation of WDFW to designate habitat for endangered, threatened and sensitive (ETS) species or designate species of local importance. A county must rely on scientific information in designation of critical areas but need not develop the scientific information itself. Neither is the county required to use a particular methodology in its analysis but it must use some kind of scientific methodology. Counties must consider competing scientific information and other factors in a reasoned process of analysis. If a county chooses to disagree with or ignore the scientific information from other sources, it must then develop or obtain other valid information supporting its decision or provide a reasoned justification for departure.

Kitsap Alliance of Property Owners v. Central Puget Sound Growth Management Hearings Board, 160 Wash. App. 250 (2011)

The GMA requires local governments to use best *available* science and the court recognized that the best science that is available may include science that is “immature” or not fully developed. The court upheld the board finding that the GMA required including the best science that was available and the proper remedy for addressing the problem of science that was not fully developed was the requirement in the GMA for periodic updates rather than rejection of the available but not fully developed science.

Ferry County v. Concerned Friends of Ferry County, 155 Wn.2d 824, 123 P.3d 102 (Nov. 17, 2005).

Compliance with the GMA’s best available science requirement must be supported by evidence in the record. Noting the absence of any statutory definition, the Court turned to the Growth Management Hearings Boards’ interpretations of the BAS requirement as an indication of the operative standards at the time of Ferry County’s actions in this case. The Court concluded the Boards “at least required local governments to produce valid scientific information and consider competing scientific information and other factors through analysis constituting a reasoned process.” The Court held that regardless of the precise definition applied, the process undertaken and the information considered by Ferry County in this case did not rise to the level of BAS.

The record must demonstrate that the County used scientific information and analyzed that information using a reasoned process. The Court appears to have used a two-part test to assess the County’s compliance with the GMA’s BAS requirement: (1) the County must rely on scientific information—the BAS requirement does not mandate the use of a particular methodology, but it requires at a minimum the use of a scientific methodology; (2) the steps taken in analyzing the scientific information must constitute a reasoned process, with the process evident in the record. Quoting from a 2000 Western Board decision, the Court suggested it is not a reasoned process for a county to “choose its own science over all other science” or “use outdated science to support its choice.”

The Court also cited approvingly to the BAS guidance adopted by the state Department of Community, Trade and Economic Development in 1999 (WAC 365-195-900 through -925), which provide criteria for assessing whether proffered information can be considered scientific information and for engaging in a

“reasoned process.” The rules did not apply to Ferry County’s actions here because the rules took effect after those actions.

Honesty in Environmental Analysis & Legislation (HEAL) v. Central Puget Sound Growth Management Hearings Board, 96 Wn. App. 522, 979 P.2d 864 (June 21, 1999) (amended Aug. 25, 1999). Local governments must give substantial consideration to the best available science when developing critical area policies and regulations.

The best available science requirement is intended to ensure that critical areas regulations are not based on “speculation and surmise.”

Compliance with the best available science requirement may be necessary to satisfy constitutional nexus and proportionality requirements. The Court suggested in dictum that the best available science requirement may have constitutional ramifications with respect to the nexus and rough proportionality limits the United States Supreme Court has placed on governmental authority to impose conditions on development applications.

Growth Management Hearings Board Decisions

Western Washington

WEAN/CARE v. Island County, Order on Reconsideration (Dec. 22, 2008), at 4. [As to the GMA’s requirement for the use of BAS, the Board noted:] ... the adjective “available” generally meaning to be present or ready for immediate use. Therefore, the word “available” would be pointless if construed to mean science that is expected to be available at some future date, especially given the GMA’s requirement to include BAS - as how can the County include that which does not exist?

The Board recognizes that a graduate-level research study, such as the Pantier Thesis, may satisfy WAC 365-195-906’s criteria for a valid scientific process. However, parties should not take for granted that any document will be automatically considered BAS under the GMA just because it is scientific in nature. Petitioners asserting that a jurisdiction has failed to utilize BAS and are countering the jurisdiction’s actions with a competing document must ensure that the document conforms to the WAC criteria for BAS so that it will be properly considered by the Board. Order on Reconsideration at 10.

WEAN wants the Board to ignore all other numbers in favor of the numbers presented in the Pantier Thesis. In other words, WEAN requests that the Board grant the Pantier Thesis the status of BEST available science and argues that Island County was required to use the results of that research when developing its definitional criteria for MF wetlands. RCW 36.70A.172 requires Island County to include and consider BAS when developing critical area regulations. In doing so, the County is permitted to not adopt WEAN’s scientific recommendations and resources in favor of other valid scientific information. In fact, this is the discretion the Legislature has granted the County and to which the Board is directed to defer. It is not for the Board to decide what is the BEST science or to displace the County’s judgment about which science to rely upon with its own. Order on Reconsideration at 12-13.

For further discussion as to qualifications for BAS See *WEAN /CARE v. Island County*, Case No. 08-2-0026c, FDO at 49-54 (Nov 17, 2008).

ADR/Diehl v. Mason County, 07-2-0010, FDO (Jan. 16, 2008), at 7. Criteria for determining which information is BAS are described in the Procedural Criteria for Adopting Comprehensive Plans and Development Regulations, Chapter 365-195 WAC. In WAC 365-195-905(5), there are listed six elements that a local jurisdiction should consider to determine whether the scientific information that has been produced was obtained through a valid scientific process such that it is the best available science. The “characteristics of a valid scientific process” are: peer review, methods, logical conclusions and reasonable inferences, quantitative analysis, context, and references.

[In considering “peer review” as provided in WAC 365-195-906(5)(a)(1), the Board, relying on *Concerned Friends of Ferry County v. Ferry County*, 155 Wn2d 824 (2005) held]: [T]he CTED guidelines provide guidance for the scientific methodology of the evidence. We need not decide whether peer review is mandated in every case. The failure of the CMZ Study to consider the Skillings Connolly reports or the relevant information regarding future flows from the Cushman dam demonstrates that peer review is necessary in this case. FDO at 11-12.

[If a jurisdiction adopts a program as part of its critical areas protections, then the program] [M]ust comply with the provision of the GMA that dictates that “In designating and protecting critical areas under this chapter, counties and cities shall include the best available science in developing policies and development regulations to protect the functions and values of critical areas.” The County cannot make such a change to its critical areas’ protections unless BAS is included in the record ... Here, the record does not include BAS, a reasoned analysis of BAS by the decision makers, or an identification of the risks of departing from BAS and measures to minimize these risks. Therefore, the County’s decision to abandon its dike monitoring program does not comply with RCW 36.70A.172. FDO at 14-16.

ARD/Diehl v. Mason County, 07-2-0006, FDO (Aug. 20, 2007), at 31. WAC 365-195-900 allows counties and cities to use information that local, state, or federal natural resource agencies have determined represented the best available science consistent with criteria set out in WAC 365-195-900 through 365-195-925. Those provisions require that scientific information be produced through a valid scientific process subject to peer review and setting out methods, logical conclusions, quantitative analysis, context, and references.

WEAN v. Island County, 98-2-0023c (2006 Order Finding Compliance of Critical Areas Protections in Rural Lands, September 1, 2006); WEAN v. Island County, 06-2-0012c (FDO, September 14, 2006). Based on the County’s reasoned review of the factors in WAC 365-195-905(5) for determining if the NRCS BMPs constitute best available science; and the assessment of the state agencies with expertise in this area – Ecology, Fish and Wildlife, and CTED⁵ – we find that the NRCS BMPs constitute best available science for the regulation of ongoing noncommercial agricultural practices in Island County, so long as they are accompanied by monitoring and an adaptive management program.

PPF v. Clallam County 00-2-0008 FDO (12-19-00). ‘Available’ means not only that the evidence must be contained in the record, but also that the science must be practically and economically feasible. ‘Best’ means that within the evidence contained in the record a local government must make choices based upon the scientific information presented to it. The wider the dispute of scientific evidence, the broader the range of discretion allowed to local governments. Ultimately, a local government must take into account the practical and economic application of the science to determine if it is the ‘best available’.

⁵ Now, the Washington State Department of Commerce.

Updates to Critical Areas Regulations

Court Decisions

Thurston County v. Western Washington Growth Management Hearings Board, 164 Wn.2d 329, 2008. In a challenge to the expansion of the Thurston County's urban growth area as part of its required update under RCW 36.70A.130, the Court stated:

...a party may challenge a County's failure to revise a comprehensive plan only with respect to those provisions that are directly affected by new or recently amended GMA provisions, meaning those provisions related to mandatory elements of a comprehensive plan that have been adopted or substantively amended since the previous comprehensive plan was adopted or updated, following a seven year update.

Growth Management Hearings Board Decisions

Central Puget Sound

Futurewise, Pilchuck Audubon Society, and the Tulalip Tribes v. Snohomish County, Case No. 15-3-0012c, FDO at 6 (February 17, 2017). Futurewise and Pilchuck Audubon Society challenged the County's update to its critical areas ordinance where there had been no new or recent GMA amendments, no substantive, relevant regulatory amendments, and no new best available science. The Central Puget Sound Growth Management Hearings Board rejected the petitioners' interpretation of the Thurston County Supreme Court decision. However, the Board found that the County had clearly articulated the applicable law: "...where a regulation is wholly unchanged or is amended in a manner unrelated to the substance of the legal issue...and petitioner cites no changed science or GMA mandate, the challenge is time barred." The Hearings Board went on to state:

"...even though the Board rejects Petitioners' interpretation of *Thurston County*, challenges to CAR amendments may be raised if the County failed to consider BAS in substantively amending the CARs. That is, if there has been "new", more recent, science developed applicable to the protection of the functions and values of a particular critical area, an amended CAR would need to reflect consideration of same."⁶

John Postema v. Snohomish County, Case No. 15-3-0011, FDO at pp 5-6 (April 8, 2016). A specific restriction to the Board's scope of review arises when a party challenges a comprehensive plan or development regulation that has been "updated" in response to GMA planning cycles. The Supreme Court has ruled that the periodic updates required in the statute do not create an open season for challenges to previously-adopted provisions that are carried over into the new plan or code.

⁶ Note: This summary is the author's as the Growth Management Hearings Board had not posted a summary in its digest as of the publication of this chapter.

[Citations omitted]. Thus a party may challenge only new or amended plan and regulatory provisions in an update. Challenge to unchanged provisions is time-barred except where required by a recent GMA legislative amendment, new population forecast, or changed science concerning protection of critical area functions and values.

Adaptive Management

Court Decisions

Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board, 161 Wn.2d 415 (2007). The court found that the county's adaptive management and monitoring program was not compliant with the GMA agreeing with the Board below that the ordinance did not have an effective management process that was capable of responding to detected harm. The county had not established benchmarks thus the county could not analyze data gathered in the monitoring program against a sufficient benchmark. The court also found that the proposal to monitor current conditions in an effort to establish benchmarks in the future was not compliant with the GMA and only held the promise of future compliance. To comply with the GMA, local governments must either be certain that their critical areas regulations will prevent harm or be prepared to recognize and respond effectively to any unforeseen harm that arises.

Growth Management Hearings Board Decisions

Western Washington

WEAN/CARE v. Island County, 08-2-0026c, FDO at 75 (Nov. 17, 2008). [B]ecause Island County is well along in establishing a baseline for certain wetland parameters due the completion of the assessment and survey completed for the Phase 1 Report, has adopted a system of protective buffers, and is following Ecology's recommendations on what kind of information to collect and report, the Board finds that an adaptive management and monitoring program with benchmarks and triggering mechanism that the Board found necessary in previous cases [such as *Swinomish Tribe v. Skagit County*, WWGMHB 02-2-0012, *Olympic Environmental Council v. Jefferson County*, WWGMHB 02-2-0015, and *WEAN v. Island County*, WWGMHB Case No. 98-2-0023c] is not critical at this stage of the County's monitoring and adaptive management program.

Evergreen Islands/Futurewise, et al v. Anacortes, Case No. 05-2-0016, Compliance Order, at 5 (April 9, 2007) [The Western Board held that] ...because the City has adopted precautionary measures based on BAS to protect wetlands, [the Board does not] need to reach the issue of whether its adaptive management problem complies with RCW 36.70A.172.

WEAN v. Island County, Case No. 98-2-0023c (2006 Order Finding Compliance of Critical Areas Protections in Rural Lands, September 1, 2006); WEAN v. Island County, WWGMHB Case No. 06-2-0012c (FDO, September 14, 2006). [T]he County's monitoring and adaptive management program for the NRCS BMPs it has adopted to regulate farming activities in critical areas meet the scientific standards for such programs. The County's program sets monitoring parameters that are reasonably related to the

protection of the functions and values of critical areas affected by agricultural activities. The program will establish baseline conditions, monitor water quality according to State standards, tie any contamination to the source, and refer this information to the Planning Director for action.

Stephen F. Ludwig v. San Juan County, Case No. 05-2-0019c (FDO, Compliance Order, April 19, 2006) In light of the limitations of its ground water model and the data assembled to date, the studies done do not conclusively show that the increased densities of the UGA will not result in saltwater intrusion into the water supply. The adaptive management program recommended by the advisory group is a necessary part of the County's protection strategy. Until the County completes these missing pieces, the Lopez Village UGA fails to comply with RCW 36.70A.070(3)(a)-(d), RCW 36.70A.070(1), and RCW 36.70A.020(10) and (12).

Olympic Environmental Council, et al. v. Jefferson County, 01-2-0015 (Compliance Order, 12-4-02). A county which has considered the best available science and adopted less stringent protection standards that balance the need for protection of potable water supplies against the chilling effect of regulation against development has complied with the GMA only if the county also adopts a monitoring strategy that includes stricter development regulations that will be implemented at once if the less stringent protection standards prove to be inadequate to protect against seawater intrusion.

Wetlands

Court Decisions

Yakima County v. Eastern Washington Growth Management Hearings Board, 168 Wn. App. 680 (2012). In updates to its critical areas ordinance, Yakima County adopted standard buffers and adjusted minimum stream and wetland buffers. The ordinance was challenged for failure to include BAS and failure to protect all the functions and values of the critical areas as required by RCW 36.70A.172. Almost all of the scientific studies reviewed by the County recommended buffers greater than those adopted by the County. The Court found that the GMA requires that regulations for critical areas must protect all functions and values of the designated areas and not just some. The Court found that the County had failed to justify its departure from best available science in allowing administratively approved wetland buffers of 25 feet. The Court noted that the vast majority of best available science included in the decision making process recommended much larger minimum buffers and the County gave no basis in its review for the reduction and also didn't require individual adjustments to be based on best available science.

Growth Management Hearings Boards

Eastern Washington

Concerned Friends of Ferry County/Robinson v. Ferry County, 06-1-0003, 2nd Compliance Order, at 19 (March 17, 2009). The County chose to protect wetlands using the DOE's Buffer Alternative 3, which is "[W]idth based on wetland category, intensity of impacts, and wetland functions or special

characteristics.” The intensity of impacts criteria, which are directly related to the frequency and duration of disturbance, is a key component of Alternative 3. By allowing high impact agricultural activities and residential use in its low intensity wetland areas, the County failed to protect the functions and values of wetlands, and failed to provide any reasoned justification, such as scientific-based information, to depart from the DOE’s land use recommendations for Low Intensity Land Use.

Western Washington

WEAN/CARE v. Island County, 08-2-0026c, FDO at 14 (Nov 17, 2008). See also, Dec 22, 2008 Order on Reconsideration for WEAN/CARE v. Island County where the Board clarified its holding in regards to the landscape approach. The guidance offered in [Wetlands in Washington] Volume 2, that was based on the BAS synthesized in [Wetlands in Washington] Volume 1, and was considered by the County, recognizes that viable data was not yet available on wildlife habitat or wildlife corridors. Without the needed scientific data, it is impractical for the County to develop regulations based on a landscape approach. For this reason, the Board finds and concludes that the County’s decision to use a site-based approach to protect wetlands rather than a landscape-based approach is not a clearly erroneous violation of RCW 36.70A.040(3), RCW 36.70A.060, and RCW 36.70A.170(1).

For discussion as to measures for the protection of wetland functions and values, including buffers, mitigation, mature wetland forests, land use intensity and fencing, see FDO at 54-73 and, for further clarification, Dec. 22, 2008 Order on Reconsideration at 6-14 and 17-21.

Olympic Environmental Council v. Jefferson County, 01-2-0015 (FDO, 1-10-02). If the county wishes to adopt less-than precautionary protection standards and Best Management Practices, an adaptive management program must be developed and implemented that would ensure that monitoring of new and existing wells would continue and more strict protective action were planned for and ready to implement at once if the adopted strategies are not adequate.

Central Puget Sound

Seattle Audubon Society, et al v. City of Seattle, 06-3-0024, FDO (12/11/06), at 24. In Category IV wetlands (the most degraded) of less than 100 square feet, the City allows development impacts if they are mitigated by on-site replacement, bioswales, revegetation, or roof gardens. SMC 25.09.160.C.3. However, no buffers are required. In Hood Canal, the Board acknowledged the potential disproportionality of requiring buffers as the means of protecting functions of the smallest, most degraded wetlands. *Hood Canal*, at 19, fn. 23. The Board noted that other mitigating strategies, such as best management practices or compensatory on-site or off-site mitigation might be scientifically supported. *Id.* Here, Seattle has opted for alternative protection mechanisms for these limited cases of small, isolated, low-functioning wetlands. The Petitioners have not carried their burden of proving that the City’s regulations for small Category IV wetlands are clearly erroneous.

[Seattle’s CAO exempts hydrologically isolated wetlands of less than 100 square feet, relying on science that states that wetlands down to 200 square feet may provide habitat for amphibians but that BAS cannot yet assess ecological functions of very small wetlands.] Nevertheless, Seattle has undertaken a study to map wetlands in Seattle, in collaboration with the U.S. Fish and Wildlife Service. Doc. 3h, at 7.

Preliminary findings of the survey identified 733 possible wetlands in the City, of which 197 were estimated to be smaller than 1,000 square feet. *Id.* at 9. Wetlands smaller than 100 square feet – and hydrologically isolated - would necessarily be a smaller subset of the 197. To require the City to address specific harm from possible loss of this subset of very small isolated wetlands, when best available science cannot assess their ecological functions, would stretch the Board’s authority. A fee-in-lieu compensatory mitigation program would of course be preferable, as it would enable the City to mitigate any cumulative impacts that future scientific understandings might bring to light. However, in the context of a narrowly-tailored exemption based on science, the Board is not persuaded that the GMA requires more. FDO, at 26.

The GMA mandates that local governments must protect the function and values of critical areas, and buffers around certain critical areas are scientifically supported as a preferred protection strategy. The GMA does not mandate that critical area buffers must be “no-build” or “no touch” areas. The Board reviews the BAS in the City’s record to determine whether the particular buffer regulation adopted – whether “no build” or fully mitigated – provide protections for functions and values within the scope of the science. FDO, at 35.

Department of Ecology/Department of Community, Trade and Economic Development⁷, et al v. city of Kent, 05-3-0034, FDO (April 19, 2006), at 10. In designating critical areas, cities and counties “shall consider” the minimum guidelines promulgated by CTED in consultation with DOE pursuant to RCW 36.70A.050(1) and (3); .170(2). In particular, wetlands “shall be delineated” pursuant to the DOE manual. RCW 36.70A.175.

Wetlands are defined in Section .030(21) and are required to be delineated according to Ecology’s manual. RCW 36.70A.175. WAC 365-190-080(1) states that city and county designation of wetlands “shall use the definition” in Section .030(21). Expanding the statutory exemption results in a failure of accurate designation and, thus, a failure to protect the functions and values of these critical areas, as required by RCW 36.70A.172(1). FDO, at 26.

Identifying and designating wetlands in order to protect their functions and values is a requirement of the GMA. Jurisdictions are not free to rewrite the statutory definition where its terms are explicit, as they are with respect to the exemption for accidentally-created wetlands. FDO, at 27.

The GMA imposes a requirement to protect critical area functions and values based on best available science. Wetland classification schemes are not necessary, but if used, they must be based on BAS in order to ensure that the related buffer requirements provide the needed protections. FDO at 31.

[T]he Petitioners have met their burden of proof by demonstrating that the City’s record lacks a current scientific basis for its wetlands rating system and that the three tier system is designed “with specific and narrow functions in mind,” rather than protecting “the entirety of functions” of the City’s wetlands. The Board does not find in the City’s record any current science supporting the truncated wetland rating system or indicating how wetland functions will be identified and protected with this system. FDO, at 33.

In reenacting its three-tier wetlands ranking system, Kent failed to account for the full range of wetland functions and therefore failed in its GMA obligation to protect critical area functions and values. [As clarified in the following section, protection of functions could possibly have been provided, even under

⁷ Department of Community, Trade and Economic Development (CTED) is now the Department of Commerce.

a three-tier system, with wider required buffers and other adjustments.] Retaining this outdated system ignores the advances of science and understanding of wetland functions and values that have occurred over the last decade. Retention of an obsolete, albeit “comfortable” system makes a mockery of, and totally ignores, the requirement of RCW 36.70A.130(1) that local cities and counties must update CAOs based upon BAS, which is continually being refined. FDO, at 34.

[T]he complexity of wetlands protection is a function of the interplay between land uses, the specific wetland functions at risk, the degree of effectiveness, and other factors that might be more accurately assessed on a case-by-case basis. Where prescriptive regulation is enacted, a first step is designing a ranking system that reflects the full range of wetland functions and so addresses the protection of all functions. FDO, at 39.

Hood Canal Environmental Council, et al v. Kitsap County, 06-3-0012c, FDO (8/28/06) at 19-20. [The County exempted from regulation very small, truly isolated and poorly functioning wetlands. The County was advised by state agencies that such exemptions were not supported by BAS. The Board reviewed the case of *Clallam County v. Western Washington Growth Management Hearings Board*, 130 Wash. App. 127, 140, 121 P.3d 764 (2005), pertaining to the limitations on exemptions from critical areas regulations.] The Board reads the Court’s opinion to require CAO exemptions to be supported by some analysis of cumulative impacts and corresponding mitigation or adaptive management. Here, Kitsap County has not expanded its small wetlands exemption; in fact the exemption has been somewhat narrowed. But there is no evidence in the record of the likely number of exempt wetlands, no cumulative impacts assessment or adaptive management, and no monitoring program to assure no net loss. In light of the Court’s guidance in *Clallam County*, which the Board finds controlling, the Board is persuaded that a mistake has been made; Kitsap’s wetland exemption is clearly erroneous.

Fish and Wildlife Habitat Conservation Areas

Court Decisions

Ferry County v. Concerned Friends of Ferry County, 155 Wn.2d 824, 123 P.3d 102 (Nov. 17, 2005). In 1997, a citizens group filed a petition with the Eastern Board alleging the County had failed to include best available science (BAS) when adopting policies to protect two types of critical areas: wetlands and fish and wildlife habitat conservation areas. The Board agreed and found the County in noncompliance. After some delay, the County responded by amending its comprehensive plan policies designating fish and wildlife habitat conservation areas. The County chose not to follow the recommendations provided in materials produced by the state Department of Fish and Wildlife, instead relying on the recommendations of a paid consultant.

The citizens group alleged the consultant’s recommendations were not based on BAS and were inconsistent with other science in the record. Again, the Board agreed and found the County in continued noncompliance. The Superior Court and Court of Appeals affirmed. The Court of Appeals held the Board’s decision was supported by substantial evidence in the record, and it explained how the County’s consultant relied on only two sources to determine which species required habitat protection: a guide to breeding birds in Washington and conversations with an unidentified state biologist. The consultant did not conduct any field observations, did not consult with other experts with knowledge of the region, and did not engage in any other “reasoned analysis.”

The Supreme Court accepted review to decide whether substantial evidence supported the Board's finding that the County did not base its species listing on the best available science. The Court concluded:

- Compliance with the GMA's best available science requirement must be supported by evidence in the record. Noting the absence of any statutory definition, the Court turned to the Growth Management Hearings Boards' interpretations of the BAS requirement as an indication of the operative standards at the time of Ferry County's actions in this case. The Court concluded the Boards "at least required local governments to produce valid scientific information and consider competing scientific information and other factors through analysis constituting a reasoned process."⁸ The Court held that regardless of the precise definition applied, the process undertaken and the information considered by Ferry County in this case did not rise to the level of BAS.
- The Court appears to have used a two-part test to assess the County's compliance with the GMA's BAS requirement: (1) the County must rely on scientific information—the BAS requirement does not mandate the use of a particular methodology, but it requires at a minimum the use of a scientific methodology; (2) the steps taken in analyzing the scientific information must constitute a reasoned process, with the process evident in the record. Quoting from a 2000 Western Board decision, the Court suggested it is not a reasoned process for a county to "choose its own science over all other science" or "use outdated science to support its choice."⁹

The Court also cited approvingly to the BAS guidance adopted by the state Department of Community, Trade and Economic Development in 1999 (WAC 365-195-900 through -925), which provide criteria for assessing whether proffered information can be considered scientific information and for engaging in a "reasoned process." The rules did not apply to Ferry County's actions here because the rules took effect after those actions.

Growth Management Hearings Boards

Eastern Washington

Confederated Tribes and Bands of the Yakama Nation v. Yakima County, 10-1-0007:

[The] Yakima County map, together with the various performance standards, definitions, and policy statements in Yakima County Code Chapter 16C.06, constitutes Yakima County's designation of fish and wildlife habitat conservation areas for aquatic species located outside of [Shoreline Management Act] jurisdiction, as contemplated by the GMA and reflecting a consideration of the applicable Department of Commerce Guidelines. Petitioner offered no evidence that this multi-layered approach to habitat designation fails to satisfy the requirement in RCW 36.70A.170(1). Final Decision and Order (August 17, 2010), at 9.

⁸ 155 Wn.2d at 835, ¶ 21.

⁹ *Id.* at 837-38, ¶ 28.

Endangered, Threatened or Sensitive Species

Concerned Friends of Ferry County v. Ferry County, 97-1-0018c (January 23, 2013) Order Finding Continuing Noncompliance at p. 11. [In addressing bull trout critical habitat, the Board stated: [T]he absence of federally-designated critical habitat is not a determinative fact for purposes of a county's GMA designation of areas where endangered, threatened or sensitive species have a "primary association."

Futurewise v. Stevens County, 05-1-0006, FDO, (Jan. 13, 2006) In designating fish and wildlife habitat conservation areas, the County must at least designate "areas with which endangered, threatened, or sensitive species have a primary association and the designation" must be based on best available science as required by 36.70A.172.

The County has done an admirable job of requiring pre-set buffers or alternative buffers set on a case by case basis, and requiring a report from a qualified professional to set management recommendations, if a development is within "a mapped critical habitat area" for endangered, threatened or sensitive species. But the County falls short by defining "critical habitat" as "only those areas designated by a state or federal agency through a formal statutory or rule-making process.

If Stevens County does not designate fish and wildlife conservation areas for certain listed species using BAS and all the information available from WDFW, but neighboring counties, such as Ferry County and Pend Oreille County do, then there would be a disconnect in protection for the listed species and extinction a real possibility. To protect endangered, threatened, or sensitive species and their habitat, such as the lynx, which knows no country, state or county boundary, there must be intergovernmental cooperation and coordination, as stated in WAC 365-190-080(5).

Simply put, the federal government can designate critical habitat for endangered, threatened or sensitive species, but under a separate rule-making process and, for the most part, only for federal lands. Therefore, the U.S. Fish and Wildlife Service rule-making does not have an effect on most state or Stevens County lands.

The Board asks the following question. If the state does not have the legislative authority to designate critical habitat for endangered, threatened or sensitive species through a rule-making process and the federal government's rule-making for endangered, threatened or sensitive species habitat is separate from its listed species, then what jurisdiction is responsible to protect the endangered, threatened or sensitive species habitat? This question is answered by Mr. Kevin Robinette in his e-mail to Ms. Wagenman on July 28, 2004:

"Since Critical Areas are designated by Counties and Cities under the Growth Management Act (with input from WDFW and the public), the formal rule making process is that of the local municipalities."

Since there is no "formal statutory or rule-making process for endangered, threatened or sensitive species critical habitat", SCC 13.10.034(3)(C) fails to protect Fish and Wildlife Habitat Conservation Areas as required by the GMA. The protection measures are based on a specific "mapped critical habitat area".

As required by the GMA, the County must protect listed species and their habitat. Even though the County has protected five of the six listed species to some degree by protecting riparian areas, wetlands,

lakes and waterways, it has not fully complied by protecting all fish and wildlife conservation areas for listed species using BAS. If the County had not added SCC 13.10.034(3)(C) and if they had referenced and adopted the use of the WDFW's Priority Habitats and Species Database maps, which include polygon habitat areas for species such as the lynx, as the County did with SCC 13.10.034(4), Mapped Point Species Observations, it would be in compliance. But the County did not.

CFFC/Robinson v. Ferry County, 97-1-0018, Compliance Order, at 15 (Feb. 13, 2009).

A nomination process for habitats and species of local importance is necessary for listing those habitats and species which become candidates in the future, not as the sole process to protect those already in danger. It is not the responsibility of the WDFW or any other state agency, as suggested by the County, to petition the County to adopt a habitat, species or both. The GMA specifically requires the County to protect fish and wildlife conservation areas, thus endangered, threatened and sensitive species and habitats and species of local importance.

Polygon and point data are based on actual field surveys and observations of the species ... WDFW claims if a habitat is mapped, then a species inhabits or has been known to inhabit that area ... The Board has held that failing to protect both point and polygon data violates the GMA. Compliance Order, at 18.

As to point and polygon validations in Section 9.04, the Board finds this section is out of compliance with RCW's 36.70A.060 and 36.70A.172 for failure to protect endangered, threatened and sensitive species by requiring WDFW, a state agency without authority to enforce local CAO provisions (or any Ferry County code provisions, even if they relate to fish and wildlife), to validate point observations and polygon observations, which would only then trigger protection measures. Compliance Order, at 18.

Habitats and Species of Local Importance

Loon Lake Property Owners Assoc., et al. v. Stevens County, 03-1-0006c, 3rd Order on Compliance, (Dec. 21, 2005). The County is required to make a "reasoned analysis on the record, including best available science and other local factors" in determining whether or not a habitat or species should be designated as Habitat or Species of Local Importance. *Island County Citizens Growth Management Coalition v. Island County (supra)*. The Growth Management Act requires the record to include best available science in developing policies and development regulations to protect the functions and values of critical areas, which Habitats and Species of Local Importance are an important part. RCW 36.70A.172(1).

Case law has made it perfectly clear that legislative bodies, such as counties and cities, must substantially consider best available science to support their findings concerning the nominations of Habitat of Local Importance and/or Species of Local Importance. In addition, a local jurisdiction is not constrained to adopt only the science recognized by state or federal agencies, but a variation from formally identified BAS must be supported in the record by evidence that also meets the BAS standard (see WAC 365-195-905).

Local governments must “analyze the scientific evidence and other factors in a reasoned process.” *Easy v. Spokane Co.*, EWGMHB #96-1-0016, 1997 WL 191457, at 6. Legislative bodies must also be cautious about using their own science just to support their own agenda:

“Under *Heal v. CPSGMHB*, Court of Appeals, Cause #40939-1-1 (June 21, 1999), the County cannot choose its own science over all other science and cannot use outdated science to support its choice.” *Island Co. Citizens’ Growth Management Coalition, et al, v. Island County*, et al, WWGMHB Case No. 98-2-0023c, Compliance Order (March 6, 2000).

In addition, the Board takes note from *Clark County Natural Resources Council, et al. v. Clark County*, et al., WWGMHB Case #96-2-0017, Compliance Order (Nov., 1997), that science determines what habitat and species should be designated Habitat and Species of Local Importance, not whether the nominated habitat or species is listed by the WDFW as priority habitat and species. The Western Board held the following:

“In the final order in this case, we noted that the overwhelming scientific evidence in the record virtually required establishment of the three FWHAs of local importance that were not otherwise previously designated by DFW as priority habitat and species areas.”

Ephemeral Streams

Hazen, et al v. Yakima County, 08-1-008c (April 5, 2010) , FDO at 34. [In regards to Ephemeral Streams] the GMA itself does not define fish and wildlife habitat. WAC 365-190-130(2)(f) states that “waters of the state” must be considered for designation as habitat. An ephemeral stream meets the definition of “waters of the state” and thus was required to be considered for designation.

[In finding the County’s action in not designating ephemeral streams as a critical area failed to comply with the GMA, the Board noted] [F]or Yakima County, ephemeral and intermittent streams comprise a large portion of the County’s watershed and contribute to the hydrological, biogeochemical, and ecological health of the watershed. Wes Hazen/Futurewise emphasizes the important role small streams play in the overall functioning of a stream corridor system, even those that have no fish influence because of their impact on downstream habitat quality, primary due to sediment flow regulation ... The role of small streams is further supported by the County’s own BAS.

Western Washington

Endangered, Threatened or Sensitive Species

Whidbey Environmental Action Network v. Island County, 14-2-0009: WAC 365-190-130(2) directs jurisdictions to consider and designate areas where endangered, threatened, and sensitive species have a primary association. The County’s prairies have such an association with the three referenced [ETS] plant species. Final Decision and Order, June 26, 2015, p. 34.

[Citing WAC 365-190-130(2)(b)’s direction to consider habitats and species of local importance for classification and designation, the Board found the County had failed to protect critical areas by its decision to] not designate Westside prairies, Oak woodlands and herbaceous balds as habitats of local

importance [notwithstanding] the record establishe[d] these areas constitute rare or vulnerable ecological systems and habitat or habitat elements. Final Decision and Order, June 26, 2015, p. 37.

Habitats and Species of Local Importance

Friends of the San Juans, et al. v. San Juan County, 13-2-0012c: [T]he decision on whether or not to designate species or habitats of local importance lies with the County in accordance with WAC 365-190-130. FDO (September 6, 2013), at 39.

The Board is unaware of any requirement in the GMA which mandates the establishment of a process for designating new habitats of local importance. FDO (September 6, 2013), at 42.

ICCGMC v. Island County, 98-2-0023c, Compliance Order, 11-26-01. A county has wide discretion in determining which plant species and/or habitats have sufficient local importance to warrant designation and protection as species of local importance.

Central Puget Sound

Citizens for a Health Bay v. City of Tacoma, 06-3-0001, FDO (11-1-07), at 7-9. [The Board contrasted the Tahoma Audubon Society v. Pierce County case (CPSGMHB No. 05-3-0004c, FDO, (Jul. 12, 2005), to the present controversy noting that here, the City had designated all its marine shorelines as FWHCAs, based upon salmon habitat protection. The Board noted that Petitioners had failed to document the presence of the “specific habitats or species” that needed designation; and that Petitioners had failed to indicate a different strategy that would be necessary to protect such areas beyond the designation assigned by the City.] Petitioners have put nothing in the record here suggesting that, if science based regulations are adopted to protect salmon habitat, such regulations will not be sufficient to protect other marine resources which they argue should be identified.

The Board takes official notice of the state and federal focus on Puget Sound and on local salmon species. In the last eight years, the federal government has listed several species of Puget Sound anadromous fish under the Endangered Species Act (Citation omitted). In response, communities around the Sound, through collaborative watershed planning and other efforts, have sponsored studies and nearshore inventories to learn how best to protect salmon and other aquatic resources. The Governor has launched an initiative to restore Puget Sound, supported by the Legislature with the creation of the Puget Sound Partnership. One key component of the Puget Sound strategy is the expectation that each city and county has enacted science-based development regulations that protect marine shoreline habitats, as required by the Growth Management Act. RCW 36.70A.480(4), .172(1). FDO, at 10-11.

The Legislature set December 1, 2005 (extended to December 1, 2005), as the deadline for Central Puget Sound cities and counties to update their critical areas ordinances in light of the best available science. . . . The City acknowledged that it has not yet complied with the statutory mandate with respect to regulations for marine shorelines. Thus habitat for endangered salmon, and presumably other marine resources, is not being protected along Tacoma shorelines, although protective regimes have been adopted form marine shores in adjacent and cross-Sound jurisdictions. FDO, at 11.

Tahoma Audubon Society, et al v. Pierce County, 05-3-0004c, FDO July 12, 2005, at 37. [Pursuant to RCW 36.70A.480] the Board agrees with Pierce County that marine shorelines are not per se fish and wildlife habitat conservation areas [critical areas] The Board then asks (1) whether Pierce County used best available science to protect critical fish and wildlife habitat conservation areas on its marine shorelines; (2) whether Pierce County's regulations gave priority to anadromous fish; (3) whether Pierce County's regulations protect the functions and values of marine shorelines as salmon habitat, and (4) whether a vegetative buffer is required. [The County's CAO] identifies a number of critical fish and wildlife conservation areas on its marine shorelines. These include eelgrass beds, shellfish beds, surf smelt spawning areas and the like. However, [the CAO] was drafted to designate and protect all Pierce County marine shorelines. When the County Council voted to remove the marine shorelines from critical areas, it did so (a) without ascertaining whether the remaining protected salt-water areas included all the areas important for protection and enhancement of anadromous fisheries and (b) without assessing whether the overlay of elements remaining in the CAO [i.e. steep slopes, erosion areas, eelgrass beds, etc.] would protect the "values and functions" necessary for salmon habitat. [A discussion of WEAN v. WWGMHB, 122 Wn. App. 173, (2004) follows.]

Critical Aquifer Recharge Areas

Growth Management Hearings Board Decisions

Eastern Washington

Citizens for Good Governance v. Walla Walla County, 09-1-0013: The Board remanded to the County to achieve compliance on three issues: (1) Include the Best Available Science regarding horizontal permeability underlying the airport; and determine whether or not the aquifer contamination risk at the airport satisfies the GMA's standard of being a vulnerable aquifer -- as indicated by the combined effect of land uses and hydrogeologic conditions that contribute directly or indirectly to or facilitate contamination of groundwater; (2) Determine whether or not the Shallow Gravel Aquifer is vulnerable to contamination conveyed through Zone 2 recharge areas; and if vulnerability is found, classify/designate Zone 2 recharge areas according to whether or not the Shallow Gravel Aquifer is vulnerable to contamination from identified Zone 2 recharge areas; (3) Either amend its regulations as to aquifer contamination threats from pre-existing non-conforming uses to reflect the inclusion of Best Available Science, or provide a reasoned justification for departing from the Best Available Science as to aquifer contamination threats from pre-existing non-conforming uses within CARAs. Compliance Order (April 5, 2012), page 27.

The Board found and concluded that Walla Walla County had included the Best Available Science in designating and protecting Critical Aquifer Recharge Areas and had achieved compliance with the Growth Management Act as to the GMA's requirements to designate and protect critical areas. *Order Finding Compliance [Re: Critical Aquifer Recharge Areas] (June 3, 2013).*

Hazen, et al. v. Yakima County, Coordinated Cases 08-1-0008c and 09-1-0014, Coordinated [Compliance Order/Issuance of Stay](#) (April 27, 2011) at 10.: WAC 365-190-080(4) states that counties and cities should designate critical areas by using maps and performance standards, and counties and cities should clearly state that maps showing known critical areas are only for information or illustrative purposes ...

[during its compliance efforts, Yakima County's CARA map, which was based on older, superseded science, was not reviewed or revised to reflect updated best available science, thus] ...Without a mapping update to include Best Available Science, the pre-existing CARA designation map does not comply with the GMA.

Citizens for Good Governance v. Walla Walla County, 09-1-0013 Final Decision and Order at 6-7 (May 3, 2010). The record reveals that Walla Walla County relied exclusively upon pre-existing "Wellhead Protection Areas" as satisfying the GMA requirement to designate Critical Aquifer Recharge Areas. This approach is not supported by the science. The scientific information does not indicate that using wellhead protection areas alone is sufficient to protect the large Gravel Aquifer. Individual wellhead protection areas may protect some wells that constitute regulated public water systems, but there is no evidence in the record that this approach protects the large number of unregulated individual or exempt wells, nor is there any evidence that this approach is sufficient to protect the larger Gravel Aquifer which underlies a land area of about 190 square miles.

The WAC 365-190-080 guidelines state that to determine the location of aquifer recharge areas, counties may use existing studies or may use existing soil and surficial geologic information. The record does not show that Walla Walla County made any such determinations as to the Gravel Aquifer recharge areas. In the absence of basic locational information on specific recharge areas, the County cannot effectively determine which areas are "critical" to preventing adverse impacts to the aquifer. Moreover, the record does not show a consideration of the WAC guidelines which prescribe (1) an evaluation of the threat of ground water contamination from existing land use activities, and (2) the designation of aquifer specific recharge areas based upon vulnerability of the aquifer to contamination. Final Decision and Order at 7-8.

The WAC 365-190-080 guidelines state that to determine the location of aquifer recharge areas, counties may use existing studies or may use existing soil and surficial geologic information. The record does not show that Walla Walla County made any such determinations as to the Gravel Aquifer recharge areas. In the absence of basic locational information on specific recharge areas, the County cannot effectively determine which areas are "critical" to preventing adverse impacts to the aquifer. Moreover, the record does not show a consideration of the WAC guidelines which prescribe (1) an evaluation of the threat of ground water contamination from existing land use activities, and (2) the designation of aquifer specific recharge areas based upon vulnerability of the aquifer to contamination. Final Decision and Order at 7-8.

[T]he County did not use best available scientific information about aquifer contamination threats to inform its CARA designation process, nor did it use a reasoned process to analyze best available scientific information regarding identified recharge areas for the Gravel Aquifer. Because Walla Walla County has not properly designated CARAs for the Gravel Aquifer, it has not followed the GMA's requirement to protect the functions and values of this type of critical area. Final Decision and Order at 10.

[T]he GMA does not necessarily require designation of the entire 190 square mile aquifer. Rather, the GMA requires designation and protection of "areas with a critical recharging effect on aquifers used for potable water." The extent of these designated critical recharge areas, as distinct from the underlying aquifer itself, is determined through a substantive consideration of Best Available Science, which has not yet occurred in Walla Walla County. Final Decision and Order at 10.

Hazen, et al v. Yakima County, 08-1-0008c, FDO at 22 (April 5, 2010). The GMA includes CARAs under its definition of critical areas and defines these as being “areas with a critical recharging effect on aquifers used for potable water.” An aquifer is an underground geologic formation of rock, soil, or sediment that is naturally saturated with water and serves as a water supply for wells. Recharge - the infiltration of water into the aquifer – is essential for the continued use of the aquifer. Thus, the key function and value of CARAs is to provide clean, safe, and available drinking water by protecting areas so as to permit recharge and preventing contamination of the aquifer.

WAC 365-190-040(5)(b) goes on to state in circumstances where critical areas cannot be readily identified, these areas should be designated by performance standards or definitions and WAC 365-190-040(5)(c) provides that designation could be satisfied by the adoption of a policy statement. It would appear to the Board that CARAs expressly fall within this realm because, unlike wetlands or streams which can be visually delineated, the underground nature of an aquifer provides for a more challenging determination as to their location and boundaries. FDO at 22-23.

Western Washington

Stephen F. Ludwig v. San Juan County, Case No. 05-2-0019c (FDO, Compliance Order, April 19, 2006) In light of the limitations of its ground water model and the data assembled to date, the studies done do not conclusively show that the increased densities of the UGA will not result in saltwater intrusion into the water supply. The adaptive management program recommended by the advisory group is a necessary part of the County’s protection strategy. Until the County completes these missing pieces, the Lopez Village UGA fails to comply with RCW 36.70A.070(3)(a)-(d), RCW 36.70A.070(1), and RCW 36.70A.020(10) and (12).

Olympic Environmental Council, et al. v. Jefferson County, 01-2-0015 (Compliance Order, 12-4-02). A county which has considered the best available science and adopted less stringent protection standards that balance the need for protection of potable water supplies against the chilling effect of regulation against development has complied with the GMA only if the county also adopts a monitoring strategy that includes stricter development regulations that will be implemented at once if the less stringent protection standards prove to be inadequate to protect against seawater intrusion.

Both the Growth Management Act and the county’s own comprehensive plan require a county to protect not only those places where freshwater enters the ground, but also the aquifers that they feed. The county must classify and designate seawater intrusion areas as critical areas, including best available science in a substantive way.

Although the county claimed that the data in the record were not adequate to designate vulnerable seawater intrusion areas, that does not nullify the county’s obligation to take action to designate and protect CARAs including aquifers used for potable water.

A county’s decision to use a different approach than previously adopted does not necessarily make that choice non-GMA compliant. However, the new approach must comply with the Act. The county’s approach of failing to designate any vulnerable seawater intrusion areas as critical areas does not comply with the Act.

It makes great sense for the intergovernmental planning group to study water issues on a watershed basis. However, that group has no authority to take binding action on this issue. The county cannot abdicate its GMA responsibility for seawater intrusion designation to the planning group.

Olympic Environmental Council v. Jefferson County, 01-2-0015 (FDO, 1-10-02). We are not persuaded by a county's argument that it has no authority to impose some form of water conservation measures, limiting the number of new wells allowed, or other measures to reduce the withdrawal of groundwater from individual wells if that withdrawal would disrupt the seawater/freshwater balance and lead to greater seawater intrusion. The exemption of RCW 90.44.050 does not limit a local jurisdiction from complying with its mandate for protection of groundwater quality and quantity under the GMA.

Geologically Hazardous Areas

Court Decisions

Olympic Stewardship Found. v. Western Washington Growth Management Hearings Board, 166 Wn. App. 172 (2012), *review denied*, 174 Wn.2d 1007 (2012). Olympic Stewardship Foundation challenged Jefferson County's regulations which restricted vegetation removal in zones surrounding rivers at high risk for channel migration (channel migration zones or CMZ). The CMZ was designated as a critical area under the "geologically hazardous areas" component of the definition. The Foundation challenged the vegetation removal restrictions as not including best available science alleging that the County had failed to develop a record showing how the science considered supported the vegetation removal record. The court held that "including" best available science does not impose a duty on local governments to describe each step of their deliberative process but rather the local government is required to address on the record the relevant sources of best available science included in their decision-making.

Growth Management Hearings Board Decisions

Western Washington

OSF/CPCA v. Jefferson County, 08-2-0029c, FDO, at 28 (Nov. 19, 2008). [In determining if the County's action of designating [channel migration zones] as a Geological Hazard Area was clearly erroneous, the Board concluded:] ... designation of [geologically hazardous areas] is based, in part, on an analysis of historical activity of the site and the potential or susceptibility of the site for future geological instability based on historical data in combination with present day scientific methodologies ... It is this futuristic potential or susceptibility of damage that creates the risk for which critical area designation as a GHA is needed.

[In responding to Petitioner's assertion that the functions and values of a designated critical area must presently exist, the Board stated:]... the Board disagrees with Petitioner's contention that the functions and values of a [channel migration zone] do not presently exist and therefore the GMA does not authorize the designation. To support this statement would be contrary to the very functions and values underlying a [geologically hazardous area] - to protect against future loss of life and/or property due to the geological event being addressed. In other words, the functions and values sought to be protected

by [geologically hazardous areas] are the protection of life and property and those functions and values exist today. Here, Jefferson County, in considering the geological consequences of channel migration, namely the potential for stream bank erosion and channel migration within the historical and projected path of a stream or river, appropriately designated [channel migration zones] as a type of [geologically hazardous area] given the geological nature of the impacts. As such, the County's designation of [channel migration zones] as a critical area is appropriate under the GMA. FDO, at 29.

See FDO at 31-39 for general discussion on [channel migration zones as a type geologically hazardous area] including designation, risk assessment, and development standards.

Diehl v. Mason County, 95-2-0073 (Compliance Order, 7-13-01). Reduction of distance from a [geologically hazardous area] location that required geological reports and assessments, was not in conformance with BAS and did not comply with the Act.

Diehl v. Mason County, 95-2-0073 (Compliance Order, 3-22-00). A requirement for geotechnical assessment which does not include definitive standards in a DR against which the assessment can be measured does not comply with the GMA.

CCNRC v. Clark County, 96-2-0017 (FDO, 12-6-96). The County's failure to designate geologically hazardous areas other than those involving 40% plus slopes under the record in this case did not comply with the GMA.

Central Puget Sound

Friends of Pierce County, et al. v Pierce County, 12-3-0002c, FDO July 9, 2012, pg. 98, 103: There is no GMA directive that prohibits development [in a lahar or liquefaction zone] because of geological risks. While hazard areas are defined as areas that are not suited to development consistent with public health and safety, the GMA definition by itself does not impose an independent duty upon the County to protect life and property by prohibiting development.... The Board notes in the case of flood risks, the Legislature has defined the 100-year floodplain as mapped by FEMA as setting the bounds for more intensive development. No such bounds have been legislated into the GMA for other geological hazards.

Seattle Audubon Society, et al v. City of Seattle, 06-3-0024, 5/29/07 Order Finding Compliance, at 4. The Board finds that the City has designated areas at risk of more remote geologic hazards, as set forth in the Board's FDO in accordance with CTED's guidelines. The City has adopted various state and federal maps to designate these geologically hazardous areas, and has enacted a procedure, including public participation, allowing for the update of these maps by Director's rule. [These actions achieve compliance with the Act.]

Sno-King Environmental Alliance, et al v. Snohomish County, 06-3-0005, FDO (7/24/06), at 15. [A jurisdiction's] duty and obligation to protect the public from potential injury or damage that may occur if development is permitted in geologically hazardous areas is not rooted in the challenged GMA critical area provisions. Rather, providing for the life safety of occupants and the control of damage to structures and buildings is within the province of building codes. Chapter 19.27 RCW.

There is no disagreement that construction of buildings and structures near a seismic hazard area is governed by the IBC [2003 International Building Code], as adopted by the State Building Code, and

applicable to Snohomish County. However, the County has identified a “regulatory gap” which is characterized as follows: The IBC’s seismic provisions only apply to faults that have been verified and mapped by the USGS. [The newly discovered faults and inferred faults have not yet been mapped by USGS.] Therefore, the IBC provisions are not directly applicable. Consequently, to protect the public and property, the County has taken the action of adopting the Seismic Ordinance to fill this gap. [Petitioners do not dispute the gap, but rather contend that the regulations do not go far enough. The Board concluded that the County’s adoption of the Seismic regulations was a responsible and reasonable action in face of the regulatory gap identified.] FDO, at 15-16.

The Board finds and concludes that there is no discrepancy between the County’s definition of “seismic hazard areas” and the GMA’s definition of “geologically hazardous areas.” While the GMA definition imposes no independent duty upon the County to protect life safety, the Board notes that the County’s definition falls within the broader GMA definition and is more protective than that included in the IBC, since it includes protections for “inferred fault” areas. FDO, at 16.

Fuhriman, et al v. City of Bothell, 05-3-0025c, FDO (8/29/05), at 34-36. [The City designated a 357 acre area with an R-40,000 minimum lot size – Fitzgerald Subarea. The basis for the designation to protect large-scale, complex, high rank value critical areas that could not be adequately protected by existing critical areas regulations.] It seems apparent to the Board that, at least for the 357-acres disputed here, the City’s present critical areas regulations were believed to be inadequate in protecting the critical areas at issue. This is evidenced by the Litowitz Test Report [which identified the area as having large-scale, complex and high rank value critical areas] and the fact that even the Planning Commission [which did not support the designation] recommended a “special overlay designation” and “special protections and regulations” to be developed to adequately protect the critical areas in question. The Commission’s recommendation by itself evidences perceived inadequacies in the City’s existing critical areas regulations that can support the added protection of the R136 40,000 designation. Further, the overall size and interconnectedness of the affected hydrologic system is well documented; it is not inappropriate to look at a sub-basin or related hydrologic feature to assess critical areas in a specific area. [The Board upheld the R-40,000 designation for the affected area.]

[The City designated a portion of the Norway Hill area with an R-40,000 minimum lot size. Steep slopes, erosive soils, difficulty in providing urban services and connection to an aquifer and salmon stream were the basis for the designation. The Board noted that only a portion of the area designated was within the city limits, the remainder being within the unincorporated county, but within the UGA and planned annexation area of the City.] There is no question that the area designated R-40,000 within the Norway Hill Subarea is not a large scale, complex, high rank order value critical area as analyzed in the Board’s Litowitz case. The City’s Litowitz Test Report confirms this conclusion. However, in a recent Board decision [Kaleas, 05-3-0007c, FDO.], the Board acknowledged that the critical areas discussed in the Litowitz case, and several cases thereafter, were linked to the hydrologic ecosystem, and that the Board could conceive of unique geologic or topographical features that would also require the additional level of protection of lower densities in those limited geologically hazardous landscapes. [To qualify, geologically hazardous critical areas would have to be mapped, and use best available science, to identify their function and values. The Board concluded that the geologically hazardous areas on Norway Hill were mapped, and the area contained aquifers connected to salmon bearing streams. The Board upheld the R-40,000 designation for the affected area.] FDO, at 37-39.

King County, et al v. Snohomish County, 05-3-0031, 8/8/05 Order on Motions, at 6. [A seismic ordinance regulating conditions on construction in seismic areas is a development regulation subject to review by the Board.

Tahoma Audubon Society, et al v. Pierce County, 05-3-0004c, FDO July 12, 2005, at 23-25. The Board finds that “best available science’ was included in the designation of Lahar Inundation Zones and Lahar Travel Time Zones. To the extent the new regulations were built around that mapping exercise, they reflect best available science as required by RCW 36.70A.172(1). . . . The more troubling question is what land use regulations are required, once a hazard is acknowledged. . . . The County reasons that the only remaining question – reasonable occupancy limits [for a covered assembly in the lahar zone] – is a policy choice based on weighing risks. In the County’s calculus, the low frequency of lahar events, the likelihood of early warning, and the opportunity for evacuation must be weighed against the economic opportunity presented by new tourist facilities. . . . The Board agrees with Pierce County that land use policy and responsibility with respect to Mount Rainier Case II lahars – “low probability, high consequence” events – is within the discretion of the elected officials; they bear the burden of deciding “How many people is it okay to sacrifice.”

The GMA defines geologically hazardous areas as areas that are not suited to siting of . . . development consistent with public health or safety concerns,” [RCW 36.70A.030(9)], but there is no affirmative mandate associated with this definition except to “protect the functions and values.” Petitioners have not persuaded the Board that the requirement to protect the functions and values of critical areas has any meaning with respect to volcanic hazard areas or that the GMA contains any independent life-safety mandate. FDO, at 25.

The analogy between floods and lahars is limited. The scientific references linking 100-year floods and Case II Lahars refer only to periodicity, not to depth or viscosity or rate of flow ore even predictability. . . . The GMA imposes no duty on the County to treat both hazards alike in its development regulations just because their frequency may be analogous. FDO at 26.

The Board reads the cautionary approach recommended in the CTED guidelines [WAC 365-195-920] to refer to situations where incomplete science may result in inadequate protection for the “functions and values” of critical areas. In this case, we are not concerned with protecting the “function and values” of volcanic debris flows. Here, the science of lahar inundation hazards on Mount Rainier is sufficiently detailed; the question dealt with in the County occupancy regulations is the feasibility of rapid evacuation from sites very close to the mountain – identified by the URS report as an engineering and life-safety question rather than an issue of vulcanology. FDO, at 28.

Frequently Flooded Areas

Growth Management Hearings Board Decisions

Western Washington

OSF/CPCA v. Jefferson County, 08-2-0029c, FDO, at 27 (Nov. 19, 2008). The Board views the GMA as effectively establishing two categories of critical areas – those areas whose functions and values are protected for the beneficial services they provide (i.e. Wetlands, FWHCAs, Aquifer Recharge Areas) and those areas for which protection is needed due to the threat these areas pose to persons and property (i.e. Frequently Flooded Areas, GHAs).

See FDO at 31-39 (Nov. 19, 2008) for general discussion on [channel migration zones] including designation, risk assessment, and development standards.

ADR/Diehl v. Mason County, 07-2-0010, FDO, at 19 (Jan. 16, 2008). The issue of allowing new residential construction in frequently flooded areas is a question of protection of critical areas. Pursuant to WAC 365-195-825(2)(b), “protection” of critical areas also means “to safeguard the public from hazards to health and safety.” Whether to allow new residential construction in a frequently flooded area is a matter of hazards to public health and safety. Therefore, the adoption of regulations allowing such residential construction must include BAS.

Futurewise v. Skagit County, 05-2-0012c, Consolidated FDO/Compliance, at 17 (April 5, 2007). We find nothing in RCW 36 70A.110 that prohibits the inclusion of a critical area or a floodplain in an [urban growth area].

Diehl v. Mason County, 95-2-0073c (Compliance Order, 6-27-01). In an area where dike failure is common, under the GMA a county has the duty to identify, inspect, monitor, and impose restrictions or conditions on the maintenance of existing dikes.

A map which is an intricate part of a regulatory scheme to preclude new construction in certain FFAs must be adopted by formal action of the local government.

A [development regulation] that precludes densities more intense than 1 DU per 10 acres for [agricultural resource lands] within [frequently flooded areas] complies with the Act.

[A frequently flooded area] designation must be clearly mapped and must include buffers sufficient to protect critical area functions and values.

Diehl v. Mason County, 95-2-0073 (Compliance Order, 9-6-96). The lack of a DR on minimum lot size and density requirements in FFAs did not comply with the GMA.

Ordinances which merely regulated building requirements within a floodplain and did not address issues of whether and under what conditions building should occur in a floodplain did not comply with the GMA. (FDO, 1-8-96)

Central Puget Sound

Tahoma Audubon Society, et al v. Pierce County, 05-3-0004c, FDO July 12, 2005, at 26. The analogy between floods and lahars is limited. The scientific references linking 100-year floods and Case II Lahars refer only to periodicity, not to depth or viscosity or rate of flow or even predictability. . . The GMA imposes no duty on the County to treat both hazards alike in its development regulations just because their frequency may be analogous.

Critical Areas and Shoreline Master Programs

Court Decisions

Kitsap Alliance of Property Owners v. Central Puget Sound Growth Management Hearings Board, 160 Wash. App. 250 (2011). In response to the decision in *Futurewise v. W. Wash. Growth Management Hearings Board*, 164 Wn.2d 242 (2008), in 2010 the Legislature amended RCW 36.70A.480 to clarify that development regulations adopted under the GMA apply to protect critical areas within shorelines until the Department of Ecology approves a shorelines master program, update, or segment related to critical areas. Once Ecology approves the master program, critical areas within shorelines are protected under the SMA. The court recognized the Legislature's intention to overrule the *Futurewise* decision and also ruled that the legislation retroactively applied to Kitsap County's critical areas ordinance.¹⁰

Kailin v. Clallam County, 152 Wash. App. 974 (2009). The Shorelines Hearings Board does not have jurisdiction to review claims related to a county critical areas ordinance where that ordinance is not incorporated into the shoreline master program.

Preserve Our Islands v. Shoreline Hearings Board, 133 Wn. App. 503, 137 P.3d 31 (June 19, 2006), review denied, 162 Wn.2d 1008 (2008). A Shoreline Master Program adopted under the Shoreline Management Act must be read together with that jurisdiction's comprehensive plan and development regulations adopted under the GMA. Citing RCW 36.70A.480, which specifically states that a county's shoreline master program goals and policies are part of that county's GMA comprehensive plan, and the County's shoreline master program regulations are development regulations, and RCW 36.70A.040(4)(d), which states that development regulations must be consistent with and implement the comprehensive plan, the Court held that allowing inconsistency "would create chaos in attempts to implement and apply the numerous, varied and sometimes competing policies and regulations governing the use of land."¹¹

A local government may not interpret its Shoreline Master Program to create conflicts with its comprehensive plan or development regulations (or vice versa, presumably).

¹⁰ As noted in this decision, the Legislature amended RCW 36.70A.480 in 2010 to address the issue of "timing" of the transfer of critical areas to shoreline master programs. Therefore, there are a number of Hearings Board and court findings that led up to the Futurewise v. W. Wash. Growth Management Hearings Board, 164 Wn.2d 242 (2008) decision that are no longer relevant. They are not included in this legal review.

¹¹ *Id.* at 524, ¶ 31.

Washington Shell Fish, Inc. v. Pierce County, 132 Wn. App. 239, 131 P.3d 326 (Mar. 28, 2006). Critical areas regulations adopted under the GMA and a shoreline master program adopted under the SMA may be independently enforced against an activity regulated by both.

Growth Management Hearings Board Decisions

Eastern Washington

Spokane Riverkeeper, The Lands Council, and Trout Unlimited v. Spokane County and Washington State Department of Ecology, Case No. 13-1-0003c5 (FDO, December 23, 2013). Petitioners appealed a decision by the Washington State Department of Ecology to give “Final Ecology Approval of Spokane County Shoreline Master Program Comprehensive Update.” The Board upheld the decision on critical areas-wetlands, fish and wildlife habitat, recreation trails, channel migration zones, and public access but reversed the decision as to on-site sewage systems and remanded.

Spokane County chose not to enlarge its Shoreline Master Program jurisdiction to include for buffers for GMA-designated Critical Areas that occur within shorelines of the state and chose not to include the entire one-hundred-year-floodplain. Therefore, Critical Areas that occur within shorelines of the state, together with their required buffers, are regulated pursuant to GMA-adopted Critical Areas Ordinances. FDO at pp. 13-14.

Ecology’s decision to approve Spokane County’s Shoreline Master Program Update, without requiring standards relating to vertical separation between on-site sewage drainfields and the groundwater table or equivalent design criteria or performance standards, in order to prevent water quality impacts that would result in a net loss of shoreline ecological functions, failed to comply with the policies of the Shoreline Management Act and the Shoreline Master Program Guidelines. FDO at pp. 48-50.

Yakama Nation v Yakima County, Case No. 10-1-0011 (FDO, April 4, 2011). It is clear from both the statute [RCW 90.58.030(2)(d)] and the guidelines [WAC 173-22-040(3)] that inclusion of larger portions of the floodplain in the SMP is discretionary on the part of local government Further, Petitioner has not adduced evidence in support of its argument that the exclusion of large areas of flood plain from the SMP violates the "no net loss" standard. Without any legal authority requiring inclusion of larger areas of floodplain in the SMP, and in the absence of scientific evidence dictating such inclusion in the SMP, Petitioner cannot satisfy its burden of proof... FDO at 14.

The burden is on the Yakama Nation to demonstrate the newly adopted SMP provisions [for floodplain mining within the Yakima River basin as a conditional use] fail to adequately protect the shorelines. By merely referring to past impacts without coming forward with current scientific evidence to demonstrate inadequate shoreline protections, Petitioner cannot satisfy its burden of proof. FDO at 21-22.

[In finding Yakima County failed to prepare a comprehensive Cumulative Impact Analysis that evaluated, considered, and addressed reasonably foreseeable impacts, the Board stated] WAC 173-26-186(8) clearly contemplates that the SMP consider impacts from past actions ... [and] WAC 173-26-186(8)(d) provides that analysis of cumulative impacts should consider “current circumstances affecting the shorelines” together with “reasonably foreseeable future development” ... the term “cumulative impact” has been defined in case law as “the impact on the environment which results from the

incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.” FDO at 22-24.

Western Washington

Elizabeth Mooney and Janet Hays v City of Kenmore and Ecology, Case 12-3-0004, Feb 27, 2013). Pro se petitioners challenged the adoption of an update to the City of Kenmore’s Shoreline Master Program for failing to adequately protect the shoreline in light of new information pertaining to contaminants. Petitioners sought to add documentation of the history of industrial contamination in Kenmore’s downtown waterfront. [*Order on Motion to Supplement, December 10, 2012*](#). The Board found Kenmore’s SMP inventory documented existing contamination and the SMP policies, development regulations, and restoration plan provided “no net loss” of shoreline functions. The petition for review was dismissed.

Citizens for Rational Shoreline Planning v Whatcom Co and Ecology, Case No. 08-2-0031 (April 20, 2009) [Relying in part on the Board’s previous holding in Evergreen Islands v. Anacortes and WAC 173-26-191, the Board stated]: [The designation of critical area in the shoreline are by the Critical Areas Ordinance], which are incorporated by reference, are to be subject to public review at the time of their incorporation ... Petitioners/Intervenor were entitled to “an opportunity to participate in the formulation of the regulations” including “their incorporation into the master program”. To suggest that the public has no right to appeal the regulations as they are incorporated into the master program would render them passive participants and the SMA’s provisions related to public participation meaningless. FDO, at 14-15.

Had the County merely designated its shorelines as critical areas without consideration of whether those shorelines qualified as critical areas, the County would have run afoul of RCW 36.70A.480(5)’s requirement to designate those “specific” shorelines of the state that “qualify for critical area designation” ... RCW 36.70A.480(5) permits Shorelines of the State to be considered critical areas when specific areas located within these shorelines qualify for critical area designation based on the definition of critical areas set forth in RCW 36.70A.030(5) and they have been designated as such by the local government ... The County CAO designates as critical areas all areas that are of critical importance to the maintenance of special status fish, wildlife and/or plant species. FDO, at 16-17.

[After reviewing the Record related to specific water bodies, the Board held]: In short, the County developed a record in its CAO, CAO maps, and Shoreline Inventory which supports the designation of Whatcom County’s shorelines as a type of critical area – specifically, fish habitat. While the Board might well wonder whether some areas of the shoreline are so developed or isolated from protected species as to afford little habitat, Intervenor has not carried their burden of proof by showing that these [blanket] designations were clearly erroneous ... The record in this case shows that these shorelines were designated as critical areas because of their role as fish and wildlife habitat conservation areas. FDO, at 19.

Evergreen Islands, Futurewise and Skagit County Audubon Society v. City of Anacortes, 05-2-0016 (FDO, December 27, 2005). [The Board] find that the City did designate critical areas in the shorelines. The designation of "Areas With Which State or Federally Designated Endangered, Threatened, and Sensitive Species Have a Primary Association" and the designation of herring and smelt spawning areas as fish and

wildlife habitat areas in Ordinance 2702 makes those areas in the shorelines "critical areas." RCW 36.70A.060.

Central Puget Sound

Lake Burien Neighborhood, et al. v. City of Burien, 13-3-0012 FDO (June 16, 2014), p. 11.: BAS may be a key factor as applied to the protection of critical areas under RCW 36.70A.172, but the standard set out in RCW 90.58.100 for the development of SMPs is the applicable standard here. Burien's 2003 Critical Areas Ordinance as incorporated in its SMP is subject to review in this case, but the scope of review is limited to compliance with the SMA and Ecology's Guidelines so that Petitioners may not now argue the City's 2003 CAO was not supported by BAS or challenge various characterizations of Lake Burien's wetlands over the history of Burien's CAO.

Citizens for a Health Bay v. City of Tacoma, 06-3-0001, Order of Compliance (8/7/08) at 4. include marine buffer zones and protections for its 44 miles of marine shorelines. The Board found the City's action compliant with the GMA.] The Board notes that the detailed and site specific analysis undertaken by the City of Tacoma in enacting the shoreline protections in Ordinance No. 27728. While this case was reviewed under the GMA standard of best available science – RCW 36.70A.172, the adopted regulations provide a strong foundation for shoreline master program provisions.

Hood Canal Environmental Council, et al v. Kitsap County, 06-3-0012c, FDO (8/28/06), at 26. Since the enactment of ESHB 1933 in 2003, the Board has been presented with a number of challenges to local CAO enactments involving critical areas, as defined by the GMA, that are within shorelines, as defined by the SMA. Since ESHB 1933, at least six CAO updates have been challenged before this Board – three counties and three cities. First, no jurisdiction whose CAO has been appealed to this Board has omitted CAO regulations for wetlands, freshwater shorelines, or floodplains on the basis of ESHB 1933. Similarly, no jurisdiction, to our knowledge, has submitted its CAO update to DOE for approval under the SMA. Central Puget Sound counties and cities appear to agree that – for wetlands, freshwater shorelines, and floodplains – the current round of CAO updates is a GMA process that must be based on the GMA best available science provisions notwithstanding the interaction with SMA land use designations.

[The Board discussed various approaches used by different Puget Sound jurisdictions to protect marine shorelines.] The Board finds that there is no single interpretation of the ambiguity inherent in ESHB 1933 – specifically RCW 36.70A.480(5) – but a range of reasonable responses by local cities and counties in the Central Puget Sound region. The Board will defer to the County's decision, [the County designated all saltwater shorelines, stream segments with flow greater than 20 cubic feet per second, and lakes greater than 20 acres as critical areas under the category of "fish and wildlife habitat conservation areas."] based on local circumstances, unless persuaded by Petitioners that the County's approach was clearly erroneous. [The County had in its record ample BAS to support its designation of marine shorelines and Petitioners failed in this effort.] FDO, at 26-29.

Kitsap County's marine buffers buffer widths are assigned based on SMA land use classifications, not based on the functions and values of the critical areas designation – here, fish and wildlife habitat conservation areas. . . .The County has not differentiated among the functions and values that may need to be protected on shorelines that serve, for example, as herring and smelt spawning areas, juvenile chum rearing areas, Chinook migratory passages, shellfish beds or have other values. Rather they have chosen an undifferentiated buffer width that is at or below the bottom of the effective range for

pollutant and sediment removal cited in [BAS]. And they have applied that buffer to SMP land use classifications, not to the location of specific fish and wildlife habitat. . . .The flaw [in this approach] is illustrated by the fact that eelgrass, kelp, and shellfish beds are protected by larger buffers if they happen to be off shores designated Natural or Conservancy [in the SMP], while the same critical resources – eelgrass, kelp, shellfish – have just 35 feet of buffer off the Urban, Semi-rural or Rural shore. Protection for critical areas functions and values should be based first on the needs of the resource as determined by BAS. . . .Here Kitsap County has opted to designate its whole shoreline as critical area but then has not followed through with the protection of all the applicable functions and values. FDO at 39-41.

Tahoma Audubon Society, et al v. Pierce County, 05-3-0004c, FDO (July 12, 2005), at 37. [Pursuant to RCW 36.70A.480] the Board agrees with Pierce County that marine shorelines are not per se fish and wildlife habitat conservation areas [critical areas]. The Board then asks (1) whether Pierce County used best available science to protect critical fish and wildlife habitat conservation areas on its marine shorelines; (2) whether Pierce County’s regulations gave priority to anadromous fish; (3) whether Pierce County’s regulations protect the functions and values of marine shorelines as salmon habitat, and (4) whether a vegetative buffer is required. [The County’s CAO] identifies a number of critical fish and wildlife conservation areas on its marine shorelines. These include eelgrass beds, shellfish beds, surf smelt spawning areas and the like. However, [the CAO] was drafted to designate and protect all Pierce County marine shorelines. When the County Council voted to remove the marine shorelines from critical areas, it did so (a) without ascertaining whether the remaining protected salt-water areas included all the areas important for protection and enhancement of anadromous fisheries and (b) without assessing whether the overlay of elements remaining in the CAO [i.e. steep slopes, erosion areas, eelgrass beds, etc.] would protect the “values and functions” necessary for salmon habitat. [A discussion of WEAN v. WWGMHB, 122 Wn. App. 173, (2004) follows.]

[The Board reviewed the detailed scientific evidence in the record regarding salmon habitat along marine shorelines to determine whether the County gave “special consideration to anadromous fish.”] Despite the detailed information about the function and values of salmonids habitat specific to each shoreline reach, Pierce County eliminated “marine shorelines” from the fish and wildlife habitat conservation areas listed in its critical areas ordinance without determining whether the remaining designated critical areas adequately met the needs of salmon. Undoubtedly some of Pierce County’s remaining designated and mapped salt-water critical areas, such as eelgrass beds, surf smelt beaches, salt marshes and steep bluffs, overlap with habitats critical to the survival of anadromous fish. But there is nothing in the record to indicate that the high-value shoreline reaches identified by the Pentec Report for salmonids habitat [much less the restorable habitat stretches] are designated and protected in the Pierce County critical areas regulations. FDO, at 38-40.

Deferring salmon habitat protection to a site-by-site analysis based on disaggregated factors is inconsistent with Pierce County’s best available science. Nothing in the science amassed by the County supports disaggregating the values and functions of marine shorelines. [Various studies are reviewed pertaining to the integrated function and value of salmon habitat]. FDO, at 40.

The Board finds that Pierce County’s site-by-site assessment of marine shorelines during the permit application process, as established in (the CAO), does not meet the requirement of using best available science to devise regulations protective of the integrated functions and values of marine shorelines as critical salmon habitat. FDO, at 40-41.

A final issue is whether vegetative buffers are required. Pierce County declined to establish a regulatory requirement for vegetative buffers on marine shorelines, except to the extent they might be required in connection with a narrower protective regime (eelgrass beds, for example, or bald eagle nesting sites), and has substituted a 50-foot setback from ordinary high water mark. There is a wealth of scientific opinion in the County's record supporting vegetative buffers to protect multiple functions and values of marine shoreline salmon habitat. [The Board reviewed the record documents provided to the County; and concludes that the County rejected the recommendations of experts and agencies with expertise without any sound reasoned process.] FDO, at 41-44.

While the 2003 GMA amendments [ESHB 1933, amending RCW 36.70A.480] prohibit blanket designation of all marine shorelines (or indeed, all freshwater shorelines) as critical fish and wildlife habitat areas, the GMA requires the application of best available science to designate critical areas, explicitly recognizing that some of these will be shorelines. The legislature sought to ensure that this correction did not create loopholes. "Critical areas within shorelines" must be protected, with buffers as appropriate, if they meet the definition of critical areas under RCW 36.70A.030(5). RCW 36.70A.480(5) and (6). [The BAS in the County's record supported the conclusion that near-shore areas meet this definition, and the BAS] may provide the basis for designating less than all of Pierce County's marine shorelines as critical habitat for salmon. ESHB 1933 does not justify Pierce County's blanket deletion of marine shorelines and marine shoreline vegetative buffer requirements from its [CAO]. FDO, at 49.

Adoption of other Regulations Requiring Best Available Science

Growth Management Hearings Board Decisions

Western Washington

ADR/Diehl v. Mason County, 07-2-0010, FDO, at 19 (Jan. 16, 2008). The issue of allowing new residential construction in frequently flooded areas is a question of protection of critical areas. Pursuant to WAC 365-195-825(2)(b), "protection" of critical areas also means "to safeguard the public from hazards to health and safety." Whether to allow new residential construction in a frequently flooded area is a matter of hazards to public health and safety. Therefore, the adoption of regulations allowing such residential construction must include BAS.

Overton et al. v. Mason County, 05-2-0009c, FDO (11/14/05). Petitioners' argument that RCW 36.70A.172 must apply to all development regulations that may impact critical areas since other regulations could nullify the protections of the critical areas ordinance has no foundation in the GMA. First and foremost, the Board cannot impose a requirement that the GMA does not create. On its face, RCW 36.70A.172 only applies to the designation and protection of critical areas. "In designating and protecting critical areas under this chapter..." Therefore, inclusion of best available science and special consideration of anadromous fisheries is only required in the adoption of critical areas designations and protections. While a best available science analysis of the impact of zoning regulations on critical areas might be useful, the GMA does not require it.

If newly adopted regulations impact the effectiveness of the critical areas regulations, then the challenge to those new regulations would be that they violate the requirement to protect critical areas. However, this does not mean that they violate the requirement to include best available science in those

protections. A challenge to development regulations that change the protectiveness of critical areas regulations would rest on RCW 36.70A.060 rather than on the failure to include best available science pursuant to RCW 36.70A.172.

Critical Areas in Natural Resource Lands under the GMA

Court Decisions

Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board, 161 Wn.2d 415 (2007). The court recognized the competing goals in the GMA of protection of critical areas and natural resource lands stating that local governments are not given much direction as to whether protection of critical areas or the maintaining of agricultural lands is a priority. The court noted that RCW 36.70A.172(1) does require local governments to include best available science in developing regulations and policies to protect critical areas and that they are to “give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.” However, the court recognized that there was still deference given to balancing of local circumstances and in this case, the court did not require the county to curtail historic agricultural activities in critical areas and upheld the county’s “no harm” provision in its ordinance. The court concluded that the “no harm” standard protected critical areas by maintaining existing conditions. The county’s decision to not require mandatory riparian buffers in agricultural lands was upheld because doing so would impose a requirement to restore habitat functions that no longer existed.

Clallam County v. Western Washington Growth Management Hearings Board, 130 Wn. App. 127, 121 P.3d 764 (Oct. 25, 2005), *review denied*, 163 Wn.2d 1053 (2008). The GMA authorizes counties and cities to regulate existing uses in critical areas and their buffers to advance the GMA’s goals. The petitioners argued that the GMA requires the County to regulate preexisting agricultural uses in critical areas. The Court compared the language in RCW 36.70A.060(1) (development regulations adopted to assure the conservation of agricultural, forest, and mineral resource lands “may not prohibit uses legally existing on any parcel prior to their adoption”) with that in RCW 36.70A.060(2) (which is silent as to whether development regulations adopted to protect critical areas may prohibit prior uses). Based on its review of the legislative history of RCW 36.70A.060, the broad definition of “development regulations” in RCW 36.70A.030, the breadth of the best available science requirement in RCW 36.70A.172(1), and the natural resources goal in RCW 36.70A.020(8), the Court concluded the Legislature intended that counties regulate critical areas, including existing uses, to advance the GMA’s goals.

An agricultural exemption from critical areas may extend to include agricultural uses on rural lands, but any exemption must be balanced with restrictions based on best available science that address any harm to critical areas resulting from the exemption. Acknowledging that some agricultural lands could be exempt from critical areas regulations, the Court reversed the Board’s conclusion that only existing uses in designated agricultural resource lands may be exempted from critical areas regulations. Characterizing the Board’s conclusion as an “apparent policy,” the Court explained that such a policy is contrary to the GMA’s emphasis on balancing competing goals, a balance which is to be undertaken by the County, with the Board owing deference to that balancing. The Court held the County could expand its agricultural land exemption to include agricultural uses outside designated agricultural lands, but it must balance the exemption with restrictions based on best available science that address any threatened harm resulting from the expanded exemption.

The court concluded that preexisting agricultural uses are not exempt from all critical areas regulation. The court also held that the county was not limited to exempting only designated agricultural resource land from full critical areas regulation and that it may expand its exempt agricultural land to meet its local conditions. However, the county must balance such expanded exemption with corresponding restrictions that take into account the specific harms threatened by the expanded class of farm lands.

Whidbey Environmental Action Network v. Island County, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), *review denied*, 153 Wn.2d 1025 (2005). An exception from critical areas regulations for agricultural activities must be supported by evidence in the record that such an exception is necessary and that the best available science was employed in crafting the exception.

Voluntary Stewardship Program

Protect the Peninsula's Future v. Growth Management Hearings Board, 185 Wn. App. 959 (2015). When the Legislature amended the GMA in 2011 to create the Voluntary Stewardship Program (VSP), it provided in RCW 36.70A.735 that if a county opting into the program was unable to implement a watershed work plan for the reasons provided in sub (2) of the section, the county could avail itself of options for compliance including adopting Clallam County's ordinances for protecting critical areas in areas used for agricultural activities. Clallam County did not opt to participate in the VSP. In response to a challenge for failure to update its critical areas ordinance, Clallam County argued that the Legislature had validated the County's 2001 ordinance. The court disagreed and held that Clallam County's ordinance was compliant only for those counties participating in the VSP. Because Clallam County was not participating, the county would have to comply with the "traditional" requirements of RCW 36.70A.060 rather than the alternative requirements for VSP participants.

Growth Management Hearings Board Decisions

Western Washington

Weyerhaeuser, et al v Thurston County, 10-2-0020c: WAC 365-190-040(7) provides that the ". . . designation process may result in critical area designations that overlay . . . natural resource land classifications" and that ". . . if a critical area designation overlies a natural resource land designation, both designations apply". Additionally, WAC 365-190-020(7) provides ". . . that critical areas designations overlay other land uses including designated natural resource lands. For example, if both critical area and natural resource land use designations apply to a given parcel or a portion of a parcel, both or all designations must be made". Precluding designation of mineral resource sites that contain CARA 1, class I or 2 wetlands (and their buffers), certain habitat and species areas (and their buffers), as well as 100 year floodplains and geologically sensitive areas, may in fact be justifiable. However, the record fails to provide that justification. AFDO, June 17, 2011, pg. 29.

[The challenged action, which precluded the designation of Mineral Resource Land within certain critical areas affects critical areas regulation. RCW 36.70A.172 mandates the application of BAS when "protecting critical areas," but the County failed to utilize BAS.] AFDO, June 17, 2011, pg. 51.

The Board conclude[d] that the exclusionary criteria designed to protect critical areas included in the Resolution's Comprehensive Plan violate RCW 36.70A.170's mandate to designate [Mineral Resource

Land] of long term commercial significance and critical areas and the WAC Minimum Guidelines which provide that if such designations overlap, both designations apply. (Compliance Order, July 17, 2012) pg. 26.

WEAN v. Island County, 98-2-0023c (2006 Order Finding Compliance of Critical Areas Protections in Rural Lands, September 1, 2006); WEAN v. Island County, WWGMHB Case No. 06-2-0012c (FDO, September 14, 2006). Based on the County's reasoned review of the factors in WAC 365-195-905(5) for determining if the NRCS BMPs constitute best available science; and the assessment of the state agencies with expertise in this area – Ecology, Fish and Wildlife, and CTED – we find that the NRCS BMPs constitute best available science for the regulation of ongoing noncommercial agricultural practices in Island County, so long as they are accompanied by monitoring and an adaptive management program.

WEAN v. Island County, 98-2-0023c (2006 Order Finding Compliance of Critical Areas Protections in Rural Lands, September 1, 2006). For agricultural practices, the state agencies recommend BMPs rather than buffers. In the 2005 publication *Wetlands in Washington State: Vol 2: Guidance for Protecting and Managing Wetlands (R-8769-12c)*, the state Departments of Ecology and Fish and Wildlife clearly express this view: BMPs should be used to regulate ongoing agricultural activities... Where the agencies with expertise and responsibility for addressing protection of critical areas unequivocally recommend the use of BMPs instead of standard buffers, Petitioner has a heavy burden to show that the BMPs are not adequate protection under RCW 36.70A.170 and 36.70A.060.

Where standard buffers widths respond to a variety of possible circumstances, BMPs and farm plans are able to target more specifically the practices that are actually in use on each farm.

Swinomish Indian Tribal Community et al. v. Skagit County, 02-2-0012c (Compliance Order, 12-8-03). RCW 36.70A.060(2) and .040(1) do not require buffers on every stretch of every watercourse containing or contributing to a watercourse bearing anadromous fish to protect the existing functions and values of fish and wildlife habitat conservation areas in ongoing agricultural lands.

The overall intent of the pertinent sections of the GMA and WAC 365-190-020 is to assure no further degradation, no further negative impacts, no additional loss of functions or values of critical areas. They also focus on new activities and preventing new impacts or new degradation rather than requiring enhancement of existing conditions.

In ongoing agricultural lands, where current stream conditions do not meet all seven functions and values of fish habitat, and where the functions and values in that location are not necessary to preserve anadromous fish, requiring farmers to remove from agriculture all their lands abutting those streams in an effort to achieve all those functions and values, not met for many years, would be mandating enhancement of fish habitat (which the Act does not require).

After careful consideration of all the arguments, and the entire record, we are no longer convinced that the Act requires the County to mandate that regulation of critical areas provide for all the functions in every watercourse that contains or contributes to watercourses that contain anadromous fish in ongoing commercially significant agricultural lands where some of those functions have been missing for many years and where these functions are not required for a particular life stage of anadromous fish. By reaching the above conclusion, we are not saying that farmers do not need to alter their practices if they are continuing activities which will further degrade the streams. Those activities must stop and practices must be implemented which ensure no additional harm or further loss of function.

Central Puget Sound

Keesling v. King County, 05-3-0001, FDO (7/5/05), at 11-12. The GMA “requires all local governments to designate all lands within their jurisdictions which meet the definition of critical areas.” (Citation omitted.) Agricultural lands cannot be excluded. [The County’s designation of critical areas within an agricultural production district] recognizes the dual obligation under GMA to protect agricultural resource lands and to protect long-term water quality for people and for fish and wildlife. The Board will defer to King County in the balance it has struck.

Indirect Amendment of a Critical Areas Ordinance

Growth Management Hearings Board Decisions

Western Washington

Olympia Master Builders v. Thurston County, 15-2-0002, FDO 5/12/16. The Board found that the “2015 Interim Process” addressing Mazama pocket gopher habitat which was adopted in lieu of formally amending the County’s CAO regulations constituted a de facto amendment of the CAO, that those changes were made in violation of the requirements of RCW 36.70A.035 and RCW 36.70A.140.

Reliance on Other Regulations

Court Decisions

Stevens County v. Eastern Washington Growth Management Hearings Board, 163 Wn. App. 680 (2011), *review denied*, 173 Wn.2d 1019 (2012). The court upheld the board’s determination that development regulations that are not part of the critical areas ordinance still must meet GMA requirements for protection of critical areas. The court concluded that the county subdivision code failed to protect critical areas, as required by the GMA. Significantly, the code did not address impervious surface coverage in multiple important contexts, it did not apply county-wide, and it did not mention methods for addressing storm water or impervious surface coverage.

Stevens County v. Futurewise, 146 Wn. App. 493 (2008), *review denied*, 165 Wn.2d 1038 (2009). The court held that the county had failed to comply with the GMA when it only designated as critical wildlife habitat areas that had been designated by a state or federal agency process as habitat for endangered, threatened, or sensitive species. The court stated that the GMA required the county to designate and protect all critical areas, not just those identified by another agency particularly since federal designations only considered federal lands or lands with a federal nexus.

Growth Management Hearings Boards

Eastern Washington

Confederated Tribes and Bands of the Yakima Indian Nation v. Yakima County, 94-1-0021, FDO (Mar. 10, 1995). A local government's attempt to consolidate and streamline its critical area designation and protection requirements of these acts, the GMA, the Shoreline Management Act, and the Flood Plain Management Act is desirable and fully consistent with the goals of the GMA. Regulatory process consolidation, however, cannot come at the expense of the substantive requirements of the laws being consolidated. In other words, successful integration demands compliance with the laws that govern each subject area being integrated.

The required level of protection of wetlands and riparian buffers must be reasonably based on relevant science; however, a County has a range of discretion as to how exactly that level is met. To the extent a County relies on other statutes as part of its protection scheme, they should be referenced in the ordinance. A citizen should be able to understand what protection elements exist by reading the ordinance. FDO (Mar. 10, 1995).

Stormwater Regulations

Larson Beach/Wagenman v. Stevens County, 07-1-0013, FDO at 47 (Oct. 6, 2008). The CAO provides various regulations intended to protect critical areas, including the classification of critical areas (i.e. category of wetlands or susceptibility of aquifers), with protections provided through the establishment on minimum buffers, building setbacks, limitation on uses (CARAs only), report requirements (i.e. hydrogeologic site evaluation or wildlife habitat management plan), satisfaction of building or flood code provisions (i.e. structural requirements for geological hazard areas), enforcement and review/appeal provisions. However, as the Petitioners correctly note, the CAO does not assign zoning densities or uses (which the limited exception of some uses sets forth in provisions applicable to CARAs) or sets forth specific design standards (i.e. minimum lot sizes, lot coverage, etc) that may assist in providing protection for the functions and values of the critical areas. In contrast, SCC Title 3 is adopted pursuant to both the GMA and the County's authority granted by the Washington State Constitution and has many purposes in relationship to the development of land within the County ... Title 3 provides the establishment of zoning districts, uses and densities, development and design standards (i.e. setbacks, road classifications, parking requirements), including special standards for certain types of development ... Title 3 specifically sets forth Environmental Performance Standards.

The Board does not discount the County's use of a CAO to protect critical areas from adverse impacts and pursuant to SCC 3.04.020, all designated critical areas will be considered during development application review. However, as noted supra, RCW 36.70A.060(2) requires the adoption of DRs that protect designated critical areas and the Board does not see a CAO as the only regulation which serves to protect critical areas. DRs Title 3 can be utilized to amplify protections set forth in a jurisdiction's CAO by setting forth simple design standards, such as those suggested by the Petitioners – limitations on impervious coverage and consideration of storm water runoff. FDO at 49.

With the exception of provisions relating to the expansion of non-conforming uses, the CAO does not address impervious surfaces, nor, with the exception of noting one of the beneficial functions of

wetlands is storm water control, does the CAO address storm water run-off itself. Therefore, these aspects of environmental protection are left to other development regulations. FDO at 50.

It is common knowledge storm water discharges, carrying both natural (silt, sediment, etc) and man-made (oils, chemicals, etc) pollutants can adversely impact the chemistry of a critical area. Although the Board recognizes the method of storm water control within the rural area will differ from that of the UGA, the consideration of storm water discharge resulting from a development proposal should, at a minimum, be considered within the development review process so as to ascertain whether increases in discharge resulting from the development would adversely impact critical areas. The Board further recognizes not all development proposals within areas outside of the UGAs would result in storm water issues; however, some types, such as cluster developments, may necessitate the provision of some type of controls given the compact nature of such developments. FDO at 50-51.

Western Washington

Hydraulic Permit Approvals

Whidbey Environmental Action Network v. Island County, 14-2-0009: [Allowing an exemption from the FWHCA regulations for removal of beaver and beaver dams based on] reliance on the issuance of an HPA from WDFW, an agency which is precluded from considering any functions and values beyond fish life, fails to protect critical area functions and values and fails to include BAS. Final Decision and Order, June 26, 2015, p. 12.

Central Puget Sound

Stormwater Regulations

Seattle Audubon Society, et al v. City of Seattle, 06-3-0024, FDO (12/11/06), at 37. The question of reliance on stormwater regulations for protection of critical areas functions and values has come before the Board in several recent decisions. The Court of Appeals set the standard in *WEAN v. Island County*, 122 Wn.App. 156, 180, 93 P.3d 885 (2004), stating that if a local government is relying substantially on preexisting regulations to satisfy its obligations under RCW 36.70A.172, then “those regulations must be subject to the applicable critical areas analysis to ensure compliance with the GMA.”

Enforcement of Critical Areas Ordinances

Court Decisions

Preserve Our Islands v. Shoreline Hearings Board, 133 Wn. App. 503, 137 P.3d 31 (June 19, 2006), review denied, 162 Wn.2d 1008 (2008). A Shoreline Master Program adopted under the Shoreline Management Act must be read together with that jurisdiction's comprehensive plan and development regulations adopted under the GMA. Citing RCW 36.70A.480, which specifically states that a county's shoreline master program goals and policies are part of that county's GMA comprehensive plan, and the County's shoreline master program regulations are development regulations, and RCW 36.70A.040(4)(d), which states that development regulations must be consistent with and implement the comprehensive plan, the Court held that allowing inconsistency "would create chaos in attempts to implement and apply the numerous, varied and sometimes competing policies and regulations governing the use of land."¹²

A local government may not interpret its Shoreline Master Program to create conflicts with its comprehensive plan or development regulations (or vice versa, presumably).

Washington Shell Fish, Inc. v. Pierce County, 132 Wn. App. 239, 131 P.3d 326 (Mar. 28, 2006). Critical areas regulations adopted under the GMA and a shoreline master program adopted under the SMA may be independently enforced against an activity regulated by both.

Growth Management Hearings Boards

Eastern Washington

Concerned Friends of Ferry County/Robinson v. Ferry County, 06-1-0003, FDO, at 15-16 (Oct. 2, 2006). The Critical Areas Ordinance is the tool for carrying out the GMA requirement that all jurisdictions, whether or not they plan under GMA, must designate and protect critical areas.

While the GMA is specific as to what critical areas counties and cities must designate and protect using best available science, the Act is silent on what a county or city must do to enforce these requirements or punish violations of them. Enforcement of the Act through local comprehensive plan regulations and critical areas ordinances are where counties and cities are allowed to use their discretion [bounded by state law]. CFFC/Robinson v. Ferry County, EWGMHB Case No. 06-1-0003, FDO, at 16 (Oct. 2, 2006). ...The County has included a violation section, a penalty section, and a civil remedy section in its final RLCAO. It may not be the most comprehensive, but it provides a legal remedy and enforcement for violations of the [CAO]. The Board looks to these sections and the State's enforcement capabilities [under RCW 90.58] to ensure that Ferry County's critical areas will be protected as required. FDO at 16-17.

The [CAO] is the tool for carrying out the GMA requirement that all jurisdictions, whether or not they plan under GMA, must designate and protect critical areas, which include wetlands, areas with a critical recharging effect on aquifers used for potable water, frequently flooded areas, geologically hazardous

¹² *Id.* at 524, ¶ 31.

areas and fish and wildlife habitat conservation areas. In designating and protecting critical areas, counties and cities shall include the [BAS] in developing policies and development regulations to protect the functions and values of critical areas. RCW 36.70A.030(5), RCW 36.70A.170, and RCW 36.70A.172. FDO at 15-16.

Western Washington

Friends of Skagit County v. Skagit County, 96-2-0025 (FDO, 1-3-97). Where [critical areas] are designated and the Forest Practices Act provides a local government with some authority to act, the GMA requires a local government to protect CAs and their buffers within the scope of that authority.

Harmonizing the GMA Goals and Requirements

Court Decisions

Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board, 161 Wn.2d 415 (2007). The court recognized the competing goals in the GMA of protection of critical areas and natural resource lands stating that local governments are not given much direction as to whether protection of critical areas or the maintaining of agricultural lands is a priority. The court noted that RCW 36.70A.172(1) does require local governments to include best available science in developing regulations and policies to protect critical areas and that they are to “give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.” However, the court recognized that there was still deference given to balancing of local circumstances and in this case, the court did not require the county to curtail historic agricultural activities in critical areas and upheld the county’s “no harm” provision in its ordinance. The court concluded that the “no harm” standard protected critical areas by maintaining existing conditions. The county’s decision to not require mandatory riparian buffers in agricultural lands was upheld because doing so would impose a requirement to restore habitat functions that no longer existed.

Growth Management Hearings Board Decisions

Western Washington

Friends of the San Juans v. San Juan County, 10-2-0012, FDO, Oct. 12, 2010, pg. 24. When the County used a conditional use permit process, subject to hearing examiner review, the Board concluded that the hearing examiner may impose “reasonable” conditions of approval that do not render the [essential public facility] impractical. The Board has decided numerous cases giving discretion to an administrator. In this case, however, the Board decided the hearing examiner did not have clear guidance about what would constitute “reasonable” conditions for an [essential public facility]. Without clearer guidance about what constitutes “reasonable”, and without requirements to fully mitigate impacts, the Board found the County’s regulation on siting [essential public facilities] in critical areas lacked guidance on mitigation, Best Available Science, and failed to protect critical area functions and values. Critical areas are the “natural infrastructure” and the foundation of a landscape and cannot be overruled or “trumped” by siting [essential public facilities].

OSF/CPCA v. Jefferson County, 08-2-0029c, FDO, at 19-20 (Nov. 19, 2008). [When establishing buffers for streams, Petitioner, in citing to *Swinomish* and *Ferry County* asserted that the Record needs to contain evidence demonstrating that the County —undertook the required reasoned process of balancing the various planning goals against BAS. The Board disagreed and stated:] ... the Board does not read these two cases as requiring a balancing between the GMA’s mandate to protect critical areas and the non-prioritized goals jurisdictions are to use as a guide when developing comprehensive plans and development regulations. Rather, both *Swinomish* and *Ferry County* set forth the principle that if a jurisdiction seeks to deviate from BAS it must provide a reasoned justification for such a deviation. In addition, the Court of Appeals in *WEAN v. Island County* stated that it is when a jurisdiction elects to adopt a critical area requirement that is outside the range that BAS would support, the jurisdiction must provide findings explaining the reasons for its departure from BAS and identifying the other goals of GMA which it is implementing by making such a choice. Here, Jefferson County’s choice of buffer width did not deviate from BAS; rather the County selected a width within the range of BAS and as such, although the balancing of GMA goals is always required in the context of GMA planning, the justification sought by OSF is not needed for a decision supported by BAS.

Swinomish Indian Tribal Community et al. v. Skagit County; 02-2-0012c (Compliance Order, December 8, 2003). While the Legislature could have imposed a more precise standard, the requirement to base the protection standard on BAS recognizes that science will change over time and the standards and protection measures will need to be revised. Standards and protection measures that are informed by BAS also provide cities and counties more flexibility to craft regulations that reflect local conditions. Nevertheless, this flexibility imposes on the County the complex responsibility of both setting a protection standard consistent with BAS, when the sources are sometimes conflicting, and harmonizing the goals and requirements of the GMA, while taking into consideration local conditions.

PPF v. Clallam County, 00-2-0008 (Compliance Order, 10-26-01). Applying reduced CA protections for ongoing agriculture in non RL designated areas, or restricted to only agricultural uses areas, based only upon the criteria of RCW 84.34, does not comply with the Act and substantially interferes with the goals of the Act. A process that involves reduction of CA protections for lots as small as one acre is not an allowable balancing of GMA goals.

Central Puget Sound

Ann Aagaard, Judy Fisher, Bob Fisher, Glen Conley, and Save a Valuable Environment (SAVE) v. City of Bothell, 15-3-0001, FDO (July 21, 2015), p. 12.: The Board is aware of no statutory authority supporting the City’s theory that “balancing” protection of critical areas with the City’s achievement of anticipated development [guaranteeing a zoned lot yield] is within its discretion. Instead, the GMA prescribes a consideration of multiple goals and directs cities and counties to simultaneously accommodate growth and protect critical areas. The Board finds the City’s assertion that GMA provisions for accommodating growth trump the GMA provisions for protecting critical areas is clearly erroneous.

Department of Ecology/Department of Community, Trade and Economic Development¹³, et al v. city of Kent, 05-3-0034, FDO (April 19, 2006), at 11-13. [A thorough discussion as to balancing of the GMA’s goals and requirements in light of several decisions of the Courts including *Quadrant* (2005), *King County*

¹³ Department of Community, Trade and Economic Development (CTED) is now the Department of Commerce.

(2000), and Bellevue (2003). The Board concluded that these decisions of the Supreme Court and Court of Appeals established the rule that a jurisdiction may not assert the need to balance competing GMA goals as a reason to disregard specific GMA requirements.]

[The Board concludes that GMA goals provide a framework for plans and regulations, and many of the goals are backed and furthered by specific and directive GMA requirements and mandates. Therefore cities and counties may not merely rely upon GMA goals, standing alone, to dilute or override GMA requirements.] FDO, at 52-53.

[The Board acknowledges the language used by the Court of Appeals in both the HEAL case and subsequently in WEAN that apparently allows “balancing” in the context of critical areas regulation. In the CAO context, such “balancing” is clearly appropriate if GMA requirements are in conflict, but there is no hard evidence here to support such a divergence from wetland ranking and buffers based on best available science.] FDO, at 53.

Adequate Standards for Administrative Discretion

Growth Management Hearings Board Decisions

Western Washington

WEAN v. Island County, 14-2-0009 (FDO, June 24, 2015). [In considering administrative allowance of an exemption from critical area regulations,] The Board’s concern is the lack of adequate standards to guide a County administrator in determining what constitutes an “appropriately limited and reasonable amount of time”. The County has the obligation to protect critical areas and the absence of clear standards could lead to the resumption of agricultural activities, with potential negative impacts on the functions and values of FWHCAs, following a decade or more of no agricultural activity.

RE Sources v City of Blaine, 09-2-0015, Order on Reconsideration at 6 (April 27, 2010). [The Board reiterated its FDO holding] As the Board noted in the FDO in its discussion pertaining to administrator discretion, providing sufficient guidance for decision-makers is an important element of development regulations.

Evergreen Islands, Futurewise and Skagit County Audubon Society v. City of Anacortes, 05-2-0016 (FDO, 12/27/05). While we find that RCW 36.70A.172(1) does not require a new BAS investigation at the time of permitting, we find, as we have in previous cases, that discretion in issuing permit decisions should be guided by specific criteria. The City’s requirements for an extensive critical areas report by a qualified biologist, coupled with the requirement that habitat alterations or mitigations must protect the quantitative and qualitative functions and values of habitat conservation areas when permits are issued, make these regulations compliant.

Identification of Critical Areas in Ordinance versus Maps

Court Decisions

Common Sense Alliance v. Growth Management Hearings Board, 2015 Wash App. LEXIS 1908 (2015). [Note: This is an unpublished case and therefore not precedential.] This case involved San Juan County's 2012 critical areas ordinance updates. Friends of the San Juans raised 52 issues for review, contending the four ordinances at issue did not go far enough to protect critical areas, and those with an opposing view raised 27 issues, contending the ordinances went too far to protect critical areas. In San Juan Superior Court, the Alliance brought six issues and Friends brought seven. The Court upheld the Board on each issue. The arguments on appeal focused mainly on San Juan's habitat conservation ordinance. In this unpublished case, Division One reaffirmed the propriety of identify critical areas during the permitting process rather than specifically identifying them on a map. Id. at *23-*24 (noting that all shorelines are not per se critical areas). In addition, all potential critical habitat areas need not be specifically evaluated and mapped out in advance of development activity. "The Act does not require that a critical area ordinance take a parcel-by-parcel approach."

Growth Management Hearings Board Decisions

Eastern Washington

Hazen, et al v. Yakima County, 08-1-0008c, FDO at 22-23 (April 5, 2010). WAC 365-190-040(5)(a) denotes that when designating critical areas, Yakima County was to provide for the general distribution, location, and extent of the critical area. WAC 365-190-040(5)(b) goes on to state in circumstances where critical areas cannot be readily identified, these areas should be designated by performance standards or definitions and WAC 365-190-040(5)(c) provides that designation could be satisfied by the adoption of a policy statement. It would appear to the Board that CARAs expressly fall within this realm because, unlike wetlands or streams which can be visually delineated, the underground nature of an aquifer provides for a more challenging determination as to their location and boundaries.

Woodmansee, et al. v. Ferry County, 95-1-0010, Order on Compliance (Apr. 16, 1997). The standard for designating critical areas and forestlands is "land use designations must provide landowners and public service providers with the information needed to make decisions." Given the recognized deficiency in the maps in this case, it is necessary to follow up that designation with a process, which includes on-site inspections as permits are processed.

Western Washington

Friends of the San Juans, et al. v. San Juan County, 13-2-0012c: [Contrary to an assertion that RCW 36.70A.170 and RCW 36.70A.480 required the County to classify and designate specific areas as FWHCAs], the Board stated " . . . Department of Commerce regulations specifically anticipate the need to designate critical areas using 'maps' and/or 'performance standards,' with a preference for performance standards when adopting land use regulations because maps are less precise", citing WAC 365-190-040(5)(b) and WAC 365-190-080(4) *FDO (September 6, 2013)*, at 90, 91.

While the County has assembled some critical area maps, it is clear that those maps do not serve to designate FWHCAs. Conditions in the field control. As addressed elsewhere in this FDO, the County's system is site specific. Mapping of specific fish and wildlife habitat conservation critical areas is not a GMA requirement. *FDO (September 6, 2013)*, at 92.

Reliance on State or Federal Regulations for Critical Areas Protection

Growth Management Hearings Board Decisions

Eastern Washington

Hazen, et al v. Yakima County, 08-1-0008c, FDO at 26 (April 5, 2010) [The Board relying on the Court of Appeals holding in *WEAN v Island County*, 122 Wn. App.156 (2004) stated] Although the Board has no doubt federal, state, and local regulations intended to protect aquifers are based on credible science, it is impossible for the Board to determine if these regulations were subject to the critical areas analysis required by the GMA ... federal and state regulations do not replace local regulations because they cannot focus on local conditions in the way local governments can. If the County seeks to fulfill its duty by relying on existing regulations – whether they be federal, state, local, or tribal - then those regulations must be subject to the applicable critical areas analysis to ensure compliance with RCW 36.70A.172(1)'s requirement to include BAS.

Central Puget Sound

Hood Canal Environmental Council, et al v. Kitsap County, 06-3-0012c, FDO (8/28/06), at 30. Petitioner KAPO contends that the County may not rely on federal habitat designations undertaken for another purpose but must conduct its own shoreline inventory or "independent analysis" and show in the record its own "reasoned process." The Board however, reasons that the "best available science" requirement includes the word "available" as an indicator that a jurisdiction is not required to sponsor independent research but may rely on competent science that is provided from other sources. . . .The Board concludes that the County appropriately relied on available science.

Exemptions from Critical Areas Ordinances

Growth Management Hearings Board Decisions

Eastern Washington

Hazen, et al v. Yakima County, 08-1-0008c, FDO at 29 (April 5, 2010). [In responding to petitioner's issue contending CAO exemptions violated the GMA, the Board, relying on *Clallam County v. WWGMHB*, 130 Wn. App. 127, 140 (2005) held] Although exemptions are not prohibited under the GMA, all development regulations, even those for exempt activities, are to be based on BAS and tailored so as to reasonably ameliorate potential harm and address cumulative impacts.

[In regards to CAO exemptions, the Board noted] The County contends the administrative review process of YCC 16C.03.06 will assure the functions and values of the critical area will be protected. However, it is not the review process but the inclusion of BAS that is imperative when it comes to critical areas. FDO at 30.

Western Washington

Whidbey Environmental Action Network v. Island County, 14-2-0009: [The County failed to protect critical areas as it allowed] "grandfathered non-conforming uses" which no longer comply with more recently enacted and, presumably, more protective land use laws, [to be] be considered a "reasonable use" when determining whether a proposed use met the reasonable use criteria. Final Decision and Order, June 26, 2015, p. 8.

Friends of the San Juans, et al. v. San Juan County, 13-2-0012c: [Petitioners challenged an exception from the CAO's for public agencies and public/private utilities when such an entity "has difficulty" meeting protection regulations resulting in preclusion of the proposal, to which the Board responded] "The clause 'would preclude a development proposal' does not include a qualifier that places the initial burden on the agency to show the location of the proposed development is necessary. . . the initial determination under the County's system, the location of the 'development proposal', is left solely to the proponent, notwithstanding the possibility the proposal could be located in an area with fewer negative impacts to a critical area. The County has the obligation to protect critical areas and leaving the choice of location to the proponent is in effect a delegation of authority, would abrogate the duty to protect critical areas and fails to assure no net loss of ecological functions. Furthermore, there are no standards by which to determine that a project proponent would "have difficulty" meeting standard critical area regulations." FDO (September 6, 2013), at 33, 34.

RE Sources v City of Blaine, 09-2-0015, Order on Reconsideration at 6 (April 27, 2010). [In response to the City's assertion that the Board's holding requires adoption of a numerical limitation, which not only misinterprets the reasonable use exemption but ignores the applicable compensatory mitigation requirements] The Board has long recognized that although reasonable use exemptions may actually permit impacts to a critical area, they are an indispensable component of critical area regulations

because they address the issue of regulatory takings claims. Thus, the presence of such provisions within Blaine's CAO are not, in and of themselves, the basis for non-compliance with the GMA. And, although RUEs are necessary to prevent regulatory takings claims, it does not mean such provisions should not seek to prevent the protection of all the functions and values of wetlands. Thus, the Board agrees that setting a specific numerical requirement would not allow the flexibility necessary for a project proponent to work with the City to find a reasonable use for their property. However, the Board does not believe the City's process, through its planning commission, is sufficiently clear so as to determine the reasonable use of the property while protecting all functions and values of the wetland.

WEAN/CARE v. Island County, 08-2-0026c, FDO at 23 (Nov. 17, 2008). The Board recognizes that although they may actually permit impacts to a critical area, reasonable use provisions are an indispensable component of critical area regulations because they address the issue of regulatory takings claims. Regulatory takings have been an element of American jurisprudence since the 1920s and are founded on constitutional principles, seeking to provide a remedy when a regulation takes all reasonable use of a parcel of land. Given this grounding in constitutional law, the Board has no jurisdiction to determine Petitioners' claims as to whether the County's regulations exceed what is necessary to protect the County from a constitutionally-based takings claim as this is a question for the courts. However, although reasonable use provisions are necessary to prevent a constitutional takings claim, that does not mean such provisions should not prevent the protection of all the functions and values of wetlands and do not need to be supported by BAS.

Permitting uses based upon uses that were established, albeit legally, prior to the adoption of ordinances that required the protection of critical areas cannot be considered a regulation that includes BAS. Instead such a regulation improperly employs existing uses as the benchmark of what is appropriate in the vicinity of critical areas and merely perpetuates the establishment of uses that are incompatible with BAS. FDO at 26.

PPF v. Clallam County, 00-2-0008 (FDO, 12-19-00). A local government must regulate preexisting uses in order to fulfill its duty to protect critical areas. GMA requires any exemption for preexisting use to be limited and carefully crafted.

FOSC v. Skagit County, 96-2-0025 (FDO, 1-3-97). [Critical areas] upon which exempted activities occur are still designated CAs. Exemptions are a means to lessen protection of CAs for certain activities. The real question is whether the exemptions are supported by reasoned choices based upon appropriate factors actually considered as contained in the record.

Central Puget Sound

Hood Canal Environmental Council, et al v. Kitsap County, 06-3-0012c, FDO (8/28/06) at 19-20. [The County exempted from regulation very small, truly isolated and poorly functioning wetlands. The County was advised by state agencies that such exemptions were not supported by BAS. The Board reviewed the case of *Clallam County v. Western Washington Growth Management Hearings Board*, 130 Wash. App. 127, 140, 121 P.3d 764 (2005), pertaining to the limitations on exemptions from critical areas regulations.] The Board reads the Court's opinion to require CAO exemptions to be supported by some analysis of cumulative impacts and corresponding mitigation or adaptive management. Here, Kitsap County has not expanded its small wetlands exemption; in fact the exemption has been somewhat

narrowed. But there is no evidence in the record of the likely number of exempt wetlands, no cumulative impacts assessment or adaptive management, and no monitoring program to assure no net loss. In light of the Court's guidance in Clallam County, which the Board finds controlling, the Board is persuaded that a mistake has been made; Kitsap's wetland exemption is clearly erroneous.

State Review

Growth Management Hearings Board Decisions

Eastern Washington

Concerned Friends of Ferry County, v. Ferry County, 97-1-0018, Order on Reconsideration, (Nov. 24, 1999). It is the County's obligation to include best available science in the designation and protection of frequently flooded areas. Ferry County, by its failure to demonstrate otherwise, forces this Board to conclude that best available science was not included in developing policies in the sections of the Second Amended Ordinance 95-06 under review. The contention that the silence of the reviewing Department is considered approval and constitutes consideration and inclusion of best available science is not correct.

Critical Areas Policies in the Comprehensive Plan and Subarea Plans

Court Decisions

Honesty in Environmental Analysis & Legislation (HEAL) v. Central Puget Sound Growth Management Hearings Board, 96 Wn. App. 522, 979 P.2d 864 (June 21, 1999) (amended Aug. 25, 1999). Growth Management Hearings Boards may review critical areas policies for compliance with the best available science requirement. The Court acknowledged that the GMA does not require local governments to adopt critical areas policies, but held that if a city or county chooses to adopt critical areas policies, the Board has jurisdiction under RCW 36.70A.280 to review the policies to determine whether they comply with RCW 36.70A.170 and .172(1).¹⁴

Growth Management Hearings Boards

Central Puget Sound

Fuhriman, et al v. City of Bothell, 05-3-0025c, FDO (August 29, 2005), at 34-36. [The City designated a 357 acre area with an R-40,000 minimum lot size – Fitzgerald Subarea. The basis for the designation to protect large-scale, complex, high rank value critical areas that could not be adequately protected by

¹⁴ 96 Wn. App. at 528. The court inadvertently referred to RCW 36.70A.171 (which does not exist), rather than RCW 36.70A.170.

existing critical areas regulations.] It seems apparent to the Board that, at least for the 357-acres disputed here, the City's present critical areas regulations were believed to be inadequate in protecting the critical areas at issue. This is evidenced by the Litowitz Test Report [which identified the area as having large-scale, complex and high rank value critical areas] and the fact that even the Planning Commission [which did not support the designation] recommended a "special overlay designation" and "special protections and regulations" to be developed to adequately protect the critical areas in question. The Commission's recommendation by itself evidences perceived inadequacies in the City's existing critical areas regulations that can support the added protection of the R136 40,000 designation. Further, the overall size and interconnectedness of the affected hydrologic system is well documented; it is not inappropriate to look at a sub-basin or related hydrologic feature to assess critical areas in a specific area. [The Board upheld the R-40,000 designation for the affected area.]

[The City designated a portion of the Norway Hill area with an R-40,000 minimum lot size. Steep slopes, erosive soils, difficulty in providing urban services and connection to an aquifer and salmon stream were the basis for the designation. The Board noted that only a portion of the area designated was within the city limits, the remainder being within the unincorporated county, but within the UGA and planned annexation area of the City.] There is no question that the area designated R-40,000 within the Norway Hill Subarea is not a large scale, complex, high rank order value critical area as analyzed in the Board's Litowitz case. The City's Litowitz Test Report confirms this conclusion. However, in a recent Board decision [Kaleas, 05-3-0007c, FDO.], the Board acknowledged that the critical areas discussed in the Litowitz case, and several cases thereafter, were linked to the hydrologic ecosystem, and that the Board could conceive of unique geologic or topographical features that would also require the additional level of protection of lower densities in those limited geologically hazardous landscapes. [To qualify, geologically hazardous critical areas would have to be mapped, and use best available science, to identify their function and values. The Board concluded that the geologically hazardous areas on Norway Hill were mapped, and the area contained aquifers connected to salmon bearing streams. The Board upheld the R-40,000 designation for the affected area.] FDO, at 37-39.

Tulalip Tribes of Washington v. City of Monroe, 99-3-0013, January 28, 2000 Order, at 4. [The Tribe] has raised important and provocative questions about the responsibility of a city to protect fish habitat in view of the recent federal listings of Chinook salmon, bull trout, and other species. The GMA contains specific requirements for local governments to designate and protect critical areas, including fish and wildlife habitat. . . . Significantly, the Tribes insist that they are not challenging the City's critical areas regulations adopted pursuant to [the GMA]. They instead assert that the City' [adoption of a Subarea Plan] violates the GMA because the Subarea Plan and critical areas regulations are inextricably intertwined.

The critical area scheme set out by the GMA for [jurisdictions] is: (1) designate critical areas by September 1, 1991; (2) adopt development regulations to protect these designated critical areas by September 1, 1991; and (3) when adopting a comprehensive plan by the July 1, 1994 deadline, review the critical area designations and protective development regulations. In other words, the requirement of RCW 36.70A.060(3) applies to the adoption of the initial comprehensive plan required by RCW 36.70A.040; nothing in RCW 36.70A.060(3) creates a duty for the [jurisdiction] to review its critical area designations and development regulations upon adoption of a subsequent subarea plan. 1/28/00 Order, at 10.

Taxes and Fees on Development

Court Decisions

Olympic Stewardship Foundation v. Western Washington Growth Management Hearings Board, 166 Wn. App. 172 (2012), *review denied*, 174 Wn.2d 1007 (2012).

Olympic Stewardship Foundation challenged Jefferson County's regulations which restricted vegetation removal in zones surrounding rivers at high risk for channel migration (channel migration zones or CMZ). The CMZ was designated as a critical area under the "geologically hazardous areas" component of the definition. Among other issues, the Foundation challenged the vegetation removal restrictions as being in violation of RCW 82.02.020 which prohibits local governmental bodies from imposing taxes, fees or charges on development. The court found that by prohibiting vegetation removal and development only within those areas determined to be "high risk" critical areas, any dedications of land within the critical areas are de facto "reasonably necessary as a direct result of the proposed developments," in compliance with RCW 82.02.020. Local governments can impose restrictions on development without running afoul of RCW 82.02.020 where they can demonstrate that restrictions are reasonably necessary as a direct result of the proposed development. The development conditions must be tied to a specific, identified impact of a development on a community (thus both a nexus and rough proportionality to the impacts).

Citizens for Rational Shoreline Planning v. Whatcom County, 172 Wn.2d 384, 387, 258 P.3d 36, 38 (2011).

Generally, RCW 82.02.020 prohibits local governmental bodies from imposing taxes, fees or charges on development not authorized in state law. The plaintiffs in the case alleged that the regulations in Whatcom County's shoreline management plan (SMP) constituted a direct or indirect tax or fee. The plaintiffs also argued that the SMP was subject to RCW 82.02.020 because the regulations mirrored the County's critical areas ordinance. The court held that an SMP is required by state law and subject to the review and approval of Ecology, and so does not constitute local action for the purposes of RCW 82.02.020. The court also held that the even if portions of the SMP were essentially the same as the County critical areas ordinance, this didn't make the SMP challengeable under RCW 82.02.020.

Citizens' Alliance for Property Rights v. Sims, 145 Wash. App. 649, 654, 187 P.3d 786, 788–89 (2008).

As part of its critical areas ordinance, King County imposed limitations on the amount of land that could be graded or cleared in on a given parcel of property zoned as rural. The limits depended on parcel size. Citing Isla Verde Int'l Holdings, Inc. v. City of Camas (146 Wn.2d 740, 49 P.3d 867 (2002)) and other cases, the court of appeals noted that ordinances that imposed conditions or payments in lieu of compliance constituted an "in kind indirect tax, fee, or charge on new development." The County argued that this regulation was mandated by the GMA as part of its critical areas protection. The court recognized that a critical areas ordinance is mandated by the GMA but observed that the County has much latitude in compliance and the GMA didn't mandate the County's particular grading and clearing restrictions. Local governments have authority to adopt regulations and impose conditions for development, but courts have allowed these conditions only where the purpose is to mitigate problems caused by particular development and are reasonably necessary as a direct result of the development.

Appendix 1.C

Example Findings of Fact

Bellevue

Des Moines

Edmonds

Selah

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 9152

A RESOLUTION regarding completion of the required periodic update to City of Bellevue development regulations for consistency with the requirements of the Growth Management Act pursuant to Chapter 36.70A RCW.

WHEREAS, the Bellevue Comprehensive Plan initially was adopted on December 6, 1993, and was updated November 29, 2004; and

WHEREAS, on October 22, 2012, the Bellevue City Council initiated a Comprehensive Plan update to respond to the requirement of the state Growth Management Act to periodically update such plans; and

WHEREAS, the City engaged in a multi-year planning process to update the Comprehensive Plan that included public events and open houses; over 70 meetings of different boards and commissions; an online strategy that included a project website, social media, and online open house; meetings with neighborhoods and stakeholders; a series of press releases and op-eds; and a speaker series; and

WHEREAS, the Planning Commission held a public hearing on March 4, 2015, with regards to the proposed update to the Comprehensive Plan; and

WHEREAS, on March 25, 2015, the Planning Commission recommended that the City Council approve such proposed update; and

WHEREAS, the Planning Commission's recommendation was presented to the City Council by representatives of the Planning Commission, Arts Commission, Environmental Services Commission, Human Services Commission, Parks and Community Services Board, and Transportation Commission on April 6, 2015; and

WHEREAS, pursuant to RCW 36.70A.130(1), the City Council adopted the Comprehensive Plan update on August 3, 2015; and

WHEREAS, following adoption of the Comprehensive Plan update in August 2015, City worked to evaluate its development regulations to ensure consistency with the requirements of Chapter 36.70A RCW; and

WHEREAS on April 4, 2016, City of Bellevue staff completed an analysis of the City's development regulations for consistency with the requirements of Chapter 36.70A RCW, and staff found the development regulations and protections currently in effect complied with Chapter 36.70A RCW, with the exception of certain critical areas regulations; and

WHEREAS, the Bellevue City Council held a public hearing on April 18, 2016 to receive public comments on the recommended staff findings on review, but no members of the public made any comments; and

WHEREAS, based on its review of the requirements of Chapter 36.70A RCW, the analysis and findings prepared by staff, and the lack of public comments received at the public hearing, the City Council found and declared pursuant to Resolution No. 9094 that the development regulations and protections currently in effect comply with Chapter 36.70A RCW, with the exception of certain critical areas regulations; and

WHEREAS, pursuant to RCW 36.70A.130(7), the deadline for the City to review its critical area regulations and to provide an update to the Washington Department of Commerce passed on June 30, 2016; and

WHEREAS, although the City had worked diligently to complete the Best Available Science and Existing Conditions Technical Reports and Gap Analysis (included with the Resolution as Attachment 1 and to develop a package of code amendments to ensure that the Bellevue critical areas overlay complies with the critical areas regulations in Chapter 36.70A RCW, more time was needed for the City to complete its review and adoption of necessary code amendments; and

WHEREAS, the Bellevue City Council held a public hearing on October 10, 2016, to receive public comments on the recommended code amendments necessary to comply with the critical areas regulations in Chapter 36.70A RCW; and

WHEREAS, contemporaneously to the GMA required update to the critical areas regulations, the City of Bellevue submitted its required update to its Shoreline Master Program to the Department of Ecology in compliance with the Shoreline Management Act (SMA) Chapter 90.58 RCW; and

WHEREAS, the required update to the Shoreline Master Program submitted to the Department of Ecology on December 30, 2015, and the updates subsequently required to the Bellevue critical areas overlay amend overlapping sections of the Bellevue City Code; and

WHEREAS, in order to avoid confusion or inadvertent inconsistencies between the amendments to the Bellevue critical areas overlay necessary to comply with GMA, and amendments that were approved by the Council to comply with SMA, the GMA and SMA updates have been consolidated in a single code amendment included in this Resolution as Attachment 1, and

WHEREAS, Chapter 90.58 RCW has granted to the Department of Ecology approval authority over local shoreline master programs, and the Bellevue shoreline master program incorporates the critical areas overlay by reference, the shoreline

master program and critical area updates will both become effective upon approval by the Department of Ecology; and

WHEREAS, based on its review of the requirements of Chapter 36.70A RCW, the analysis and findings prepared by city staff and consultants, the City Council finds and declares that the review and findings have been prepared in conformance with Chapter 36.70A RCW, Chapter 90.58 RCW, Chapter 43.21C RCW, and sections 20.35.400 through 440 and Part 20.30J of the Bellevue City Code; now, therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:


Section 1. Based on its review of the requirements of Chapter 36.70A RCW, the analysis and findings prepared by staff, and the public comments received, the City Council hereby finds and declares that the development regulations and protections as updated by code amendments contained in Attachment 1 to this Resolution comply with Chapter 36.70A RCW and that the update required by RCW 36.70A.130(1)(a) is complete.

Section 2. The City Manager is hereby authorized to submit this Resolution along with the attachments to the Washington State Department of Commerce to demonstrate compliance with the required GMA periodic update completed as of the date of this Resolution.

Section 3. The City Manager is hereby further authorized to submit this Resolution along with the attachments to the Washington State Department of Ecology for review and to become effective upon Ecology approval.

Passed by the City Council this 10th day of October, 2016, and signed in authentication of its passage this 12th day of October, 2016.

(SEAL)



John Stokes, Mayor

Attest:


Kyle Stannert, City Clerk

EXHIBIT A

ORDINANCE NO. 1649

Findings of Fact

**Review and Revision of Comprehensive Plans and Development
Regulations Required (RCW 36.70A.040)**

1. Counties and cities required to plan under RCW 36.70A.040 must review, and revise if necessary, their entire comprehensive plan and development regulations. These cities and counties should affirm this status in their findings.
2. The City of Des Moines is required to plan under RCW 36.70A.040. Every seven years, RCW 36.70A.130(1) requires City of Des Moines to take legislative action to review and, if needed, revise its comprehensive plan and development regulations, including its policies and regulations designating and conserving natural resource lands and designating and protecting critical areas to comply with the requirements in Chapter 36.70A RCW.
3. Pursuant to RCW 36.70A.130(4), the deadline for the City of Des Moines to comply with the update required by RCW 36.70A.130(1) is June 30, 2015.
4. On June 25, 2015, the City of Des Moines adopted Ordinance No. 1623 revising and updating the comprehensive plan now entitled *Des Moines 2035: Charting Our Course for a Sustainable Future*.
5. Washington Department of Commerce August 19, 2015 letter to the City of Des Moines indicating:
 - a. Receipt of Des Moines's adopted Ordinance No. 1623 on June 6, 2015;
 - b. Completion of the City's comprehensive plan review and update required under RCW 36.70A.130(1); and
 - c. Notifying the City of the need to finalize the review and update of the City's development regulations and critical area regulations.
6. On August 11, 2015, consultant Parametrix prepared a technical memorandum related to the Federal Emergency Management Agency's National Flood Insurance Program Compliance Review

that discussed the City's on-going participation in the Program and strategies to achieve compliance with the Biological Opinion from National Marine Fisheries Services to apply Reasonable and Prudent Alternatives to protect listed species and their critical habitat, referred to as Door 1, Door 2, or Door 3 strategies and recommending that the City of Des Moines remain in Door 3.

7. On October 26, 2015, consultant AHBL, Inc. prepared a GAP analysis of the City's environmentally critical area regulations currently in effect in the City of Des Moines for consistency with the requirements of Chapter 36.70A.172 RCW and best available science. This analysis was supplemented by a February 12, 2016 technical memorandum related to the National Flood Insurance Program Compliance. Based on this analysis, AHBL, Inc. prepared proposed revisions to Des Moines environmentally critical area regulations it concluded are needed to comply with Chapter 36.70A RCW.
8. The Des Moines City Council Environment Committee reviewed the analysis and recommended updates to the environmentally critical area regulations at their February 18, 2016 meeting and recommended that proposed revisions be brought forward to the full City Council at a public hearing.
9. On March 10, 2016, a 60-day notice of intent to adopt the proposed amendments was sent to the Washington State Department of Commerce and the City received acknowledgement from Commerce that the procedural requirements of RCW 36.70A.106 have been met on March 16, 2016.
10. On March 31, 2016, Des Moines City Council adopted Resolution No. 1327 setting a public hearing date on May 12, 2016 to consider Draft Ordinance No. 15-147 amending the City of Des Moines development regulations relating to the protection and regulation of environmentally critical areas to ensure compliance with the Washington State Growth Management Act (chapter 36.70A RCW).
11. On April 6, 2016 a combined Notice of Public Hearing and SEPA Determination of Nonsignificance was issued providing for a 15-day comment period and 10-day appeal period and no comments or appeals were filed.
12. On May 12, 2016, the Des Moines City Council held a public hearing to receive public comments on the recommended findings on review and proposed revisions. Based on its review of the

requirements of Chapter 36.70A RCW, the analysis and proposed revisions prepared by (staff and consultants AHBL, Inc. and Parametrix), the recommended findings on review and proposed revisions, the Des Moines City Council finds and declares that the review and needed revisions have been prepared in conformance with applicable law, including Chapter 36.70A RCW, Chapter 43.21C RCW, and appropriate public participation and adoption process established in chapter 18.20 DMMC.

ORDINANCE NO. 4026

AN ORDINANCE OF THE CITY OF EDMONDS, WASHINGTON, AMENDING THE CRITICAL AREAS REGULATIONS CONTAINED IN EDMONDS COMMUNITY DEVELOPMENT CODE CHAPTERS 23.40 ENVIRONMENTALLY CRITICAL AREAS GENERAL PROVISIONS, 23.50 WETLANDS, 23.60 CRITICAL AQUIFER RECHARGE AREAS, 23.70 FREQUENTLY FLOODED AREAS, 23.80 GEOLOGICALLY HAZARDOUS AREAS, AND 23.90 FISH AND WILDLIFE HABITAT CONSERVATION AREAS, AMENDING ECDC SECTION 19.00.025, A PROVISION OF THE BUILDING CODE RELATED TO FREQUENTLY FLOODED AREAS, AMENDING ECDC SECTION 21.40.030, TO ADD A NEW EXCEPTION TO THE DEFINITION OF "HEIGHT" FOR USE IN COASTAL HIGH HAZARD AREAS AND COASTAL "A" FLOOD ZONES; AMENDING CERTAIN PERMIT REVIEW PROCESSES RELATED TO CRITICAL AREAS IN ECDC SECTIONS 20.01.003 AND 20.03.002.

WHEREAS, the City of Edmonds is required to plan under RCW 36.70A.040; and

WHEREAS, RCW 36.70A.130(1) requires City of Edmonds to take legislative action to review and, if needed, revise its comprehensive plan and development regulations, including its policies and regulations designating and conserving natural resource lands and designating and protecting critical areas to comply with the requirements in chapter 36.70A RCW (the Growth Management Act or GMA); and

WHEREAS, on June 16, 2015, the city council of the City of Edmonds reviewed its comprehensive plan and conducted a public hearing on the 2015 update to the City of Edmonds comprehensive plan; and

WHEREAS, the City of Edmonds adopted the 2015 update to the City of Edmonds comprehensive plan with Ordinance 4003; and

WHEREAS, based on early direction from the City Council, the 2015 update did not involve a major policy shift, but instead focused on consistency and streamlining, including the latest data, as well as the addition of several performance measures; and

WHEREAS, it was determined during this review process that, with the exception of the critical areas regulations, the City of Edmonds' development regulations remained consistent with and would continue to implement the comprehensive plan and the proposed update to it so that no other development regulations would need to be revised at this time; and

WHEREAS, the Growth Management Act (GMA) defines "critical areas" to include the following areas and ecosystems: (a) wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas; and

WHEREAS, the GMA requires that each city adopt development regulations that protect critical areas; and

WHEREAS, cities in Snohomish County are expected to take action to review and, if needed, revise their comprehensive plans and development regulations to ensure the plan and regulations comply with the requirements of the GMA on or before June 30, 2015, and every eight years thereafter; and

WHEREAS, cities must include the best available science in developing policies and development regulations to protect the functions and values of critical areas; and

WHEREAS, cities must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries; and

WHEREAS, the City has not comprehensively reviewed its critical areas ordinance and best available science since 2005 when the current version of the critical area regulations became effective; and

WHEREAS, the City selected environmental consultants ESA to assist the City in updating the 2004 City's Best Available Science Report (Exhibit 1 to September 8, 2015 agenda memo 7969) and to evaluate the City's critical area regulations given the changes in science; and

WHEREAS, the Best Available Science addendum prepared by ESA reviewed the current science related to critical areas as it has changed since 2004 (see Exhibit 2 to September 8, 2015 agenda memo 7969); and

WHEREAS, ESA also prepared a memo for the City's review that outlines certain provisions that may deviate from Best Available Science, as required by WAC 365-195-915; and

WHEREAS, the Planning Board reviewed proposed changes to the critical area regulations over the course of five Planning Board meetings between March 25 and July 22, 2015; and

WHEREAS, the Board's review included a July 8, 2015 public hearing; and

WHEREAS, the Planning Board forwarded its recommended changes to the City's critical area regulations to the City Council; and

WHEREAS, the Planning Board also forwarded a recommendation for some modifications to the building code Title 19 ECDC and definitions in Title 21 ECDC, in conjunction with its recommendations on critical areas and frequently flooded area regulations; and

WHEREAS, the City Council reviewed the draft updated critical area regulation as recommended by the Planning Board at the September 8, 2015 Council meeting and continued that review at the September 22, 2015 Council meeting; and

WHEREAS, the City Council held a public hearing at the October 6, 2015 City Council meeting and continued to review the critical area regulations at the November 2, 2015 City Council meeting; and

WHEREAS, the City Council directed the City Attorney to prepare an ordinance to adopt the updated critical areas regulations as amended by the City Council during the December 15, 2015 City Council meeting; and

WHEREAS, the Mayor asked the City Council to reconsider the amendments that were approved during the December 15, 2015 City Council meeting; and

WHEREAS, the Mayor forwarded to the City Council a December 22, 2015 memo that addresses the implications of the December 15, 2015 amendments; and

WHEREAS, on January 26, 2016, the City Council adopted a critical areas ordinance in the form of Ordinance 4017, which included the eight amendments made at the December 15, 2015 City Council meeting; and

WHEREAS, Ordinance 4017 was vetoed by Mayor Earling on January 28, 2016; and

WHEREAS, at the February 2, 2016 City Council meeting, rather than voting on whether to override the veto, the City Council discussed returning to the December 15, 2015 (pre-amendments) version of the critical area regulations and providing staff a new set of proposed amendments, using that version as a baseline, for discussion at future City Council meetings; and

WHEREAS, an initial set of proposed amendments were discussed at the February 23, 2016 City Council meeting; and

WHEREAS, the City Council adopted Resolution 1351 on March 1, 2016, which expressed a goal date of April 30, 2016 for adoption of another critical areas ordinance and made a finding that, except for the critical areas ordinance, the required 2015 review of the City's comprehensive plan and development regulations had been completed and found to be consistent with the GMA; and

WHEREAS, the City Council decided to hold another public hearing on potential amendments to the draft critical area regulations on March 15, 2016; and

WHEREAS, the City Council took preliminary action on the proposed amendments on March 15, 2016, April 5, 2016, April 12, 2016 and April 19, 2016; and

WHEREAS, this ordinance serves as the final legislative action required by the City under RCW 36.70A.130 for the 2015 review and update;

NOW, THEREFORE,

THE CITY COUNCIL OF THE CITY OF EDMONDS, WASHINGTON, DO ORDAIN AS FOLLOWS:

Section 1. The following chapters of the Edmonds Community Development Code are hereby amended to read as set forth in **Attachment A** hereto, which is incorporated herein by this reference as if set forth in full (new text is shown in underline; deleted text is shown in ~~striketrough~~; text moved from one location to another is shown in double underline where it was moved to and shown in ~~double striketrough~~ where it was moved from; new graphics have an underline under the graphic; deleted graphics have been crossed-out with an X): chapter 23.40, entitled "Environmentally Critical Areas General Provisions;" chapter 23.50, entitled "Wetlands;" chapter 23.60, entitled "Critical Aquifer Recharge Areas;" chapter 23.70, entitled

ORDINANCE NO. 2019

**AN ORDINANCE ADOPTING THE SELAH GMA
PERIODIC UPDATE OF THE CRITICAL AREAS ORDINANCE**

WHEREAS, in compliance with the Washington State Growth Management Act (GMA), the City adopted a Comprehensive Plan in 2006; and,

WHEREAS, in accordance with RCW 36.70A.130, an adopted Comprehensive Plan shall be subject to continuing evaluation and review, and amendments to the Comprehensive Plan shall be considered no more frequently than once every year; and,

WHEREAS, the schedule established by the GMA in RCW 36.70A.130(4) mandates each fully planning city in Washington to take action to review and, if necessary, revise its comprehensive plan, development regulations and critical areas ordinance to ensure compliance with the Growth Management Act; and,

WHEREAS, the City has updated the Comprehensive Plan, development regulations and critical areas ordinance to ensure compliance with any changes to the GMA; to ensure compliance with the Yakima County Countywide Planning Policies; to fully reflect the issues and opportunities facing the City; to insure internal and regional consistency; and to revise policies and other language in the plan to update information, improve readability and eliminate redundancy; and,

WHEREAS, the Selah City Council has reviewed the updated critical areas ordinance regulations as required by the GMA; and,

WHEREAS, the amendments to the Critical Areas Ordinance implement the goals and policies of the Comprehensive Plan which establishes the community's desirable character and physical pattern of growth and preservation over the next 20 years; and,

WHEREAS, the GMA periodic update provides guidance in balancing the development of resources with the preservation of environmental values; and,

WHEREAS, the Comprehensive Plan sets goals and policies for growth that will be implemented through the development regulations and critical areas ordinance contained in the Selah Municipal Code, including the zoning ordinance and official zoning map, in a fiscally and environmentally responsible fashion; and,

WHEREAS, the recommended revisions incorporate changes in State law, Countywide Planning Policies, demographics and land use resources;

WHEREAS, Chapter 43.21C RCW, the State Environmental Policy Act (SEPA) requires

the City of Selah to conduct environmental review of the periodic update and amended Critical Areas Ordinance; and,

WHEREAS, on June 5, 2017, the City of Selah published in the legal advertising section of the Yakima Herald Republic, the legal newspaper for the City of Selah, notice of the City of Selah Council's public hearing scheduled for June 27, 2017, to consider the periodic update of the Selah Comprehensive Plan and Critical Areas Ordinance amendments. A Mitigated Determination of Nonsignificance (MDNS) was issued based on comments of agencies and affected tribes on May 30, 2017; and,

WHEREAS, the proposed Critical Areas Ordinance amendments were made available for review on the City of Selah's website at <http://www.selahwa.gov/>; and,

WHEREAS, all persons desiring to either provide written testimony or speak for or against or in relation to the proposed Critical Areas Ordinance amendments at public hearings held by the Planning Commission on June 6, 2017 and the City Council Meeting on June 27, 2017, were given a full and complete opportunity to be heard; and,

WHEREAS, the City Council of the City of Selah has concluded that the adoption and implementation of proposed Critical Areas Ordinance amendments is essential to direct the future growth and development of the City of Selah.

NOW THEREFORE BE IT HEREBY ORDAINED BY THE CITY COUNCIL OF THE CITY OF SELAH:

Section 1. Findings and Conclusions. The City Council bases its findings and conclusions on the entire record of testimony and exhibits, including the recommendation of the Planning Commission and all written and oral testimony before the City Council. The Selah City Council hereby adopts the following findings and conditions as recommended by the Planning Commission:

1. The proposed Comprehensive Plan Update and development regulation revisions, including amendments of SMC 10, SMC 11.50 and SMC 21 meet the requirements of the Growth Management Act.
2. As required by law, best available science was used in developing the amendments to the Critical Areas Ordinance. They incorporate recommendations made by the Washington Department of Ecology and the Yakama Nation. As required by WAC 365-195-925, the following findings are with respect to the Best Available Science (BAS) used in drafting the amendments:
 - a. The original amendments were prepared for the City by the Yakima Valley Conference of Governments (YVCOG) using best available science. Further

revisions in the original draft have been made by staff and recommended to the Planning Commission by the Department of Ecology, a State natural resource agency and the Yakama Nation. Consultation with State and Federal natural resource agencies and Tribes can provide a quick and cost-effective way to develop scientific information and recommendations (WAC 365-195-910(1)).

- b. It is the belief of staff that the best available science used by YVCOG along with the recommendations made by the Yakama Nation and Department of Ecology are applicable to the local area.
 - c. Special Consideration has been given in preparing the CAO updates to the preservation of anadromous fisheries, as indicated by the recommendations of the Yakama Nation and incorporation of those recommendations into the periodic update.
3. *Internal Consistency:* The proposed Critical Areas Ordinance amendments are consistent with and implement the Comprehensive Plan. They are consistent with the Growth Management Act and other requirements of State law. Both together and separately, the comprehensive plan update and Critical Areas Ordinance amendments further the goals of the Growth Management Act.
4. The public use and interest will be served.
5. *Environmental Review:* Environmental Review for the entire proposal was conducted under the State Environmental Policy Act (SEPA). A Determination of Nonsignificance (DNS) was issued on March 27, 2017 and withdrawn and a Mitigated Determination of Nonsignificance (MDNS) was issued on May 30, 2017. Comments that were made were received and considered. The City Council finds that environmental review that was conducted is adequate.
6. The proposed amendments were submitted to and received by the Department of Commerce for the required 60-day review on March 24, 2017. The review period ended May 23, 2017. Comments were received and considered related to definitions of wetland categories. These comments were incorporated into the currently proposed amendments.
7. *Public Participation:* Public notice of the public hearing was published in the official newspaper of the City and sent to all parties who expressed interest in being notified and who commented on the plan and development regulations through the public review and SEPA processes. Comments were received and considered.
8. This action is part of the required periodic update under the Growth Management Act.

Upon adoption of these amendments by the Selah City Council, the City will have taken all necessary action and the periodic update would be complete.

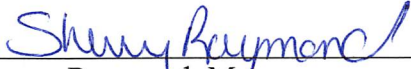
Section 2. Adoption of the City of Selah GMA Periodic Update. The City of Selah hereby adopts the City of Selah GMA Periodic Update, a copy of which is attached to this ordinance.

Section 3. Transmittal to State. This ordinance shall be submitted to the Washington Department of Commerce for their records within 10 days of adoption.

Section 4. Severability/Validity. The provisions of this ordinance are declared separate and severable. If any section, paragraph, subsection, clause or phrase of this ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portion of this ordinance. The City Council hereby declares that they would have passed this ordinance and each section, paragraph, subsection, clause or phrase thereof irrespective of the fact that any one or more sections, paragraphs, clauses or phrases were unconstitutional or invalid.


Section 5. Effective Date. This ordinance shall be in full force and effect 5 days after its passage and publication as required by law.

Dated this 27th day of June, 2017



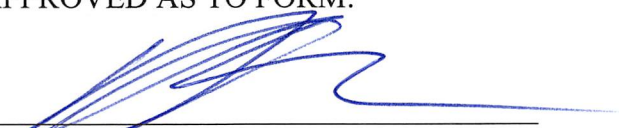
Sherry Raymond, Mayor

ATTEST:



Dale E. Novobielski, Clerk-Treasurer

APPROVED AS TO FORM:



Robert Noe, City Attorney

ORDINANCE NO. 2019



Department of Commerce

Critical Areas Handbook

Chapter 2

Resources for Designating and Protecting Critical Areas

June 2018

Brian Bonlender, Director

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Designating and Protecting Critical Areas

Local governments are required to do two things to comply with the Growth Management Act (GMA): (1) designate critical areas; and (2) protect their functions and values. In doing so, they must include the best available science, and must give special consideration to anadromous fish.¹

Designating critical areas is an important part of a successful critical areas protection program. When critical areas are not precisely designated, they may go unprotected even if the protection measures are otherwise very strong. In making the designation, counties and cities are required to consider the minimum guidelines established pursuant to RCW 36.70A.050. This chapter discusses in a little more detail the minimum guidelines for each type of critical area. Most importantly, this chapter provides references and links to sources of best available science and management recommendations for each type of critical area. Counties and cities reviewing their critical area regulations for possible updates should consult the critical areas checklist and the Commerce Critical Areas web site for updated links to those resources², as well as this handbook.

The guidelines reference the statutory requirement to include best available science, and recommend that counties and cities designate critical areas using maps and performance standards.³ Designation is usually done with a map such as a zoning map. However, there is not usually enough on-the-ground information to do an effective job of designating critical areas using this method. Critical areas designation is typically done through performance standards. The term “performance standards” means the criteria or characteristics of the land that determine it is a critical area.⁴ Even so, rough mapping of critical areas for information purposes is advisable because it raises awareness and can be useful for triggering site scale analysis.

The adoption of performance standards provides a way to designate critical areas without requiring a prohibitively expensive inventory and mapping before the requirements for protecting the critical area would apply. Instead, the legislative act of designation is the adoption of criteria, or performance standards, that are used to determine a particular area is a critical area by applying the criteria on the ground. This typically happens during local project review. For example, the criteria may identify characteristics such as the presence of certain plant communities or the presence of hydric soils as performance standards indicating a wetland. Determining the exact location of the boundary only occurs through a delineation process during the site investigation associated with development. The National Wetlands Inventory map shows some but not all wetlands. The duty to protect wetlands exists regardless of whether a particular wetland is in the National Wetland Inventory.

¹ RCW 36.70A.172

² See the [Commerce Growth Management Critical Areas web page](#).

³ WAC 365-190-080(3) and (4)

⁴ WAC 365-190-040(5), WAC 365-190-080(4)

All areas meeting the definition of one or more critical area type, regardless of any formal identification, are required to be designated critical areas. Resources for designating each type of critical area are provided below.

All critical areas in all counties and cities must be designated. There are no exemptions, exclusions, or limitations to this requirement. The growth management hearings boards have consistently held that local governments must designate and protect all five categories of critical areas present within the boundaries of their jurisdiction. This mandate applies equally to urban, rural, and resource lands. The GMA does not discriminate; it simply requires that their functions and values be protected wherever they are found.⁵

Designating and Protecting Wetlands

Wetlands are fragile ecosystems that serve a number of important beneficial functions. Wetlands reduce the impacts of erosion, siltation, flooding, ground and surface water pollution, and provide wildlife, plant and fisheries habitats. Wetlands destruction or impairment may result in increased public and private costs or property losses.

In designating wetlands for regulatory purposes, counties and cities are required to use the definition of wetlands in RCW [36.70A.030](#)(21)⁶:

[A]reas that are inundated or saturated by surface water or groundwater 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 nonwetland 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 nonwetland areas created to mitigate conversion of wetlands.

WAC 173-22-035 requires that identification of wetlands and delineation of their boundaries be done in accordance with the approved federal wetland delineation manual and application regional supplements. Counties and cities are encouraged to make their actions consistent with

⁵ *Pilchuck Audubon Society, et al v. Snohomish County*, 06-300015c, September 15, 2006. See Appendix 1.B for a more comprehensive summary of case law on this topic.

⁶ Amended in 2012.

the intent and goals of “protection of wetlands”, Executive Orders 89-10 and 90-04, as they existed on September 1, 1990.⁷

Sources of Wetlands Science and Management Recommendations

A key resource for reviewing and updating wetlands designation and protection provisions is the Washington Department of Ecology’s [GMA and Local Wetland Regulations web page](#).⁸ It provides a comprehensive synthesis of the science regarding freshwater wetlands by the state Departments of Ecology (Ecology) and Fish and Wildlife (WDFW) to assist local governments (March 2005). There are guidance publications for counties and cities regarding protecting and managing wetlands (April 2005 and June 2016), and wetlands mitigation (March 2006)⁹.

Because wetland functions vary widely, counties and cities have been encouraged to develop a wetlands rating system to determine which functions should be protected. Counties and cities that do not now rate wetlands should consider a wetlands rating system to reflect the relative function, value, and uniqueness of wetlands in their jurisdictions. In developing wetlands rating systems, counties and cities should consider using the wetland rating system Ecology developed.¹⁰

If a county or city chooses not to use the state wetlands rating system, the rationale for that decision needs to be included in its legal record and it must include best available science. A rating system should evaluate, at a minimum, the following factors:

- Wetlands functions and values;
- Degree of sensitivity to disturbance;
- Rarity;
- The degree to which a wetland contributes to functions and values of a larger ecosystem. Rating systems should generally rate wetlands higher when they are well-connected to adjacent or nearby habitats, are part of an intact ecosystem or function in a network of critical areas; and
- The ability to replace the functions and values through compensatory mitigation.¹¹

Counties and cities may use the National Wetlands Inventory as an information source to determine the approximate distribution and extent of wetlands. This inventory provides maps

⁷ WAC 365-190-090(2)

⁸ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations/Local-regulations>

⁹ Note: The mitigation guidance is being revised and will be published in late 2018.

¹⁰ WAC 365-190-090(3)(b). See Ecology’s [GMA and Local Wetland Regulations web page for the 2014 updates to the Washington State Wetlands Rating System for Western Washington and Eastern Washington, respectively](#).

¹¹ WAC 365-190-090(3)(c)

of wetland areas according to the definition of wetlands issued by the U.S. Department of Interior Fish and Wildlife Service.

For additional information about marine and estuarine shoreline wetland modification issues go to the [Aquatic Habitat Guidelines web page](#).¹²

Contact information for Ecology wetlands specialists is also available on the Ecology [GMA and Local Wetland Regulations web page](#)¹³ if you have a specific question.

Special Consideration for Anadromous Fisheries

Wetland buffers protect water quality and flow regime, and provide habitat structure and a source of food for fish. Ecology's 2014 updated wetlands rating system guidance for [Eastern](#) and [Western](#) Washington discuss the influence of forested wetlands.¹⁴ They influence channel form, and create pools, riffles, and side channels that are essential habitat for many fish and other aquatic species. The guidance also notes that wetlands with streams running through them in the Puget Sound area and on the Columbia River will probably be providing habitat for one or more species of threatened or endangered fish.

WDFW identifies wetlands as a priority habitat by WDFW for salmonids in every county in the state.¹⁵ Wetlands and associated vegetation provide essential off-channel habitat to sustain young salmonid growth and protect them from predators. Wetland habitat also hosts amphibious species and insects that are potential food sources for salmonids. Wetlands moderate stream flows by preserving adequate water recharge to streams during low flow periods and protect rearing salmonids from the effects of high flows. Consequently, WDFW recommends adhering to Ecology guidance for identifying, classifying and protecting wetlands.¹⁶

Court and Growth Management Hearings Board Decisions

The Court of Appeals, Division 3, found that Yakima County failed to justify its departure from best available science in allowing administratively approved wetland buffers of 25 feet in an update to its critical areas ordinance. Yakima County adopted standard buffers and adjusted minimum stream and wetland buffers. The ordinance was challenged for failure to include best available science and failure to protect all the functions and values of the critical areas as

¹² <https://wdfw.wa.gov/conservation/habitat/planning/ahg/>

¹³ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations/Local-regulations>

¹⁴ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations/Local-regulations>

¹⁵ WDFW [Priority Habitats and Species List](#).

¹⁶ WDFW [Land Use Planning for Salmon, Steelhead and Trout](#), page 55.

required by RCW 36.70A.172. Almost all of the scientific studies reviewed by the County recommended buffers greater than those adopted by the County. The court found that the GMA requires that regulations for critical areas must protect all functions and values of the designated areas and not just some. The court noted that the vast majority of best available science included in the decision making process recommended much larger minimum buffers and the County gave no basis in its review for the reduction and also didn't require individual adjustments to be based on best available science.¹⁷

The Eastern Washington Growth Management Hearings Board found that Ferry County failed to protect the functions and values of wetlands. The County chose to protect wetlands using the Ecology's Buffer Alternative 3, which is "[W]idth based on wetland category, intensity of impacts, and wetland functions or special characteristics." The intensity of impacts criteria, which are directly related to the frequency and duration of disturbance, is a key component of Alternative 3. By allowing high impact agricultural activities and residential use in its low intensity wetland areas, the County failed to protect the functions and values of wetlands, and failed to provide any reasoned justification, such as scientific-based information, to depart from Ecology's land use recommendations for Low Intensity Land Use.¹⁸

The Central Puget Sound Growth Management Hearings Board upheld the City of Seattle's decision to allow development impacts to Category IV wetlands (the most degraded) of less than 100 square feet without buffers if they are mitigated by on-site replacement, bioswales, revegetation, or roof gardens.¹⁹ In *Hood Canal*²⁰, the Board acknowledged the potential disproportionality of requiring buffers as the means of protecting functions of the smallest, most degraded wetlands. *Hood Canal*, at 19, fn. 23. The Board noted that other mitigating strategies, such as best management practices or compensatory on-site or off-site mitigation might be scientifically supported. Here, Seattle opted for alternative protection mechanisms for these limited cases of small, isolated, low-functioning wetlands. The Board found the petitioners had not carried their burden of proving that the City's regulations for small Category IV wetlands are clearly erroneous.

The Central Puget Sound Hearings Board found the City of Kent's wetlands regulations out of compliance. The Board held that, in designating critical areas, cities and counties "shall consider" Commerce's minimum guidelines in consultation with Ecology pursuant to RCW 36.70A.050(1) and (3); .170(2). In particular, wetlands "shall be delineated" pursuant to the Ecology manual. RCW 36.70A.175.²¹ The Board found the City's expansion of the statutory

¹⁷ *Yakima County v. Eastern Washington Growth Management Hearings Board*, 168 Wn. App. 680 (2012).

¹⁸ *Concerned Friends of Ferry County/Robinson v. Ferry County*, 06-1-0003, 2nd Compliance Order, March 17, 2009, p.19.

¹⁹ *Seattle Audubon Society, et al v. City of Seattle*, 06-3-0024, FDO, December 11, 2006, p.24.

²⁰ *Hood Canal Environmental Council, et al v. Kitsap County*, 06-3-0012c, FDO, August 28, 2006.

²¹ *Department of Ecology/Department of Community, Trade and Economic Development, et al v. city of Kent*, 05-3-0034, FDO (April 19, 2006), at 10.

exemption results in a failure of accurate designation and, thus, a failure to protect the functions and values of critical areas, as required by RCW 36.70A.172(1).²²

The Central Board held that the petitioners had met their burden of proof by demonstrating that the City of Kent’s record lacks a current scientific basis for its wetlands rating system and that the three tier system is designed “with specific and narrow functions in mind,” rather than protecting “the entirety of functions” of the City’s wetlands. The Board did not find in the City’s record any current science supporting the truncated wetland rating system or indicating how wetland functions will be identified and protected with this system.²³

The Board found that the complexity of wetlands protection is a function of the interplay between land uses, the specific wetland functions at risk, the degree of effectiveness, and other factors that might be more accurately assessed on a case-by-case basis. Where prescriptive regulation is enacted, a first step is designing a ranking system that reflects the full range of wetland functions and so addresses the protection of all functions.²⁴

Kitsap County exempted from regulation very small, truly isolated and poorly functioning wetlands. State agencies advised the County that such exemptions were not supported by best available science. The Central Puget Sound Board reviewed the case of *Clallam County v. Western Washington Growth Management Hearings Board*, 130 Wash. App. 127, 140, 121 P.3d 764 (2005), pertaining to the limitations on exemptions from critical areas regulations. The Board read the court’s opinion to require critical areas ordinance exemptions to be supported by some analysis of cumulative impacts and corresponding mitigation or adaptive management. Here, Kitsap County had not expanded its small wetlands exemption; in fact the exemption had been somewhat narrowed. But the Board found no evidence in the record of the likely number of exempt wetlands, no cumulative impacts assessment or adaptive management, and no monitoring program to assure no net loss. In light of the Court’s guidance in *Clallam County*, which the Board found controlling, the Board found Kitsap’s wetland exemption clearly erroneous.²⁵

Designating and Protecting Fish and Wildlife Habitat Conservation Areas

The GMA requires cities and counties across the state to address land use issues that directly and indirectly impact fish and wildlife habitat. Fish and wildlife habitat conservation is the management of land to ensure sufficient habitat quality, quantity, and connectivity to support long term, viable populations of fish and wildlife species and prevent the creation of isolated

²² Id, at 26.

²³ Id, at 33.

²⁴ Id, at 39.

²⁵ *Hood Canal Environmental Council, et al v. Kitsap County*, 06-3-0012c, FDO, August 28, 2006, p. 19-20.

subpopulations within their natural geographic distribution. This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term. Counties and cities should engage in cooperative planning and coordination to help assure long term population viability.²⁶ Fish and wildlife habitat conservation areas contribute to the state’s biodiversity and occur on both publicly and privately owned lands.

Fish and wildlife habitat conservation areas are areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness.²⁷ Designating these areas is an important part of land use planning for appropriate development densities, urban growth area boundaries, open space corridors, and incentive-based land conservation and stewardship programs.²⁸

Fish and wildlife habitat conservation areas do not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of, and are maintained by, a port district or an irrigation district or company.²⁹ It should be noted that this definition applies only to fish and wildlife habitat conservation areas, and applies only to artificial features or constructs. Many naturally occurring features have been modified or adapted to serve irrigation and drainage purposes, but are still naturally occurring water courses. Also, artificial water courses that pass through, or originate in, regulated wetlands have the potential to negatively impact regulated habitat and critical area functions.

WDFW defines “watercourse”, “river”, or “stream” for the purpose of hydraulic permit applications in the hydraulic code rules.³⁰ Planners should work with WDFW regional habitat biologists to address this issue in their regulations. For example, Island County has defined “regulated water courses” and “non-regulated” water courses in their critical areas regulations.³¹ However, it should be noted that the definition of “regulated” in this context is limited to the application of critical area regulations adopted under the GMA. It does not apply to all regulations in general.

The Minimum Guidelines were updated in 2012 to provide more guidance for designating fish and wildlife habitat conservation areas. WAC 365-190-130 provides:

²⁶ WAC 365-190-130(1)

²⁷ WAC 365-190-030(6)(a)

²⁸ Id.

²⁹ RCW 36.70A.030(5)

³⁰ [WAC 222-660-030](#)(34) defines “ditch”, and (153) defines “watercourse”, “river”, or “stream”.

³¹ [ICC 17.02B.060](#)

Fish and wildlife habitat conservation areas that must be considered for classification and designation include:

- Areas where endangered, threatened, and sensitive species have a primary association;
- Habitats and species of local importance, as determined locally;
- Commercial and recreational shellfish areas;
- Kelp and eelgrass beds; herring, surf smelt, and other forage fish spawning areas;
- Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat;
- Waters of the state;
- Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; or
- State natural area preserves, natural resource conservation areas, and state wildlife.³²

When classifying and designating fish and wildlife habitat conservation areas, counties and cities must include the best available science as described in Chapter 365-195 WAC. Counties and cities should consider the following:

- Creating a system of fish and wildlife habitat with connections between larger habitat blocks and open spaces, integrating with open space corridor planning where appropriate;
- The level of human activity in such areas, including presence of roads and level of recreation type (passive or active recreation may be appropriate for certain areas and habitats);
- Protecting riparian ecosystems, including salmonid habitat, which also include marine shoreline areas;
- Evaluating land uses surrounding ponds and fish and wildlife habitat areas that may negatively impact these areas, or conversely that may contribute positively to their function;
- Establishing buffer zones around these areas to separate incompatible uses from the habitat areas.³³

Finally, counties and cities may also consider when designating these areas:

- Potential for restoring lost and impaired salmonid habitat;
- Potential for designating areas important for local and ecoregional biodiversity;
- and

³² WAC 365-190-130(2). A 2015 update of WDFW's Hydraulic Code Rules also identifies "saltwater habitats of special concern" ([WAC 220-660-320](#)).

³³ WAC 365-190-130(3)(a)

- Establishing or enhancing non-regulatory approaches in addition to regulatory methods to protect fish and wildlife habitat conservation areas.³⁴

Sources and Methods for Designation

While the designation of fish and wildlife habitat conservation areas is required, how to go about designation is within the local jurisdiction’s discretion. Jurisdictions have several sources of scientifically sound information to aid with this decision. Suggestions are outlined below.

Federal and State Endangered, Threatened and Sensitive Species

Counties and cities should identify and classify seasonal ranges and habitat elements where federal and state listed endangered, threatened and sensitive species have a primary association and which, if altered, may reduce the likelihood that the species will persist over the long term.³⁵ Federal and state resources for listed species include:

- The U.S. Fish and Wildlife Service (USFWS) provides links for federally listed endangered and threatened species by county:
 - Designated “critical habitat”, recovery plans, and other resources;³⁶
 - Information for Planning and Consultation (IPaC) tool provides site-specific management recommendations;³⁷ and
 - Information about federally listed plant species.³⁸
- The National Oceanic and Atmospheric Administration (NOAA) Fisheries provides links to:
 - Listed species (salmon, marine mammals, marine turtles);³⁹
 - Maps;⁴⁰ and
 - Salmon recovery plans.⁴¹
- WDFW provides links for Washington state listed endangered, threatened and sensitive species:
 - WDFW’s Species of Concern web page;⁴²

³⁴ WAC 365-190-130(3)(b)

³⁵ WAC 365-190-130(4)(a)

³⁶ <https://www.fws.gov/endangered/>

³⁷ <https://ecos.fws.gov/ipac/location/index>

³⁸ <https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed>

³⁹ http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html

⁴⁰ http://www.westcoast.fisheries.noaa.gov/maps_data/maps_and_gis_data.html

⁴¹ http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/index.html .

⁴² <http://wdfw.wa.gov/conservation/endangered/>

- Species' status reports;⁴³
 - Recovery plans;⁴⁴ and
 - Current information on Priority Habitats and Species (which includes listed species) on the Priority Habitat and Species (PHS) web page.⁴⁵
- The [Governor's Salmon Recovery Office and Recreation and Conservation Office](#) website provides links to recovery plans, monitoring efforts, policies, and the lead entities that coordinate salmon recovery locally.⁴⁶

Habitats and Species of Local Importance

Counties and cities should identify, classify and designate locally important habitats and species. Counties and cities should consult current information on priority habitats and species identified by the WDFW in the [Priority Habitat and Species \(PHS\) Program](#).⁴⁷ Priority habitat and species information includes endangered, threatened and sensitive species, as well as candidate species and other vulnerable and unique species and habitats. While the inclusion of species and habitats in the PHS Program reflects the priorities of the WDFW, counties and cities should consider them because they include the best available science. The WDFW can also help identify and map important habitat areas at various landscape scales. WDFW's PHS Program identifies "Priority Habitats" and "Priority Species" throughout the state, and provides county-by-county lists, maps, management recommendations and technical advice regarding Fish and Wildlife Habitat Conservation Areas.

The Washington State Department of Natural Resources' (WDNR) Natural Heritage Program can provide a list of high quality ecological communities and systems and rare plants.⁴⁸

Shellfish Areas

All public and private tidelands or bedlands suitable for shellfish harvest shall be classified as critical areas. Counties and cities should consider both commercial and recreational shellfish areas. The Washington State Department of Health classification of commercial and recreational shellfish growing areas may help determine the existing condition of these areas. Further consideration should be given to the vulnerability of these areas to contamination.

⁴³<https://wdfw.wa.gov/publications/search.php?Cat=Threatened%20and%20Endangered%20Species&SubCat=Status%20Reports>

⁴⁴<https://wdfw.wa.gov/publications/search.php?Cat=Threatened%20and%20Endangered%20Species&SubCat=Recovery%20Plans>.

⁴⁵ <https://wdfw.wa.gov/conservation/phs/>

⁴⁶ https://www.rco.wa.gov/salmon_recovery/gsro.shtml

⁴⁷ <https://wdfw.wa.gov/conservation/phs/>

⁴⁸ <https://www.dnr.wa.gov/natural-heritage-program>

Shellfish protection districts established pursuant to Chapter 90.72 RCW must be included in the classification of critical shellfish areas.⁴⁹

Shellfish maps are available from various state agencies as follows:

- Shellfish safety/water quality;⁵⁰
- Recreational shellfish beaches;⁵¹
- Commercial shellfish beds;⁵²
- Beach list by county;⁵³
- Shellfish Protection Districts (description, map);⁵⁴ and
- Razor clam beaches⁵⁵.

Kelp and Eelgrass Beds; Forage Fish Spawning Areas

Counties and cities must classify kelp and eelgrass beds identified by the WDNR and Ecology. Though not an inclusive inventory, Ecology publishes locations of kelp and eelgrass beds. Site-specific locations of kelp and eelgrass beds can be gathered using WDFW's survey methods found in Hydraulic Code Rules ([WAC 220-660-350](#)), updated in 2015.

Counties and cities must also classify forage fish spawning areas identified by WDFW. Using mapping protocols revised in 2014, WDFW maps sand lance, smelt, and herring spawning areas.⁵⁶ Site-specific locations of forage fish spawning areas can be gathered using 2011 WDFW's survey methods.⁵⁷

Naturally Occurring Ponds

Naturally occurring ponds under 20 acres and the associated submerged aquatic beds that provide fish or wildlife habitat must be designated as critical areas. These ponds typically provide habitat for amphibians that breed in still waters. Naturally occurring ponds do not include ponds deliberately designed and created from dry sites, such as canals, detention facilities, wastewater treatment facilities, farm ponds, temporary construction ponds (of less

⁴⁹ WAC 365-190-(4)(c)

⁵⁰ <https://fortress.wa.gov/doh/eh/maps/biotoxin/biotoxin.html>

⁵¹ <https://wdfw.wa.gov/fishing/shellfish/beaches/>

⁵² <https://fortress.wa.gov/doh/eh/maps/OSWPViewer/index.html>

⁵³ https://wdfw.wa.gov/fishing/shellfish/beaches/beach_names.php

⁵⁴ <https://www.doh.wa.gov/CommunityandEnvironment/Shellfish/GrowingAreaRestoration/ShellfishProtectionDistrictsLibrary>

⁵⁵ https://wdfw.wa.gov/fishing/shellfish/razorclams/graphics/map_beaches.jpg

⁵⁶ <http://wdfw.maps.arcgis.com/home/item.html?id=19b8f74e2d41470cbd80b1af8dedd6b3>

⁵⁷ https://wdfw.wa.gov/conservation/research/projects/marine_beach_spawning/training/protocol-field_bulk_sample_collection.pdf

than three years duration) and landscape amenities. However, naturally occurring ponds may include those artificial ponds intentionally created from dry areas in order to mitigate conversion of ponds, if permitted by a regulatory authority.⁵⁸

Waters of the State

Waters of the state are defined in RCW [90.48.020](#) and include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses in Washington. Inclusion of waters of the state recognizes the critical role water plays in ecosystem functions and values. When classifying waters of the state as fish and wildlife habitat conservation areas, broad, landscape level functions should be considered, including development densities, run-off from impervious areas, the effects of clearing and vegetation removal, and the interaction between surface and ground waters.

The following factors should be considered when classifying waters of the state as fish and wildlife habitat conservation areas:

- Species present that are endangered, threatened or sensitive, and other species of concern;
- Species present that are sensitive to habitat manipulation (e.g., Priority Habitats and Species program);
- Historic presence of species of local importance;
- Existing surrounding land uses that are incompatible with salmonid habitat;
- Condition and size of riparian ecosystems;
- Existing water rights; and
- The intermittent nature of some waters of the state.

Local governments should also consider the interaction between related critical areas such as critical aquifer recharge areas, frequently flooded areas, and wetlands. These designations can, and frequently do, overlap.

Stream Mapping and Stream Typing

There are currently two systems for mapping freshwater bodies in Washington. The National Hydrography Dataset (NHD) is the Washington state hydrography standard. Ecology is the curator for NHD-using national standards established by USGS.⁵⁹ This dataset is used for assigning reach “addresses” to streams and other waterbodies, which can be used to determine upstream/ downstream relationships. Because NHD is the national standard, these “addresses” can be shared easily among national, state, and local organizations. Local entities who want to

⁵⁸ WAC 365-190-130(4)(e)

⁵⁹ http://geo.wa.gov/datasets/b5a20ceaa6114e28b688d4236b417b2b_1

create high-resolution NHD (1:24,000 or 1:4,800 scale) should contact Ecology. Within the Skagit River Basin, Ecology has created a beta version of NHD that includes Water Types (e.g., Type S, Type F) for uses not governed by Forest Practices rules.⁶⁰

The second system for mapping waters in the state was created for forest practice activities and is maintained by WDNR’s Forest Practices Division. This hydrology layer, which is most accurate in forested areas, is available.⁶¹ Local governments that use WDNR water type maps for regulating land uses should do so with extreme care as these maps may not capture accurate stream types or locations (e.g., missing and mis-located streams) outside of forested areas. Local governments should field-verify stream presence/locations and, if the stream is shown as non-fish bearing (i.e., Type Np or Ns), this should also be field-verified. WDFW habitat biologists are able to help with stream typing (this is the preferred way to verify stream types); alternatively, a qualified biologist can apply WDNR’s current stream classification methodology.

WDNR’s water typing system has been under review by the Forest Practices Board for the past several years. In December 2006, the Forest Practices Board adopted an interim water typing system that transitioned from a mapping system that used numbers (i.e., Type 1 through Type 5) to the lettering system shown below. Although the Forest Practices Board has not officially adopted a permanent water typing rule (or accompanying protocols for determining stream types), the interim system is the preferred method. The interim water typing classification system is described in [WAC 222-16-030](#) and [031](#). Guidelines for determining fish use can be found in [Section 13 of the Forest Practices Board Manual](#) (dated February 2002).

As of the writing of this document, the Forest Practices Board is developing a permanent rule and Board Manual for field protocols to determine where the potential habitat break for fish is located. When these protocols are adopted they will be placed in [Section 23 of the Forest Practices Board Manual](#).

Interim Stream Typing Symbology	Old Stream Typing Symbology
Type “S” (for Shoreline)	Type 1
Type “F” (for Fish)	Type 2 and 3
Type “Np” (for Non-fish, perennial)	Type 4
Type “Ns” (for Non-fish, seasonal)	Type 5

For a copy of the complete Forest Practices Rules and the Board Manual Guidelines, visit the [DNR Forest Practices web site](#).⁶²

⁶⁰ NHD metadata at <https://www.arcgis.com/home/item.html?id=b5a20ceaa6114e28b688d4236b417b2b>

⁶¹ <http://data-wadnr.opendata.arcgis.com/datasets/wa-hydrography-watercourses>

⁶² <https://www.dnr.wa.gov/about/boards-and-councils/forest-practices-board/forest-practices-rules-and-board-manual-guidelines>

Lakes and Rivers Stocked with Fish

This category includes waterbodies where game fish are stocked under the auspices of a federal, state, or local government, or tribal program. Every year WDFW stocks lakes, ponds, rivers, and streams throughout the state with millions of trout, kokanee, and steelhead.

Resources include:

- Maps of WDFW-stocked lowland lakes;⁶³
- Maps of high lakes;⁶⁴
- The most recent county-by-county list of the more than 500 lakes, rivers, and streams across the state that WDFW stocks with trout and kokanee;⁶⁵
- Information about steelhead stocking;⁶⁶

Fifty-one tribal hatcheries and 10 federal hatcheries also produce fish that are planted in Washington lakes and rivers. Local governments should consider establishing land use protections to sustain the economic, ecological, and social benefits provided by fisheries enhancement efforts. Fish hatchery information includes:

- A list of USFWS fish hatcheries (with contact information);⁶⁷ and
- The Northwest Power and Conservation Council's map of artificial production programs operated by tribes and others.⁶⁸

Natural Area Preserves, Natural Resource Conservation Areas and State Wildlife Areas

Through its [Natural Heritage Program](#), WDNR defined, established, and manages 56 Natural Area Preserves, totaling some 38,300 acres, and 36 Natural Resource Conservation Areas, totaling some 118,700 acres.⁶⁹ These areas should be designated as critical areas. Resources include:

- A county-by-county list of Natural Area Preserves;⁷⁰ and

⁶³ <https://wdfw.wa.gov/fishing/washington/lowland.html>

⁶⁴ <https://wdfw.wa.gov/fishing/washington/highlakes/stocking.php>

⁶⁵ <https://wdfw.wa.gov/fishing/plants/statewide/>

⁶⁶ <https://wdfw.wa.gov/fishing/plants/steelhead/>

⁶⁷ <https://www.fws.gov/Fisheries/nfhs/facilities/washington.html>

⁶⁸ <https://www.nwcouncil.org/ext/maps/APPrograms/>

⁶⁹ <https://www.dnr.wa.gov/natural-heritage-program>

⁷⁰ <https://www.dnr.wa.gov/managed-lands/natural-areas/natural-area-preserves>

- Natural Resource Conservation Areas.⁷¹

WDFW owns nearly one million acres in 32 State Wildlife Areas. A county-by-county list of State Wildlife Areas is available.⁷² These areas should also be designated as critical areas.

Protecting Fish and Wildlife Habitat Conservation Areas

Protection of fish and wildlife habitat conservation areas does not need to prohibit all uses, protect all individuals, or be applied uniformly across the landscape. Protection must, however, use best available science and conserve the ecological functions and values necessary to sustain viable populations of species such that subpopulations are not created.⁷³ Protecting these areas may require considering ecosystem functions at a broader scale; cooperative and coordinated land use planning among counties and cities in a region can be critically important for conserving some fish and wildlife species.

Conserving fish and wildlife habitat conservation areas' ecological functions typically involves maintaining habitat connectivity, quality, and quantity. The specific characteristics that provide for highly functional habitat varies from species to species. Some species, for example, have evolved to prefer edges of forests while others rely on forest interiors; some species are very tolerant of people while others persist only when human disturbances are minimal. Local government efforts to protect Fish and Wildlife Habitat Conservation Areas should follow the standard mitigation sequence of first avoiding impacts, second minimizing unavoidable impact, and third providing compensatory mitigation for all unavoidable impacts.

Tools local government have at their disposal to protect fish and wildlife habitat conservation areas include regulatory tools (e.g., conditioning permits via critical area ordinances, maintaining low density zoning in biologically diverse areas) and non-regulatory tools (e.g., voluntary restoration, acquisition, or educational programs). To help local governments to protect fish and wildlife habitat conservation areas, WDFW's Priority Habitats and Species (PHS) program⁷⁴ offers science-based PHS management recommendations and technical assistance through WDFW's regional habitat biologists. PHS management recommendations identify actions local governments, landowners, and developers can take to maintain ecosystem functions within areas closely associated with priority species (e.g., seasonal ranges, breeding habitat, winter range, and movement corridors) as well as within priority habitats (e.g., areas with high relative population density or species richness).

The most common fish and wildlife habitat conservation areas found throughout the state are riparian ecosystems. Riparian areas have direct effects on anadromous fisheries as well as 85

⁷¹ <https://www.dnr.wa.gov/managed-lands/natural-areas/natural-resources-conservation-areas>

⁷² http://wdfw.wa.gov/lands/wildlife_areas/

⁷³ WAC 365-190-130(1)

⁷⁴ <https://wdfw.wa.gov/conservation/phs/>

percent of Washington’s terrestrial vertebrate species. WDFW soon will issue its updated Riparian Management Guidance for achieving no net loss of riparian ecosystem functions.⁷⁵

Local governments that permit activities in the uplands that may affect saltwater areas (e.g., clearing and grading) should consider protecting aquatic resources by imposing work window constraints consistent with those imposed by WDFW for hydraulic permit applications.⁷⁶

Special Consideration for Anadromous Fisheries

Maintaining riparian ecosystem connectivity and the quality and quantity of riparian vegetation are key to functioning salmonid habitat. Counties and cities may use information prepared by the U.S. Fish and Wildlife Service, NOAA Fisheries, the WDFW, the State Recreation and Conservation Office (RCO), and the Puget Sound Partnership to designate, protect, and restore salmonid habitat.⁷⁷ Counties and cities should consider recommendations found in salmon recovery plans. The [Governor’s Salmon Recovery Office and RCO](#) website provides links to the recovery plans, monitoring efforts, policies, and the lead entities that coordinate salmon recovery locally.⁷⁸

WDFW’s [Land Use Planning for Salmon, Steelhead and Trout](#)⁷⁹ provides guidance for counties and cities to protect and restore salmonid habitat. It is designed to help integrate local land use planning programs and state salmon recovery efforts. This planner’s guide to salmonid recovery is intended for local governments and includes information on state salmon recovery efforts, sources of best available science, and model policies and development regulations for implementing salmon recovery.

Growth Management Hearings Board Decisions

Pierce County was challenged before the Central Puget Sound Growth Management Hearings Board for removing the marine shorelines from critical areas. Pursuant to RCW 36.70A.480, the Board agreed with Pierce County that marine shorelines are not per se fish and wildlife habitat conservation areas [critical areas]. The Board then asked (1) whether Pierce County used best available science to protect critical fish and wildlife habitat conservation areas on its marine shorelines; (2) whether Pierce County’s regulations gave priority to anadromous fish; (3) whether Pierce County’s regulations protect the functions and values of marine shorelines as salmon habitat, and (4) whether a vegetative buffer is required.

⁷⁵ PLACEHOLDER FOR LINK TO RIPARIAN GUIDANCE

⁷⁶ [WAC 220-660-330](#). WDFW applies timing windows to reduce the risk of impacts to fish life at sensitive life stages.

⁷⁷ WAC 365-190-130(4)(i)

⁷⁸ https://www.rco.wa.gov/salmon_recovery/gfro.shtml

⁷⁹ <https://wdfw.wa.gov/publications/00033/>

The County's critical areas ordinance identified a number of critical fish and wildlife conservation areas on its marine shorelines. These include eelgrass beds, shellfish beds, surf smelt spawning areas and the like. However, the critical areas ordinance was drafted to designate and protect all Pierce County marine shorelines. When the County Council voted to remove the marine shorelines from critical areas, it did so (a) without ascertaining whether the remaining protected salt-water areas included all the areas important for protection and enhancement of anadromous fisheries and (b) without assessing whether the overlay of elements remaining in the critical areas ordinance [i.e. steep slopes, erosion areas, eelgrass beds, etc.] would protect the "values and functions" necessary for salmon habitat. The Board concluded that Pierce County failed to comply with RCW 36.70A.172(1) in failing to use best available science to designate and protect fish and wildlife habitat conservation areas, in failing to "protect the functions and values" of marine shorelines as critical salmon habitat, and in failing to "give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries."⁸⁰

The Eastern Washington Growth Management Hearings Board found that the nomination process for habitats and species of local importance is necessary for listing those habitats and species that become candidates in the future, not as the sole process to protect those already in danger. It is not the responsibility of the WDFW or any other state agency, as was suggested by Ferry County, to petition the County to adopt a habitat, species or both. The GMA specifically requires the County to protect fish and wildlife conservation areas, thus endangered, threatened and sensitive species and habitats and species of local importance.⁸¹

Polygon and point data are based on actual field surveys and observations of the species ... WDFW claimed if a habitat is mapped, then a species inhabits or has been known to inhabit that area ... The Board has held that failing to protect both point and polygon data violates the GMA. As to point and polygon validations in Section 9.04, the Board found that section was out of compliance with RCW's 36.70A.060 and 36.70A.172 for failure to protect endangered, threatened and sensitive species by requiring WDFW, a state agency without authority to enforce local critical areas ordinance provisions (or any Ferry County code provisions, even if they relate to fish and wildlife), to validate point observations and polygon observations, which would only then trigger protection measures.⁸²

In designating fish and wildlife habitat conservation areas, the Board stated the County must at least designate "areas with which endangered, threatened, or sensitive species have a primary association and the designation" must be based on best available science as required by 36.70A.172. The Eastern Board found that Stevens County had done an admirable job of requiring pre-set buffers or alternative buffers set on a case by case basis, and requiring a report from a qualified professional to set management recommendations, if a development is

⁸⁰ *Tahoma Audubon Society, et al v. Pierce County*, 05-3-0004c, FDO, July 12, 2005, at 37.

⁸¹ *CDFC/Robinson v. Ferry County*, 97-1-0018, Compliance Order (Feb. 13, 2009), at 15.

⁸² *Id.*, at 18.

within “a mapped critical habitat area” for endangered, threatened or sensitive species. But the County was found to fall short by defining “critical habitat” as “only those areas designated by a state or federal agency through a formal statutory or rule-making process.”⁸³

The Eastern Board held that, to protect endangered, threatened, or sensitive species and their habitat, such as the lynx, which knows no country, state or county boundary, there must be intergovernmental cooperation and coordination, as stated in [WAC 365-190-130(1)]⁸⁴. If Stevens County did not designate fish and wildlife conservation areas for certain listed species using best available science and all the information available from WDFW, but neighboring counties, such as Ferry County and Pend Oreille County did, then there would be a disconnect in protection for the listed species and extinction a real possibility. Simply put, the federal government can designate critical habitat for endangered, threatened or sensitive species, but under a separate rule-making process and, for the most part, only for federal lands. Therefore, the Board found that a U.S. Fish and Wildlife Service rule-making does not have an effect on most state or Stevens County lands.

The Eastern Board noted that the state does not have the legislative authority to designate critical habitat for endangered, threatened or sensitive species through a rule-making process, and the federal government’s rule-making for endangered, threatened or sensitive species habitat is separate from its listed species. Since critical areas are designated by counties and cities under the Growth Management Act, they are responsible to protect the endangered, threatened or sensitive species habitat.

In addressing bull trout critical habitat in Ferry County, the Eastern Washington Growth Management Hearings Board stated: “[T]he absence of federally-designated critical habitat is not a determinative fact for purposes of a county’s GMA designation of areas where endangered, threatened or sensitive species have a “primary association’.”⁸⁵

WAC 365-190-130(2) directs jurisdictions to consider and designate areas where endangered, threatened, and sensitive species have a primary association. The Western Washington Growth Management Hearings Board found that Island County’s prairies have such an association with the three referenced [ETS] plant species.⁸⁶ Citing WAC 365-190-130(2)(b)’s direction to consider habitats and species of local importance for classification and designation, the Board found the County had failed to protect critical areas by its decision to not designate Westside prairies, Oak woodlands and herbaceous balds as habitats of local importance notwithstanding, the record established these areas constitute rare or vulnerable ecological systems and habitat or habitat elements.⁸⁷

⁸³ *Futurewise v. Stevens County*, 05-1-0006, FDO, Jan. 13, 2006.

⁸⁴ Formerly WAC 365-190-080(5)

⁸⁵ *Concerned Friends of Ferry County v. Ferry County*, 97-1-0018cOrder Finding Continuing Noncompliance, January 23, 2013, p. 11.

⁸⁶ *Whidbey Environmental Action Network v. Island County*, 14-2-0009, Final Decision and Order, June 26, 2015, p. 34.

⁸⁷: *Id.*, at p. 37.

The Eastern Washington Growth Management Hearings Board held that a county is required to make a “reasoned analysis on the record, including best available science and other local factors” in determining whether or not a habitat or species should be designated as habitat or species of local importance. The Growth Management Act requires the record to include best available science in developing policies and development regulations to protect the functions and values of critical areas, which habitats and species of local importance are an important part. RCW 36.70A.172(1).

Case law has made it perfectly clear that legislative bodies, such as counties and cities, must substantially consider best available science to support their findings concerning the nominations of habitat of local importance and/or species of local importance. In addition, a local jurisdiction is not constrained to adopt only the science recognized by state or federal agencies, but a variation from formally identified BAS must be supported in the record by evidence that also meets the BAS standard (see WAC 365-195-905). Local governments must “analyze the scientific evidence and other factors in a reasoned process.” Legislative bodies must also be cautious about using their own science just to support their own agenda....⁸⁸

The Western Washington Growth Management Hearings Board found that a county has wide discretion in determining which plant species and/or habitats have sufficient local importance to warrant designation and protection as species of local importance.⁸⁹ The decision on whether or not to designate species or habitats of local importance lies with the County in accordance with WAC 365-190-130.⁹⁰ However, the Board also stated that it is unaware of any requirement in the GMA that mandates the establishment of a process for designating new habitats of local importance.⁹¹

Designating and Protecting Frequently Flooded Areas

Floodplains and other areas subject to flooding perform important hydrologic functions and may present a risk to persons and property. Classifications of frequently flooded areas should include, at a minimum, the 100-year floodplain designations of the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program (NFIP).⁹²

Restricting floodplain development can minimize adverse effects to human health and infrastructure. Counties and cities should consider the following when designating and classifying frequently flooded areas:

⁸⁸ *Loon Lake Property Owners Assoc., et al. v. Stevens County*, 03-1-0006c, 3rd Order on Compliance, (Dec. 21, 2005).

⁸⁹ *ICCGMC v. Island County*, 98-2-0023c, Compliance Order, 11-26-01.

⁹⁰ *Friends of the San Juans, et al. v. San Juan County*, 13-2-0012c: FDO (September 6, 2013), at 39.

⁹¹ *Id.*, at 42.

⁹² WAC 365-190-110(1)

- Effects of flooding on human health and safety and on public facilities and services;
- Available documentation including federal, state, and local laws, regulations, and programs, local studies and maps, and federal flood insurance programs, including the provisions for urban growth areas in RCW 36.70A.110;
- The future flow floodplain, defined as the channel of the stream and that portion of the adjoining floodplain that is necessary to contain and discharge the base flood flow at build out;
- The potential effects of tsunami, high tides with strong winds, sea level rise, and extreme weather events, including those potentially resulting from global climate change; and
- Greater surface runoff caused by increasing impervious surfaces.⁹³

Sources and Methods for Designation and Protection

In reviewing critical areas regulations for floodplains, each local government must consider the adequacy of the designation and protection of frequently flooded areas. In these reviews, new information such as maps or relevant science findings needs to be integrated. Ecology provides [Critical Areas Ordinance Guidance for Frequently Flooded Areas](#).⁹⁴

FEMA maps, called Flood Insurance Rate Maps (FIRM) and Floodway Maps, have been prepared for every flood-prone community in the state. They are the basic critical areas designation tools for frequently flooded areas. However, community officials should also use newer or more refined data wherever it is available. This includes data on channel migration, maps showing build-out conditions, riparian habitat areas, flood risk assessments in local hazard mitigation plans, etc. Where flood boundaries have been provided on the FEMA maps but flood elevation data has not been provided, the local floodplain administrator is required to obtain and use elevation data that is available from another authoritative source.⁹⁵ Any information that is used other than the FEMA information, however, cannot be used if it is less restrictive than the FEMA data. That is, the FEMA data must always be used as the minimum data required.

Official FIRMs are found at the [FEMA Map Service Center](#).⁹⁶ Since 2015, FEMA Flood Insurance Rate Maps (FIRMs) that have been adopted for coastal areas have included a degree of consideration for high tides and wind events. However, no FIRMs presently consider sea level rise.

⁹³ WAC 365-190-110(2)

⁹⁴ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Guidance-for-floodplains-Critical-Areas-Ordinanc>

⁹⁵ 44 CFR 60.3 and Chapter 86.16 RCW

⁹⁶ <https://msc.fema.gov/portal>

Ecology offers coastal data at the [Washington State Coastal Atlas](#) web site.⁹⁷ Additional resources related to tsunami inundation and evacuation can be found at the [WDNR Geology Portal](#).⁹⁸ For sea level rise, there is useful information on the [Washington Climate Impacts Group](#) site.⁹⁹

Washington communities can also get credit through the Community Rating System (CRS) program for floodplain designation, planning, and protective regulations. The CRS program can reduce the flood insurance rates for all NFIP policyholders in the jurisdiction. To learn more about CRS, and learn if your community participates, please contact your local floodplain administrator or the Department of Ecology.¹⁰⁰

Floodplains by Design

Floodplains by Design (FbD) is a partnership of state and private organizations focused on coordinating investment in and strengthening the integrated management of floodplain areas to simultaneously support flood risk reduction, ecological restoration, agriculture and recreational opportunities. The Department of Ecology administers the Floodplains by Design grant program. Ecology issues a request for Floodplains by Design project proposals approximately 18 months prior to the start of each state budget biennium. There is a subsequent application process. After review by Ecology, a ranked project funding list is presented for inclusion in the governor's proposed capital budget for the next biennium.¹⁰¹

Special Consideration for Anadromous Fisheries

Historic losses to salmon habitat have occurred as a result of development encroaching into floodplains. Floodplains are also ideal locations for salmon habitat restoration. While floodplains are potentially hazardous areas for development due to flooding and erosion, fish and wildlife depend on the habitat created when a river is allowed to migrate and overflow its banks. Natural floodplains, channel migration zones, and associated riparian wetlands are critical components of a properly functioning aquatic ecosystem.

Increasingly, there is recognition of the importance of floodplains as vital habitat to support salmon and other species. Relevant information may be found in updates to salmon recovery plans, channel migration zone mapping or other sources. These sources should be considered in development of revised critical areas ordinances provisions which better protect riparian

⁹⁷ <https://fortress.wa.gov/ecy/coastalatlas/>

⁹⁸ <https://www.dnr.wa.gov/geologyportal>

⁹⁹ <https://cig.uw.edu/resources/>

¹⁰⁰ To learn more about the CRS program, please visit crsresources.org.

¹⁰¹ More information about Floodplains by Design is at <http://www.ecy.wa.gov/programs/sea/floods/index.html>.

habitat. These protections may be addressed under the frequently flooded Area provisions or within the fish and wildlife habitat conservation area provisions of a critical areas ordinance.

For more information on protecting frequently flooded areas for salmon, see the WDFW's [Land Use Planning for Salmon, Steelhead and Trout: A land use planner's guide to salmonid habitat protection and recovery](#).¹⁰²

FEMA Guidance on National Marine Fisheries Service Puget Sound Biological Opinion

The National Marine Fisheries Service (NMFS) issued a [Biological Opinion](#) (BiOp) under the Endangered Species Act (ESA) on the National Flood Insurance Program (NFIP) in Puget Sound.¹⁰³ The BiOp was provided following consultation with FEMA regarding effects of NFIP on listed species within the Puget Sound Region – Chinook Salmon, Puget Sound steelhead, Hood Canal summer-run chum salmon, and Southern Resident killer whales. FEMA has the ultimate authority for determining the adequacy of BiOp compliance. FEMA has provided three options for local government compliance with the ESA:

- **Door #1: Model Ordinance approach** – This approach combines standard NFIP floodplain requirements with Biological Opinion habitat protection requirements. FEMA guidance on Floodplain Management and the Endangered Species Act: A Model Ordinance (November 2013) for developing a Door 1 program is posted on FEMA's [web site](#) Door 1 model ordinances must be approved by FEMA.¹⁰⁴
- **Door #2: Community Checklist/Programmatic approach** – This approach uses existing state requirements, such as GMA, SMA, drainage, and grading requirements adopted at the local level to provide flexibility, while meeting the minimum requirements for salmon in the BiOp. A critical areas ordinance that addresses the habitat concerns identified in the BiOp can support a Door 2 programmatic response. A community that uses Door 2 can implement the Puget Sound Biological Opinion compliance through its own codes and procedures. A Checklist for Programmatic Compliance (November 2013) is also on the [FEMA web site](#).¹⁰⁵ Door 2 programs must be approved by FEMA.
- **Door #3: Permit by permit demonstration of compliance/Individual approach** - In 2013, FEMA provided updated guidance on how to prepare a habitat assessment,

¹⁰² <https://wdfw.wa.gov/publications/00033/>

¹⁰³ https://www.fema.gov/media-library-data/20130726-1900-25045-9907/nfip_biological_opinion_puget_sound.pdf

¹⁰⁴ https://www.fema.gov/media-library-data/1383597893424-4747f702310a2bbc7e04ea83d66f73f5/NFIP_ESA_Model_Ordinance.pdf

¹⁰⁵ https://www.fema.gov/media-library-data/1383597499829-c4d2a589c8ae1463357c1cac8d043ce7/NFIP_ESA_Biological_Opinion_Checklist.pdf

[Floodplain Habitat Assessment and Mitigation: Regional Guidance for the Puget Sound Basin](#).¹⁰⁶ Implementing the FEMA guidance will assist local governments in addressing compliance with the Endangered Species Act Biological Opinion (BiOp). The critical areas ordinances update provides an opportunity for local governments to include or reference procedures for BiOp implementation in their floodplain management regulations or combined floodplain management regulations/critical areas ordinances. This will help ensure that all staff and other parties are aware of these procedures required to comply with the BiOp.

Communities that are considering adopting a Door #1 ordinance or a Door #2 program should contact FEMA and Ecology. FEMA Region 10 contacts are posted [here](#).¹⁰⁷ Ecology contacts can be found [here](#) by typing “floodplain management” in the directory.¹⁰⁸

Growth Management Hearings Board Decisions

The Western Washington Growth Management Hearings Board views the GMA as effectively establishing two categories of critical areas – those areas whose functions and values are protected for the beneficial services they provide (i.e. wetlands, fish and wildlife habitat conservation areas, critical aquifer recharge areas) and those areas for which protection is needed due to the threat these areas pose to persons and property (i.e. frequently Flooded areas, geologically hazardous areas).¹⁰⁹

The Western Board found the issue of allowing new residential construction in frequently flooded areas is a question of protection of critical areas. Pursuant to WAC 365-195-[830(3)], “protection” of critical areas also means “to safeguard the public from hazards to health and safety.” Whether to allow new residential construction in a frequently flooded area is a matter of hazards to public health and safety. Therefore, the adoption of regulations allowing such residential construction must include best available science.¹¹⁰

Designating and Protecting Geologically Hazardous Areas

¹⁰⁶ https://www.fema.gov/media-library-data/1383598118060-e34756afe271d52a0498b3a00105c87b/Puget_Sound_R10_Habitat_Assess_guide.pdf

¹⁰⁷ <https://www.fema.gov/region-x-contact-information-ak-id-or-wa>

¹⁰⁸ <https://fortress.wa.gov/ecy/staffsubjectsearch/interExpertiseLookupFrame.html>

¹⁰⁹ *OSF/CPCA v. Jefferson County*, 08-2-0029c, FDO, Nov. 19, 2008, p. 27. See FDO at 31-39 for general discussion on channel migration zones, including designation, risk assessment, and development standards.

¹¹⁰ *ADR/Diehl v. Mason County*, 07-2-0010, FDO, January 16, 2008, p. 19.

Geologically hazardous areas include areas susceptible to erosion, sliding, earthquake, or other geological events. They pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development is sited in areas of significant hazard.¹¹¹

Some geological hazards can be reduced or mitigated by engineering, design, or modified construction or mining practices so that risks to public health and safety are minimized. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas must be avoided. The distinction between avoidance and compensatory mitigation should be considered by counties and cities that do not currently classify geological hazards, as they develop their classification scheme.¹¹²

The Minimum Guidelines as updated in 2010 define geologically hazardous areas that should be designated as critical areas as follows:

- "Geologically hazardous areas" are areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to siting commercial, residential, or industrial development consistent with public health or safety concerns.¹¹³
- "Erosion hazard areas" are those areas containing soils which, according to the United States Department of Agriculture Natural Resources Conservation Service (NRCS) Soil Survey Program, may experience significant erosion. Erosion hazard areas also include coastal erosion-prone areas and channel migration zones.¹¹⁴ Erosion hazard areas include areas likely to become unstable, such as bluffs, steep slopes, and areas with unconsolidated soils. Erosion hazard areas may also include coastal erosion areas. This information can be found in the [Washington State Coastal Atlas](#) available from the Ecology.¹¹⁵ Counties and cities may consult with the NRCS for data to help identify erosion hazard areas.¹¹⁶
- "Landslide hazard areas" are areas at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors.¹¹⁷ They include any areas susceptible to landslide because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other factors (listed in the WAC).¹¹⁸
- "Seismic hazard areas" are areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement or subsidence, soil

¹¹¹ WAC 365-190-120(1)

¹¹² WAC 365-190-120(2)

¹¹³ WAC 365-190-030(9)

¹¹⁴ WAC 365-190-030(5)

¹¹⁵ <https://fortress.wa.gov/ecy/coastalatlus/>

¹¹⁶ WAC 365-190-120(5)

¹¹⁷ WAC 365-190-030(10)

¹¹⁸ WAC 365-190-120(6)

liquefaction, surface faulting, debris flows, lahars, or tsunamis.¹¹⁹ Settlement and soil liquefaction conditions occur in areas underlain by cohesionless soils of low density, typically in association with a shallow groundwater table. One indicator of potential for future earthquake damage is a record of earthquake damage in the past. Ground shaking is the primary cause of earthquake damage in Washington, and ground settlement may occur with shaking.¹²⁰

- "Volcanic hazard areas" must include areas subject to pyroclastic flows, lava flows, debris avalanche, or inundation by debris flows, lahars, mudflows, or related flooding resulting from volcanic activity.¹²¹
- "Mine hazard areas" are those areas underlain by, adjacent to, or affected by mine workings such as adits, gangways, tunnels, drifts, or air shafts. Factors that should be considered include: proximity to development, depth from ground surface to the mine working, and geologic material.¹²²

Geologically hazardous areas also have an important function in maintaining habitat integrity. Mass wasting events, such as landslides and debris flows, contribute needed sediment and wood for building complex instream habitats, estuarine marshes, and beaches important for fisheries, wildlife, and recreation. At the same time, mass wasting events can harm habitat and lead to the need for stream restoration.

Sources for Designation

The Washington State Department of Natural Resources' [Geologic Hazards and the Environment web site](#) provides information on earthquakes and faults, landslides, volcanoes and lahars, tsunamis, and geologic hazard maps.¹²³ The Department also maintains a [Geologic Information Portal](#) that contains interactive earth science mapping, data, and related information on several topics. The Portal provides a user guide in written and video formats.¹²⁴

Special Consideration for Anadromous Fisheries

Geologically hazardous areas may affect salmonids in a variety of ways. Steep slopes along shorelines can include feeder bluffs that benefit salmon habitat. However, erosion and mass

¹¹⁹ WAC 365-190-030(18) and 190-120(7)

¹²⁰ WAC 365-190-120(7)

¹²¹ WAC 365-190-030(21) and 190-120(8)(a)

¹²² WAC 365-190-120(8)(b)

¹²³ <https://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards-and-environment>

¹²⁴ <https://www.dnr.wa.gov/geologyportal>

wasting slide events can block streams or overload them with sediment in the short term. Seismic events can cause built objects to fall into streams, including pollutants such as chemicals and spilled fuels.

WDFW recommends local government give special protection to landslide hazard areas that can damage rivers and streams during mass wasting events. Riparian buffers help retain vegetation and control drainage on steep slopes. Protecting marine bluffs allows natural functions of beach nourishment and avoids elevated levels of suspended sediments and turbidity.¹²⁵

Growth Management Hearings Board Decisions

The Western Washington Growth Management Hearings Board concluded that Jefferson County's designation of channel migration zones as geologically hazardous areas was based, in part, on an analysis of historical data in combination with present day scientific methodologies. The future potential or susceptibility of damage creates the risk for which critical area designation as a geologically hazardous area was needed.¹²⁶

The Western Board disagreed with the petitioner's contention that the functions and values of a channel migration zone do not presently exist and therefore the GMA does not authorize the designation. To support this statement would be contrary to the very functions and values underlying a [geologically hazardous area] - to protect against future loss of life and/or property due to the geological event being addressed. In other words, the functions and values sought to be protected by [geologically hazardous areas] are the protection of life and property and those functions and values exist today.¹²⁷

The Central Puget Sound Growth Management Hearings Board found there is no GMA directive that prohibits development in a lahar or liquefaction zone because of geological risks. While hazard areas are defined as areas that are not suited to development consistent with public health and safety, the GMA definition by itself did not impose an independent duty upon Pierce County to protect life and property by prohibiting development.... The Board noted in the case of flood risks, the Legislature has defined the 100-year floodplain as mapped by FEMA as setting the bounds for more intensive development. The Board found no such bounds have been legislated into the GMA for other geological hazards.¹²⁸

¹²⁵ WDFW [Land Use Planning for Salmon, Steelhead and Trout](https://wdfw.wa.gov/publications/pub.php?id=00033), page 75.

(<https://wdfw.wa.gov/publications/pub.php?id=00033>)

¹²⁶ *OSF/CPCA v. Jefferson County*, 08-2-0029c, FDO, Nov. 19, 2008, p. 28. [Note: The Board's decision was appealed to the Court of Appeals on different issues than discussed here. The Court upheld the Board's decision in *Olympic Stewardship Found. v. Western Washington Growth Management Hearings Board*, 166 Wn. App. 172 (2012), review denied, 174 Wn.2d 1007 (2012).]

¹²⁷ *Id.*, at 29. See the FDO at pp. 31-39 for a general discussion on channel migration zones as a type of geologically hazardous area, including designation, risk assessment, and development standards.

¹²⁸ *Friends of Pierce County, et al. v Pierce County*, 12-3-0002c, FDO July 9, 2012, pg. 98, 103.

The Central Board found that the City of Seattle had designated areas at risk of more remote geologic hazards, as set forth in the Board’s final decision order in accordance with Commerce’s guidelines. The City adopted various state and federal maps to designate these geologically hazardous areas, and enacted a procedure, including public participation, allowing for the update of these maps by director’s rule. The Board found these actions in compliance with the Act.¹²⁹

The Central Board found a jurisdiction’s duty and obligation to protect the public from potential injury or damage that may occur if development is permitted in geologically hazardous areas is not rooted in challenged GMA critical area provisions. Rather, providing for the life safety of occupants and the control of damage to structures and buildings is within the province of building codes, Chapter 19.27 RCW.¹³⁰

The Central Board went on to say that there is no disagreement that construction of buildings and structures near a seismic hazard area is governed by the 2003 International Building Code, as adopted by the State Building Code (IBC), and applicable to Snohomish County. However, the County had identified a “regulatory gap” that is characterized as follows: The IBC’s seismic provisions apply only to faults that have been verified and mapped by the USGS. The newly discovered faults and inferred faults have not yet been mapped by USGS. Therefore, the IBC provisions were not directly applicable. Consequently, to protect the public and property, the County had taken the action of adopting the seismic ordinance to fill this gap. Petitioners didn’t dispute the gap, but rather contended that the regulations did not go far enough. The Board concluded that the County’s adoption of the seismic regulations was a responsible and reasonable action in face of the regulatory gap identified.¹³¹

The Board found and concluded that there is no discrepancy between Snohomish County’s definition of “seismic hazard areas” and the GMA’s definition of “geologically hazardous areas.” While the GMA definition imposes no independent duty upon the County to protect life safety, the Board noted that the County’s definition falls within the broader GMA definition and is more protective than that included in the IBC, since it includes protections for “inferred fault” areas.¹³²

Designating and Protecting Critical Aquifer Recharge Areas

¹²⁹ *Seattle Audubon Society, et al v. City of Seattle*, 06-3-0024, Order Finding Compliance, May 29, 2007, p. 4.

¹³⁰ *Sno-King Environmental Alliance, et al v. Snohomish County*, 06-3-0005, FDO, July 24, 2006, p. 15.

¹³¹ *Id.*, at 15-16.

¹³² *Id.*, at 16.

Potable water is an essential life sustaining element for humans and many other species. Much of Washington's drinking water comes from groundwater sources. Once groundwater is contaminated it is difficult, costly, and sometimes impossible to clean up. Preventing contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people and ecosystems.¹³³

The Minimum Guidelines define "critical aquifer recharge areas", or CARA, as those with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge.¹³⁴

The quality and quantity of groundwater in an aquifer is inextricably linked to its recharge area. Where aquifers and their recharge areas have been studied, affected counties and cities should use this information as the basis for classifying and designating these areas. Where no specific studies have been done, counties and cities may use existing soil and surficial geologic information to determine where recharge areas exist. Wellhead protection areas defined by drinking water purveyors can provide information about recharge area. The Department of Health maintains a map of these areas.¹³⁵ To determine the threat to groundwater quality, existing land use activities and their potential to lead to contamination should be evaluated.¹³⁶

The risk of ground water contamination depends on two main sets of conditions. One set of conditions relates to the ground itself and how easy it is for water to pass through to ground water. If soils and the underlying ground are very permeable and the ground water table is shallow, then the hydrogeologic conditions are susceptible to contamination. In addition, a source of recharge, like rain or irrigation, must be present before contaminants would be carried down to the water table. This is what is meant by hydrogeologic susceptibility.

The other set of conditions relates to how likely it is for potential contaminants to reach ground water. The amount of potential contaminant material, chemical composition, and how the material is handled all contribute to how easily potential contaminants may reach ground water. This is commonly known as contamination loading potential or source loading. To determine the threat to ground water quality, existing land use activities and their potential to lead to contamination should be evaluated.

Hydrogeologic susceptibility provides the basis for classifying critical aquifer recharge areas in terms of relative risk of contamination. Evaluation of potential contaminant loading provides information for policy, planning, management, and regulation of land uses that pose a risk to highly susceptible areas so that contamination can be prevented.

¹³³ WAC 365-190-100(1)

¹³⁴ WAC 365-190-030(3)

¹³⁵ <https://fortress.wa.gov/doh/eh/dw/swap/maps/>.

¹³⁶ WAC 365-190-100(2)

Counties and cities must classify recharge areas for aquifers according to the aquifer vulnerability. Vulnerability is the combined effect of hydrogeological susceptibility to contamination and the contamination loading potential. High vulnerability is indicated by land uses that contribute directly or indirectly to contamination that may degrade groundwater, and hydrogeologic conditions that facilitate degradation. Low vulnerability is indicated by land uses that do not contribute contaminants that will degrade groundwater, and by hydrogeologic conditions that do not facilitate degradation. Hydrological conditions may include those induced by limited recharge of an aquifer. Reduced aquifer recharge from effective impervious surfaces may result in higher concentrations of contaminants than would otherwise occur.¹³⁷

Important Considerations for Designating Critical Aquifer Recharge Areas

Characterize Hydrogeologic Susceptibility

The following parameters are found by using techniques hydrogeologists use. Depth to ground water is a main factor used in contamination risk assessment as far as critical aquifer recharge area analysis is concerned. The other factors are helpful in understanding the hydrogeologic system. These parameters help with understanding where ground water is, where it comes from, where it moves to, and how much there is.

To characterize hydrogeologic susceptibility of the recharge area to contamination, counties and cities may consider the following physical characteristics:

- Depth to groundwater;
- Aquifer properties such as hydraulic conductivity, gradients, and size;
- Soil (texture, permeability, and contaminant attenuation properties);
- Characteristics of the vadose zone including permeability and attenuation properties; and
- Other relevant factors.¹³⁸

Evaluate Potential Contaminant Loading Risk Factors

The following may be considered to evaluate vulnerability based on the contaminant loading potential:

- General land use;
- Waste disposal sites;
- Agriculture activities;

¹³⁷ WAC 365-190-100(3)

¹³⁸ WAC 365-190-100(3)(a)

- Water quality test results;
- Proximity to marine shorelines; and
- Other information about the potential for contamination.

Classification Strategy

A classification strategy for aquifer recharge areas should be to maintain the quality, and if needed, the quantity of the groundwater, with particular attention to recharge areas of high susceptibility. In recharge areas that are highly vulnerable, studies should be initiated to determine if groundwater contamination has occurred. Classification of these areas should include consideration of the degree to which the aquifer is used as a potable water source, feasibility of protective measures to preclude further degradation, availability of treatment measures to maintain potability, and availability of alternative potable water sources.¹³⁹

Examples of areas with a critical recharging effect on aquifers used for potable water may include:

- Recharge areas for sole source aquifers designated pursuant to the federal Safe Drinking Water Act;
- Areas established for special protection pursuant to a groundwater management program, chapters [90.44](#), [90.48](#), and [90.54](#) RCW, and chapters [173-100](#) and [173-200](#) WAC;
- Areas designated for wellhead protection pursuant to the federal Safe Drinking Water Act;
- Areas near marine waters where aquifers may be subject to saltwater intrusion; and
- Other areas meeting the definition of "areas with a critical recharging effect on aquifers used for potable water" in these guidelines.¹⁴⁰ Even if an area is not designated in the above list (sole source aquifer, well head protection area, etc.), the physical characteristics such as depth to water or permeability should be used to designate critical aquifer recharge areas.

Tools to Help Evaluate, Classify, and Designate Critical Aquifer Recharge Areas

Here is a partial list of helpful information sources and tools for critical aquifer recharge area analysis:

- Professional expertise,
- Well logs,
- Soil surveys and maps,
- USGS topographic maps,
- Geologic studies and maps,
- Hydrogeologic studies and maps,

¹³⁹ WAC 365-190-100(4)(a)

¹⁴⁰ WAC 365-190-100(4)(b)

- Site reports – permitted sites, cleanup sites, civil engineering sites,
- Water level measurement,
- Water quality sampling,
- Models,
- Contaminant inventories, and
- Well head protection/Source water protection.

In some cases, local water purveyors have already performed significant portions of the foundational work necessary to enable a local government to designate and direct aquifer recharge protection¹⁴¹. A local government needn't "reinvent the wheel" in performing its critical aquifer recharge area analysis. It can use studies, maps, and other information the water purveyor provides. In all cases, water purveyors have data about the aquifers they use for their supplies, which can help delineate specific critical aquifer recharge areas and their susceptibility. At the same time, local governments should regard this as valuable resource information only, keeping in mind that relevant case law (see below) contradicts merely adopting a protective area identified by a water purveyor without a more encompassing analysis.

This information-sharing is often easier with a municipally owned water system, as staff-to-staff consultation can occur internally. With a separately operated system such as a special purpose district, the jurisdiction should engage the purveyor in stakeholder communications when looking at critical aquifer recharge area regulations. This is intended to be a back-and-forth communication. As part of their water system planning responsibilities, public water purveyors must:

- Ask each local government with jurisdiction over the service area (recognizing that it may overlap) to provide a consistency review on its water system plan. This takes the form of 60-day notice similar to GMA updates/amendments. If the local government requests it, an additional 30 days' review time can be provided.
- Include a consistency review with supporting documentation describing how it has considered consistency with local plans and regulations.¹⁴²

Growth Management Hearings Board Decisions Regarding Designation

¹⁴¹ See, generally, Chapter 246-290 WAC for water system planning requirements, including wellhead protection plans. Source documentation is set forth in WAC 246-290-130, source protection is addressed in WAC 246-290-135, and watershed control is included in WAC 246-290-668. Source control areas, watershed control programs, and wellhead times of travel are particularly related to emplacing meaningful land-use regulations that protect source water, particularly constraints on certain uses that could pollute.

¹⁴² WAC 246-290-108

WAC 365-190-040(5)(b) states that in circumstances where critical areas cannot be readily identified, these areas should be designated by performance standards or definitions. WAC 365-190-040(5)(c) provides that designation could be satisfied by the adoption of a policy statement. The Eastern Washington Growth Management Hearings Board found that critical aquifer recharge areas expressly fall within this realm because, unlike wetlands or streams that can be visually delineated, the underground nature of an aquifer provides for a more challenging determination as to their location and boundaries.¹⁴³

The Eastern Board found that Walla Walla County relied exclusively upon pre-existing “wellhead protection areas” as satisfying the GMA requirement to designate critical aquifer recharge areas. The Board found that this approach is not supported by the science. The scientific information did not indicate that using wellhead protection areas alone is sufficient to protect the large gravel aquifer. Individual wellhead protection areas may protect some wells that constitute regulated public water systems, but there was no evidence in the record that this approach protects the large number of unregulated individual or exempt wells, nor was there any evidence that this approach is sufficient to protect the larger gravel aquifer which underlies a land area of about 190 square miles.¹⁴⁴

The WAC 365-190-[100(2)] guidelines state that to determine the location of aquifer recharge areas, counties may use existing studies or may use existing soil and surficial geologic information. The Eastern Board found the record did not show that Walla Walla County made any such determinations as to the gravel aquifer recharge areas. In the absence of basic locational information on specific recharge areas, the County could not effectively determine which areas are “critical” to preventing adverse impacts to the aquifer. Moreover, the record didn’t show a consideration of the WAC guidelines that prescribe (1) an evaluation of the threat of ground water contamination from existing land use activities¹⁴⁵, and (2) the designation of aquifer specific recharge areas based upon vulnerability of the aquifer to contamination.¹⁴⁶

The GMA does not necessarily require designation of the entire 190 square mile aquifer. Rather, the GMA requires designation and protection of “areas with a critical recharging effect on aquifers used for potable water.” The Board concluded that the extent of these designated critical recharge areas, as distinct from the underlying aquifer itself, is determined through a substantive consideration of best available science, which has not yet occurred in Walla Walla County.¹⁴⁷

WAC 365-190-080(4) states that counties and cities should designate critical areas by using maps and performance standards, and counties and cities should clearly state that maps

¹⁴³ *Hazen, et al v. Yakima County*, 08-1-0008c (April 5, 2010), FDO at 22-23..

¹⁴⁴ *Citizens for Good Governance v. Walla Walla County*, 09-1-0013 (May 3, 2010) Final Decision and Order at 6-7.

¹⁴⁵ WAC 365-190-100(2)

¹⁴⁶ *Citizens for Good Governance v. Walla Walla County*, 09-1-0013 (May 3, 2010) Final Decision and Order at 7-8, quoting WAC 365-190-100(3).

¹⁴⁷ *Id.*, at 10.

showing known critical areas are only for information or illustrative purposes. The Eastern Board found that, during its compliance efforts, Yakima County's CARA map, which was based on older, superseded science, was not reviewed or revised to reflect updated best available science. Without a mapping update to include best available science, the pre-existing CARA designation map did not comply with the GMA.¹⁴⁸

Other Ground Water Protection Programs

Critical aquifer recharge area planning and the associated ordinances may take into consideration existing ground water protection programs such as:

- **Sole source aquifer recharge areas** designated pursuant to the federal Safe Drinking Water Act.
- **Ground water management areas** established for special protection pursuant to a ground water management program, Chapters 90.44, 90.48, and 90.54 RCW, and Chapters 173-100 and 173-200 WAC.
- **Source water/well head protection areas** designated pursuant to the federal Safe Drinking Water Act and state requirements.

Salt Water Intrusion in Coastal Fresh Water Aquifers

Salt water intrusion, or encroachment, is defined as the migration of salt water into fresh water aquifers under the influence of ground water development.¹⁴⁹ Salt water intrusion becomes a problem in coastal areas where fresh water aquifers are hydraulically connected with seawater. When large amounts of fresh water are withdrawn from these aquifers, hydraulic gradients encourage the flow of seawater toward the pumped well or wells. Whether or how fast this may occur depends on several factors, including the nature of the aquifer, the amount of precipitation recharging the aquifer, and the amount of ground water used. Seawater intrusion can and has occurred in various coastal and island communities in Washington state. Seawater intrusion into potable water aquifers could affect any of at least 13 counties in Puget Sound and the Washington coast.

As popular shoreline areas are increasingly developed, the limits to relying on ground water for potable water supply may be reached. Saltwater intrusion can be an intractable problem to solve once it has occurred. A commonly proposed solution in some shoreline areas is to provide a public water supply where salt water intrusion is suspected. In the absence of a reliable public water supply, setting reasonable limits to shoreline development may be needed. If the jurisdiction has designated the area as a critical aquifer recharge area, then delineation of the

¹⁴⁸ *Hazen, et al. v. Yakima County*, Coordinated Cases 08-1-0008c and 09-1-0014, Coordinated Compliance Order/Issuance of Stay (April 27, 2011) at 10.

¹⁴⁹ See Freeze, S.F. and J.A. Cherry, *Groundwater*, Prentice Hall, Inc. 1979.

boundaries based on locally developed geologic and hydrological information will be a useful tool in developing strategies and determining future land use designations and densities.

It should be understood that providing a public water supply may not be a complete planning solution. Other development impacts, such as wastewater disposal, vegetation removal, and stormwater runoff also can degrade the shoreline environment and potentially can threaten the potable water aquifer serving existing residences. Thus, while this problem primarily involves potential impacts of ongoing population growth on ground water supply limits, it can also be just one part of a planning problem that requires addressing fundamental planning issues, such as appropriate rural shoreline population density, rural area service delivery, and critical areas protection.

How can it be controlled? The first step in correcting problems with salt water intrusion is to evaluate the size and extent of the problem. This is commonly accomplished by the installation of monitoring wells, used to determine the boundaries of the salt/fresh water interface and the rate at which salinity levels increase. Monitoring data and other information on the hydrologic and geologic properties often is incorporated into problem analysis in order to predict future conditions and to evaluate remediation alternatives.

Possible approaches for local governments to consider include adopting regulations that control the development of new water wells based on analyses of existing nearby water well chemistry, known aquifer sensitivity, or water supply limits. Such options to consider include:

- Prohibit new wells,
- Require water quality and quantity monitoring in areas suspected of high salinity,
- Reduce pumping (metering withdrawal will be a useful tool to monitor results),
- Relocate wells,
- Directly recharge aquifer (primarily surficial aquifers),
- Recharge fresh water into wells paralleling the coast, creating a hydrodynamic barrier,
- Extract seawater before it reaches wells,
- Establish seasonal or periodic water use restrictions, or
- Prepare scientific hydrogeologic reports to support new well development.

Wellhead protection areas are a type of critical aquifer recharge area¹⁵⁰ for which separate guidance exists. In addition, Ecology has produced its own guidance specific to critical aquifer recharge areas.¹⁵¹

Growth Management Hearings Board Decisions

¹⁵⁰ <https://www.doh.wa.gov/Portals/1/Documents/Pubs/331-018.pdf>. Health expects to begin updating this document soon.

¹⁵¹ <https://fortress.wa.gov/ecy/publications/documents/0510028.pdf>. Ecology expects to begin updating this document soon.

The Western Washington Growth Management Hearings Board was not persuaded by Jefferson County's argument that it has no authority to impose some form of water conservation measures, limiting the number of new wells allowed, or other measures to reduce the withdrawal of groundwater from individual wells if that withdrawal would disrupt the seawater/freshwater balance and lead to greater seawater intrusion. The exemption of RCW 90.44.050 does not limit a local jurisdiction from complying with its mandate for protection of groundwater quality and quantity under the GMA.¹⁵²

In a subsequent Jefferson County decision¹⁵³, the Western Board found that a county that has considered the best available science and adopted less stringent protection standards that balance the need for protection of potable water supplies against the chilling effect of regulation against development has complied with the GMA only if the county also adopts a monitoring strategy that includes stricter development regulations that will be implemented at once if the less stringent protection standards prove to be inadequate to protect against seawater intrusion.

The Board also found:

- Both the Growth Management Act and Jefferson County's own comprehensive plan require a county to protect not only those places where freshwater enters the ground, but also the aquifers they feed. The Board held the County must classify and designate seawater intrusion areas as critical areas, including best available science in a substantive way.
- Although the County claimed that the data in the record were not adequate to designate vulnerable seawater intrusion areas, that did not nullify the County's obligation to take action to designate and protect CARAs including aquifers used for potable water.
- A county's decision to use a different approach than previously adopted does not necessarily make that choice non-GMA compliant. However, the new approach must comply with the Act. The county's approach of failing to designate any vulnerable seawater intrusion areas as critical areas does not comply with the Act.
- It makes great sense for the intergovernmental planning group to study water issues on a watershed basis. However, that group has no authority to take binding action on this issue. The county cannot abdicate its GMA responsibility for seawater intrusion designation to the planning group.

The Western Board also addressed expansion by San Juan County of an urban growth area (UGA) into a critical aquifer recharge area and found, in light of the limitations of its ground water model and the data assembled to date, the studies done did not conclusively show that the increased densities of the UGA will not result in saltwater intrusion into the water supply. The Board held that the adaptive management program recommended by the advisory group is a necessary part of the County's protection strategy. Until the County completed these missing

¹⁵² *Olympic Environmental Council v. Jefferson County*, 01-2-0015 (FDO, 1-10-02).

¹⁵³ *Olympic Environmental Council, et al. v. Jefferson County*, 01-2-0015 (Compliance Order, 12-4-02).

pieces, the Board found that the Lopez Village UGA failed to comply with RCW 36.70A.070(3)(a)-(d), RCW 36.70A.070(1), and RCW 36.70A.020(10) and (12).¹⁵⁴

Special Consideration for Anadromous Fisheries

Some aquifers may also have critical recharging effects on streams, lakes, and wetlands that provide critical fish and wildlife habitat. Protecting adequate recharge of these aquifers may provide additional benefits in maintaining fish and wildlife habitat conservation areas.¹⁵⁵

Critical aquifer recharge areas contribute to groundwater quality and in-stream flow. While critical aquifer recharge areas are designated and protected to ensure availability of potable water, the ground water resource also interacts with streams. Both discharge and recharge areas help cool summer daytime temperatures and provide year round habitat for invertebrates, and important salmonid food source. Protecting aquifer recharge areas from stormwater pollution helps protect water quality for salmonids.

¹⁵⁴ *Stephen F. Ludwig v. San Juan County*, Case No. 05-2-0019c (FDO, Compliance Order, April 19, 2006)

¹⁵⁵ WAC 364-190-100(4)(c)



Department of Commerce

Critical Areas Handbook

Chapter 3

Structuring Critical Areas Regulations

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Brian Bonlender, Director

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Appendices

Appendix 3.A: Local Government Examples of Code Structures – City of Bellevue, City of Sumas, Yakima County, and Jefferson County

Code Applicability

Most communities have chosen to adopt stand-alone regulations to address critical areas to meet the Growth Management Act (GMA) requirement to ensure protection of critical areas. Often, such regulations are a critical areas chapter or section within the code's development regulations or environmental title.¹ This chapter focuses on critical areas regulations. However, critical areas may also be protected using other development regulations (Chapter 4) and non-regulatory programs (Chapter 6).

When to Require Critical Areas Review

The code needs to clearly specify when and where critical areas regulations are applicable, and when a permit is needed. If the critical areas regulations are integrated into existing development regulations, they may apply “automatically” to any new development similar to the manner that setbacks apply. However, if the critical areas regulations are located separately from the development regulations, such as in a critical areas chapter, the critical areas code needs to specify its applicability.

There are two basic options: (1) use code language that states that critical areas regulations are applicable to all development, or (2) specify the types of development and locations regulated by the critical areas code. In either case, critical areas regulations should always apply whenever necessary to protect critical areas from development activity. The first option, to have them always apply, cuts out the step (and relevant code language) of determining whether they apply or not. If the critical areas regulations always apply, then the review process needs to be simple enough that common permits are not unduly delayed. Limiting applicability to only specific uses or mapped locations eliminates the review process for many applicants, but depends on having sufficient information to precisely identify critical areas at the time the regulations are adopted.

The following is an example of code language that could be used to state applicability of the critical areas regulations:

The [city/county] shall regulate all uses, activities, and developments within, adjacent to, or likely to affect, one or more critical areas, consistent with the best available science and the provisions [in the critical areas chapter].

¹ See Appendix 3.A for examples of local government code structures.

The example states applicability broadly, including all “uses, activities, and developments” and it specifies that it applies whenever such activity is “likely to affect” a critical area.

Which Activities Require Review?

While development regulations typically apply to new construction activities, the code language for critical areas needs to be broad enough that it protects critical areas from all development activities, including those that do not involve new structures, such as roads. Clearing, paving, new uses (such as outdoor stages), and even storage of equipment (such as those with hazardous chemicals) need to be regulated to ensure protection. New agricultural activities and conversions from forestry to another land use may also require regulation.

Depending on how performance measures are implemented, exemptions may need to be stated so that minor passive land use activities, such as passive recreational uses, are not subject to review.

Some existing and ongoing business practices that are nonconforming may also be regulated, requiring annual reporting to the jurisdiction about operational performance, storage of hazardous materials, etc. Annual inspection programs by the jurisdiction may be another function that should be considered, especially if the nonconforming use represents a potential risk to a critical area. An example of this would be those businesses that conduct activities that handle hazardous substances or waste and that are located within a critical aquifer recharge area.

When Is an Impact Likely?

The critical areas code should state that review is required whenever the proposed development is near a critical area or whenever an impact is likely. Some codes fail to fully protect critical areas by limiting review to the following scenarios:

- “When a critical area is located on site.” – This ignores a potential critical area that might be located on the adjacent property or in the right-of-way that the proposed development may significantly impact.
- “When the development is located within a critical area.” – This protects critical areas in the most extreme cases, but fails to protect when the development is within the buffer or immediately adjacent to the critical area. Some communities have partially addressed this issue by including the buffer in the language, “when the development is located within a critical area or its buffer.” However, often the buffer distance is not known. Some critical areas do not have buffer set back requirements, and some developments will still result in significant impacts even when located beyond the buffer area. The

light, noise, and smoke from an industrial facility may have a significant impact on habitat even though it may be located beyond the buffer area.

To fully protect critical areas, the code language should include a statement that the community shall regulate development that is “likely to affect” a critical area. However, implementation of “likely to affect” can be difficult without knowing what typical impact distances are. To make the code more meaningful for both the staff and the public, it may be appropriate to include either a standard distance that includes all anticipated building activity set back distances or a list of variable buffer distances that apply depending on the type of critical areas identified.

The first “likely to affect” option can be implemented with the following language:

The [city/county] shall regulate all uses within [___ feet] of, or that are likely to affect, one or more critical areas, consistent with the best available science and the provisions herein.

Alternatively, the community could specify a list of distances based on the critical areas known to exist in their environment:

The [city/county] shall regulate all uses, activities, and developments within, adjacent to, or likely to affect, one or more critical areas, consistent with the best available science and the provisions herein. Adjacent shall mean any activity located:

1. On a site immediately adjoining a critical area;
2. A distance equal to or less than the required critical area buffer width and building setback;
3. A distance equal to or less than 2,620 feet from a peregrine falcon nest;²
4. A distance equal to or less than three hundred (300) feet upland from a stream, wetland, or water body;³
5. Within the floodway, floodplain or channel migration zone; or
6. A distance equal to or less than two hundred (200) feet from a critical aquifer recharge area.⁴

² The distance of 2,620 feet is based on the Washington Department of Fish and Wildlife *Management Recommendations for Washington’s Priority Species, Volume IV: Birds, [PHS Single Page Management Recommendations: Peregrine Falcon](#)*.

³ The distance of three hundred (300) feet is based on maximum recommended riparian habitat area width from the Washington Department of Fish and Wildlife *Management Recommendations for Washington’s Priority Habitats: Riparian*, 1997. [Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications](#)³ is a partial update of the 1997 publication. [Volume 2](#)³ of that document is WDFW’s draft management recommendations to inform local government decisions related to riparian ecosystems and aquatic resources, and is expected to be finalized in the fall of 2018.

⁴ The distance of two hundred (200) feet is a suggested distance to ensure that activities within the critical aquifer recharge area are included under this Chapter, even when the exact boundaries of the critical aquifer recharge area are not known at the time of application.

Using broad language here means that the critical areas regulations will apply in many situations, ensuring that potentially impactful development does not escape review. However, the applicability of regulations does not mean that developments must go through a complex or lengthy review process. First, minor activities should be listed as exempt (see section on exemptions below). Additionally, a two-tiered review process may be used where a low level of review is used for common proposals that are likely to have only minor impacts and a higher level of review for larger projects and those with more direct impacts.

Clear Criteria and Standards for Protection

Development regulations should provide clear and detailed criteria so that in wielding professional judgment, administrators have regulatory “sideboards” and policy direction. Providing sufficient guidance for decision-makers is an important element of development regulations.⁵

The Western Washington Growth Management Hearings Board found that, while RCW 36.70A.172(1) does not require a new best available science investigation at the time of permitting, discretion in issuing permit decisions should be guided by specific criteria. A city’s requirements for an extensive critical areas report by a qualified biologist, coupled with the requirement that habitat alterations or mitigations must protect the quantitative and qualitative functions and values of habitat conservation areas when permits are issued, make the regulations compliant.⁶

In a challenged ordinance, the Central Puget Sound Growth Management Hearings Board found clear regulatory sideboards for approval of substitute mitigation measures were provided by the requirement of “equivalent mitigation for identified impacts.”⁷

Exemptions, Exceptions, and Allowable Uses

As recommended above, a community’s critical areas regulations should apply broadly to any development activity that might result in a detrimental impact to critical areas. However, there are several reasons why some activities should be exempt from critical areas regulations, or why they should be allowed with a lower level of review. Those reasons include:

⁵ *RE Sources v City of Blaine*, 09-2-0015, Order on Reconsideration, April 27, 2010, at 6.

⁶ *Evergreen Islands, Futurewise and Skagit County Audubon Society v. City of Anacortes*, 05-2-0016, FDO, 12/27/05.

⁷ *Shoreline Preservation Society, et al. v. City of Shoreline*, Case No. 15-3-0002, Order on Motions, September 10, 2015, at 10-11.

- Regulations should not prevent emergency actions that reduce risks of natural hazards.
- Some activities are unlikely to result in an impact.
- Additional critical areas review may not be effective in some instances.
- Appropriate uses of land should be encouraged.
- Beneficial activities, such as restoration, should be encouraged.

Minor activities, such as bird watching, pose little threat to critical areas. Other activities may have already been reviewed for critical areas impacts, or their potential critical areas impact may be limited by other regulations, such as stormwater regulations. The time and expense to review such activities would likely be excessive compared to the resulting potential impact.

Local governments use a variety of approaches in applying their critical areas regulations to uses that may have no or minimal impact to critical areas. Some use an applicability section to determine which activities are exempt. Others provide a list of allowed uses in critical areas. The sections that follow illustrate how these approaches may be used, and when they are recommended.

Local government examples in Appendix 3.A include sections for exemptions, exceptions, and allowed uses. These three categories allow varying degrees of allowed activities or uses without review or provide an exception from the regulations of the critical areas chapter.

Exemptions

If an activity or use is “exempt” from the critical areas regulations, the regulations do not apply and no review is required. Proponents of the activity or use are usually required to submit a written request or permit for an exemption that must be approved by the local government. Approval or denial may be an administrative action. If the exemption is denied, the proponent may continue in the permit review process subject to the requirements of the critical area regulations.

Being an exempt activity does not give permission to degrade critical areas or ignore the risk of natural hazards. Also, approval as an exempt activity under the critical areas regulations does not exempt the activity from other applicable local, state, and federal laws and requirements. Typical exemptions include:

- **Emergencies.** Those activities necessary to prevent an immediate threat to public health, safety, or welfare, or that pose an immediate risk of damage to private property and that require remedial or preventive action in a timeframe too short to allow for compliance with the requirements of the critical areas regulations. Usually, emergency actions are required to use reasonable methods to address the emergency with the least possible impact to the critical area. The local government will require review of the

emergency action to determine if it was beyond the scope of the exemption, and may require necessary permits after the fact, including any restoration or mitigation.

- **Operation, maintenance, or repair.** Operation, maintenance, repair or improvements of existing structures or infrastructure, if the activity doesn't alter or increase impacts to critical areas and there is no increased risk to life or property.
- **Passive outdoor activities.** This usually includes recreation, education, and scientific research activities that do not degrade the critical area, including fishing, hiking, and bird watching. Trail construction may be allowed except within wetlands, fish and wildlife habitat conservation areas, and their respective buffers.
- **Forest practices regulated by the state.** Forest practices regulated and conducted in accordance with the provisions of Chapter 76.09 RCW and forest practices regulations, Title 222 WAC, are exempt, except for conversions to non-forestry uses.

Public Agency and Utility Exceptions

If the application of the critical areas regulations would prohibit a development proposal by a public agency or utility, the regulations may allow the agency or utility to apply for an exception. Criteria for review and approval may include:

- There is no other practical alternative to the proposed development with less impact on the critical areas;
- The application of the critical area regulations would unreasonably restrict the ability to provide utility services to the public;
- The proposal does not pose an unreasonable threat to the public health, safety, or welfare on or off the development proposal site;
- The proposal attempts to protect and mitigate impacts to the critical area functions and values consistent with the best available science; and
- The proposal is consistent with other applicable regulations and standards.

The Central Puget Sound Growth Management Hearings Board found that a city's record contained no scientific evidence to support an expansion of the public agency utility exception to include private utility projects. The Board concluded the city failed to demonstrate that it included best available science in violation of RCW 36.70A.172. The Board invalidated the ordinance and remanded to the City.⁸⁹

⁸ *John Hendrickson, et al. v. City of Kenmore*, Case No. 16-3-0002, Final Decision and Order, November 28, 2016, at 4.

⁹ It should be noted that the 2006 version of the ordinance included some but not all of the criteria recommended above. These criteria were included in a Sample Critical Areas Ordinance that Commerce no longer publishes. The Board chose not to accept the City's assertion that the Commerce Sample Critical Areas Ordinance is best available science because the City had deviated from it in 2006. Thus, the Board did not decide whether adopting the Commerce Sample Critical Areas Ordinance suffices to show that best available science has been included. The Board stated that Commerce's technical assistance is aimed at developing GMA-compliant critical area policies, but

Allowed Uses or Activities

“Allowed uses or activities” are those uses or activities that are unlikely to result in a critical areas impact because of other regulations or previous reviews. These activities are subject to review by the city or county, but do not require a separate critical areas review or report. Since these activities are generally not “exempt,” the critical areas standards continue to apply and the underlying permit could be conditioned to ensure that the activity complies with critical areas protection. Some jurisdictions use the term “partial exemptions” to note that these activities are exempt from the critical areas review process, but not the protection standards. Allowed uses or activities that may not need to complete a new critical review might include:

- **Projects previously reviewed for critical areas impacts.** Development permits and approvals that involve both discretionary land use approvals (such as subdivisions, rezones, or conditional use permits), and construction approvals (such as building permits), may not need to complete a new critical area review. Some jurisdictions place a time limit on how long a previous critical area review is good for, such as five years, to account for changes in codes, critical areas’ boundaries, or other factors over time.
- **Modification of existing structures.** Structural modifications or replacement of an existing legally constructed structure that doesn’t alter or increase impacts to a critical area or buffer and doesn’t increase risk to life or property.
- **Activities within the improved right-of-way.** Replacement, modification, installation, or construction of utility facilities, lines, pipes, mains, equipment or appurtenances, not including substations, when such facilities are located within the improved portion of the public right-of-way or a county/city authorized private roadway. Provisions to address activities that alter a wetland or watercourse or result in the transport of sediment or increased stormwater runoff may include: (1) Increasing buffer widths equal to the width of the right-of-way improvement, including disturbed areas; and (2) Retention and replanting of native vegetation along the right-of-way and resulting disturbance.
- **Minor utility projects.** Utility projects with minor or short-duration impacts to critical areas and no significant impact on the function or values of a critical area, provided such projects are constructed with best management practices and additional restoration measures. Criteria for minor utility projects can include: (1) No practical alternative with less impact on the critical area; (2) The activity involves the placement of a small utility facility (e.g., pole, street sign, etc.); and (3) The activity involves disturbance of an area less than a certain number of square feet.
- **Public and private pedestrian trails.** Public and private pedestrian trails, except in wetlands, fish and wildlife habitat conservation areas, or their buffers. Conditions for approval can include: (1) The trail surface must meet all other requirements including stormwater regulations; (2) Critical area and/or buffer widths must be increased, where

WAC 365-195-910 does not say Commerce’s model ordinances are the best and most current science available. *Id* at 15.

possible, equal to the width of the trail corridor, including disturbed areas; and (3) Trails proposed in landslide or erosion hazard areas must be constructed so as to not increase the risk of landslide or erosion in accordance with an approved geotechnical report.

- **Minor vegetation removal.** Selective removal of invasive, noxious and non-native vegetation with hand labor and light equipment. However, removal of vegetation from a critical area or its buffer may require approval.
- **Removal of hazard trees.** Removal of trees from critical areas and buffers that are hazardous, posing a threat to public safety, or posing an imminent risk of damage to private property may require a report from a certified arborist, registered landscape architect, or professional forester. The report documents the hazard and provides a replanting plan for replacement trees consistent with the jurisdiction's compensatory mitigation standards to provide for no net loss of ecosystem functions and values. Other tree pruning or cutting activities may be subject to requirements regarding tree replacement or provision for critical wildlife habitat. Measures to control a fire or halt the spread of disease or damaging insects should be consistent with the state Forest Practices Act (Chapter 76.09 RCW, and local forest regulations if adopted) with provisions for replacement.
- **Chemical applications.** The application of herbicides, pesticides, fertilizers, or other hazardous substances, as approved the city/county. Provided, their use should be restricted in accordance with state Department of Fish and Wildlife Management Recommendations and the regulations of the state Department of Agriculture and the U.S. Environmental Protection Agency.¹⁰
- **Minor site investigation work.** Work necessary for land use permit submittals, such as surveys, soil logs, percolation tests, and other related activities, can be an allowed use when they do not require construction of new roads or significant amounts of excavation. But, in every case, impacts to the critical area should be minimized and disturbed areas immediately restored.
- **Navigational aids and boundary markers.** Construction or modification of navigational aids and boundary markers.

Although exemptions are not prohibited under the GMA, the Eastern Washington Growth Management Hearings Board found that all development regulations, even those for exempt activities, must be based on best available science and tailored so as to reasonably ameliorate potential harm and address cumulative impacts. The county contended that their administrative review process would assure that functions and values of the critical area are protected. However, the Board found that it is not the review process but the inclusion of best available science that is imperative when it comes to critical areas.¹¹

¹⁰ More information on commercial and residential use of chemicals can be found in the Washington State Department of Ecology's [Critical Aquifer Recharge Areas: Guidance Document, 2005, Publication #05-10-028](#); and from the Washington State Department of Agriculture, <http://agr.wa.gov/>.

¹¹ *Hazen, et al v. Yakima County*, 08-1-0008c, FDO at 29 (April 5, 2010), at 30.

An exception from the critical areas regulations for public agencies and public/private utilities when such an entity “has difficulty” meeting protection regulations resulting in preclusion of the proposal was challenged. The Western Washington Growth Management Hearings Board responded:

The clause “would preclude a development proposal” does not include a qualifier that places the initial burden on the agency to show the location of the proposed development is necessary. . . the initial determination under the County’s system, the location of the “development proposal”, is left solely to the proponent, notwithstanding the possibility the proposal could be located in an area with fewer negative impacts to a critical area. The County has the obligation to protect critical areas and leaving the choice of location to the proponent is in effect a delegation of authority, would abrogate the duty to protect critical areas and fails to assure no net loss of ecological functions. Furthermore, there are no standards by which to determine that a project proponent would “have difficulty” meeting standard critical area regulations.¹²

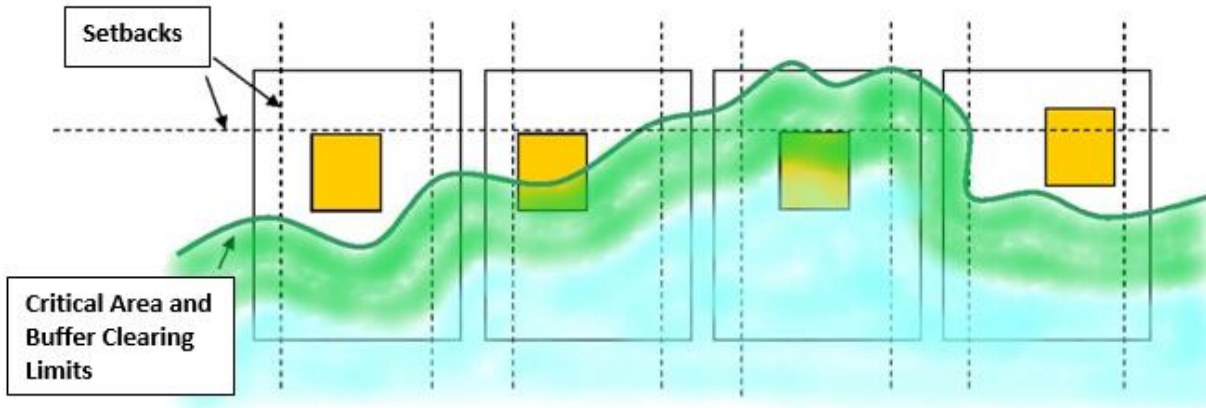
Reasonable Use Exception

In addition to exemptions and allowed uses, cities and counties must allow a minimal “reasonable use” of property even if such a use would otherwise be denied by the critical areas regulations. The Fifth Amendment and Fourteenth Amendment of the U.S. Constitution provide individuals with protection from being deprived of the use of one’s property without due process or just compensation.

If critical areas regulations denied all use of a parcel, it would typically be considered a “taking” of the property. If legally challenged and unjustified, a court could throw out the regulations, thereby jeopardizing environmental protection. To avoid a taking, cities and counties typically include a reasonable use provision that allows only the minimal “reasonable” use of a property that would otherwise be prohibited.

Unlike variances, the purpose of a reasonable use exception permit is not to allow general development within critical areas, but to allow only the minimal “reasonable” use of the property so as to avoid a constitutional taking. Four scenarios are provided to illustrate situations where a reasonable use exception might or might not be applicable:

¹² *Friends of the San Juans, et al. v. San Juan County*, 13-2-0012c, FDO, September 6, 2013, at 33, 34.



Reasonable Use Scenarios in the Diagram

- A** – No reasonable use exception would be granted because there is sufficient space outside the critical area clearing limits.
- B** – A reasonable use exception might be granted since there is insufficient space for a reasonable use. The development area would need to be limited or scaled back in size and located where the impact is minimized. The jurisdiction might consider a variance to the required setback to minimize intrusion into the protection area.
- C** – A reasonable use exception would be granted for a minimal development if the property is completely encumbered and mitigation methods are applied.
- D** – The jurisdiction might consider modifications to the required setback to prevent intrusion into the protection area.

The criteria for reasonable use permits need to be consistent with case law to reduce the potential for appeals and overturned decisions. Key to being consistent with case law is careful use of the term “reasonable.” Generally, the concept of “reasonable” has been left to the courts to decide, thereby making it difficult for cities to rule on whether or not a project qualifies. A reasonable use is often thought to be a modest single-family home, although some other structure might be “reasonable” depending on zoning, adjacent uses, and the size of the property.

The reasonable use permit criteria should allow for “reasonable” uses. If the criteria state that the applicant must demonstrate that no other use “is possible,” or that there are “no feasible alternatives,” it would conflict with the concept of a “reasonable” use as other “possible” alternatives may be so costly as to be unreasonable. “Possible” alternatives may also not meet the objectives of the property owner. For example, continued preservation of habitat is a “possible” use of property, but probably not a “reasonable” use for the owner.

Some jurisdictions have allowed a reasonable use exception in only those situations where all economic use of a property would be denied by the critical areas regulations. Criteria that might be used to allow approval of a reasonable use exception include:

- No other reasonable economic use of the property has less impact on the critical area;
- The proposed impact to the critical area is the minimum necessary to allow for reasonable economic use of the property;
- The inability of the applicant to derive reasonable economic use of the property is not the result of actions by the applicant after the effective date of this regulation, or its predecessor;
- The proposal does not pose an unreasonable threat to the public health, safety, or welfare on or off the development proposal site;
- The proposal will result in no net loss of critical area functions and values consistent with the best available science; or
- The proposal is consistent with other applicable regulations and standards.

The Western Washington Growth Management Hearings Board recognized that, although they may actually permit impacts to a critical area, reasonable use provisions are an indispensable component of critical area regulations because they address the issue of regulatory takings claims. Regulatory takings have been an element of American jurisprudence since the 1920s, and are founded on constitutional principles, seeking to provide a remedy when a regulation takes all reasonable use of a parcel of land. Given this grounding in constitutional law, the Board had no jurisdiction to determine the petitioners' claims as to whether the County's regulations exceed what is necessary to protect the County from a constitutionally-based takings claim as this is a question for the courts. However, although reasonable use provisions are necessary to prevent a constitutional takings claim, that does not mean such provisions should not prevent the protection of all the functions and values of wetlands and do not need to be supported by best available science.¹³

The Western Board found that a county failed to protect critical areas when it allowed grandfathered non-conforming uses that no longer comply with the more recently enacted, and presumably more protective land use laws, to be considered a "reasonable use" when determining whether a proposed use met the reasonable use criteria.¹⁴

¹³ *WEAN/CARE v. Island County*, 08-2-0026c, FDO, November, 17, 2008, at 23.

¹⁴ *Whidbey Environmental Action Network v. Island County*, Case No. 14-2-0009, Final Decision and Order, June 26, 2015, at 8.

Avoiding Unconstitutional Takings of Private Property

The Washington State Office of the Attorney General is directed under RCW 36.70A.370 to advise state agencies and local governments on an orderly, consistent process that better enables government to evaluate proposed regulatory or administrative actions to assure these actions do not result in unconstitutional takings of private property. The process must be used by state agencies and local governments that are required plan under the GMA. The Attorney General publishes an [Advisory Memorandum](#) to provide state agencies and local governments with a tool to help them evaluate whether proposed regulatory or administrative actions may result in an unconstitutional taking of private property or raise substantive due process concerns.

Critical Areas Review Process

Often, a determination about the likelihood of impacts to a critical area can be determined with some basic information. A critical areas identification form can ask a series of questions about the subject property. The questions can be designed to be completed by the property owner or applicant without the assistance of a technical professional. Combined with a site visit, GIS data, and aerial photography, the staff may be able to use the applicant's responses to determine whether critical areas are located nearby and whether the development is likely to result in an impact. This allows the staff to conduct a "low level" review without a lot of expense or delay. In locations where little existing information is available, the community may require the applicant to submit additional information about the site and proposal, such as site photographs.

Documenting Other Regulations

Regulations to protect critical areas often overlap with other environmental regulations, such as clearing and grading regulations and stormwater regulations. At times, regulations to protect critical areas may be superseded by more stringent zoning requirements. It is a good idea when reviewing and updating the critical areas regulations to ensure that they cross-reference these other regulations or permit requirements. When a local government is using its State Environmental Policy Act (SEPA) determination authority for programmatic or project environmental review, it should identify how these other regulations will be applied and conditioned to reflect the "protection of functions and values" requirement. For more information about critical areas and other regulations, see Chapter 4, Critical Areas Protection and Other Laws and Regulations.

Critical Areas Protection and SEPA

Cities and counties are encouraged to select certain categorized exemptions that do not apply in one or more critical areas pursuant to [WAC 197-11-908](#). SEPA review procedures should require critical areas delineation and review prior to making a threshold determination. SEPA and critical area review procedures should be evaluated to ensure consistent project review procedures. For more discussion about SEPA and the GMA, see Chapter 4, Critical Areas Protection and Other Laws and Regulations.

Reviewing Multiple Critical Areas and Local Project Review

Where there are multiple critical areas that may be impacted by development, special efforts should be made to consider the cumulative effect of the permitting decision on the different critical areas. This information should be well documented during project review using either cumulative impacts reporting requirements in the critical areas regulations, or through the SEPA environmental review process. If project mitigation is being considered that is not required by the critical areas regulation, then the SEPA documentation should identify the impacts and the decision process for avoiding or mitigating environmental impacts to the critical area(s). (See the section on SEPA in Chapter 4).

Analyzing consistency of the proposed project with the applicable development regulations is a requirement under RCW 36.70B.040 for those jurisdictions fully planning under the GMA. All local jurisdictions routinely review projects for consistency with applicable regulations. GMA counties and cities must, at a minimum, consider the following four factors in their development regulations, or in the absence of applicable development regulations, the comprehensive plan policies.¹⁵ The fourth factor is most relevant for critical areas that often have specific numerical standards, such as buffers or setbacks.

- The type of land use allowed, such as the land use designation;
- The level of development allowed, such as units per acre or other measures of density;
- Infrastructure, such as the adequacy of public facilities and services to serve the proposed project; and
- The characteristics of the proposed development, measured by the degree to which the project conforms to specific development regulations or standards.

This uniform approach is based upon existing project review practices and should not place an additional burden on applicants or local government. Consistency analysis is largely a matter of code checking for most projects that are simple or routine. More complex projects, such as those that would impact more than one critical area, may require more analysis of these

¹⁵ See Commerce's Project Consistency Rules, [Chapter 365-197 WAC](#), for more information on consistency criteria and analysis.

factors, including possible studies. If the project is not consistent with the development regulations and comprehensive plan, the project can be conditioned to make it consistent, or denied.¹⁶

Qualified Professionals

A jurisdiction is encouraged to consult with a qualified professional or a team of professionals at an early stage of critical area assessment and in the development of sound management approaches. Professionals can help the jurisdiction identify local critical areas, assemble and review the best science for understanding how the critical areas function, and help develop management recommendations.

In [WAC 365-195-905\(4\)](#), Commerce defines the role of a qualified professional and what qualifies him or her for this role. Determining whether a person is a qualified scientific expert with expertise appropriate to the relevant critical areas is determined by the person's professional credentials and/or certification. In addition, any advanced degrees earned in the pertinent scientific discipline from a recognized university, the number of years of experience in the pertinent scientific discipline, recognized leadership in the discipline of interest, formal training in the specific area of expertise, and field and/or laboratory experience with evidence of the ability to produce peer-reviewed publications or other professional literature. Where pertinent scientific information implicates multiple scientific disciplines, counties and cities are encouraged to consult a team of qualified scientific experts representing the various disciplines to ensure the identification and inclusion of the best available science.

The scientific expert or experts may rely on their professional judgment based on experience and training, but they should use the criteria set out in WAC 365-195-900 through 925 and any technical guidance provided by agencies with expertise.

¹⁶ RCW 36.70B.030 and 040, and RCW 43.21C.240.

Appendix 3.A

Local Government Examples of Code Structures

City of Bellevue

City of Sumas

Yakima County

Jefferson County

City of Bellevue

Part [20.25H](#) Critical Areas Overlay District

I. Scope and Purpose

- [20.25H.005](#) Scope
- [20.25H.010](#) Purpose
- [20.25H.015](#) Applicable procedure
- [20.25H.020](#) Submittal requirements

II. Designation of Critical Areas and Dimensional Standards

- [20.25H.025](#) Designation of critical areas
- [20.25H.030](#) Identification of critical area
- [20.25H.035](#) Critical area buffers and structure setbacks
- [20.25H.040](#) Standards for modifying non-critical area setbacks
- [20.25H.045](#) Development density/intensity

III. Use and Development in the Critical Areas Overlay District

- [20.25H.050](#) Uses and development in the Critical Areas Overlay District
- [20.25H.055](#) Uses and development allowed within critical areas – Performance standards
- [20.25H.065](#) Uses and development within critical area buffer or critical area structure setback not allowed pursuant to LUC 20.25H.055

IV. Streams

- [20.25H.075](#) Designation of critical area and buffers
- [20.25H.080](#) Performance standards
- [20.25H.085](#) Mitigation and monitoring – Additional provisions
- [20.25H.090](#) Critical areas report – Additional provisions

V. Wetlands

- [20.25H.095](#) Designation of critical area and buffers
- [20.25H.100](#) Performance standards
- [20.25H.105](#) Mitigation and monitoring – Additional provisions
- [20.25H.110](#) Critical areas report – Additional provisions

VI. Shorelines

- [20.25H.115](#) Designation of critical area and buffers

20.25H.118 Mitigation and monitoring – Additional provisions

20.25H.119 Critical areas report – Additional provisions

VII. Geologic Hazard Areas

20.25H.120 Designation of critical area and buffers

20.25H.125 Performance standards – Landslide hazards and steep slopes

20.25H.130 Performance standards – Coal mine hazard area

20.25H.135 Mitigation and monitoring – Additional provisions for landslide hazards and steep slopes

20.25H.140 Critical areas report – Additional provisions for landslide hazards and steep slopes

20.25H.145 Critical areas report – Approval of modification

VIII. Habitat Associated with Species of Local Importance

20.25H.150 Designation of critical area

20.25H.155 Uses in habitat for species of local importance

20.25H.160 Performance standards

20.25H.165 Critical areas report – Additional provisions

20.25H.170 Process to identify additional species of local importance

IX. Areas of Special Flood Hazard

20.25H.175 Designation of critical area

20.25H.177 Definitions

20.25H.180 Development in the area of special flood hazard

X. Reasonable Use Exception

20.25H.190 Reasonable use exception – Purpose

20.25H.195 Reasonable use exception – Process

20.25H.200 Reasonable use exception – Applicability

20.25H.205 Reasonable use exception – Performance standards

XI. General Mitigation and Restoration Requirements

20.25H.210 Applicability

20.25H.215 Mitigation sequencing

20.25H.220 Mitigation and restoration plan requirements

20.25H.225 Innovative mitigation

XII. Critical Areas Report

- 20.25H.230 Critical areas report – Purpose**
- 20.25H.235 Critical areas report – Review process**
- 20.25H.240 Critical areas report – Limitation on modifications**
- 20.25H.245 Incorporation of best available science**
- 20.25H.250 Critical areas report – Submittal requirements**
- 20.25H.255 Critical areas report – Decision criteria**
- 20.25H.260 Critical areas report – Assurance devices**
- 20.25H.265 Critical areas report – City technical review**
- 20.25H.270 Critical areas report – Independent third-party review**

City of Sumas

Chapter 15.20 CRITICAL AREAS

Sections:

- [15.20.010](#) Authority.
- [15.20.020](#) Purpose and intent.
- [15.20.030](#) Interpretation.
- [15.20.040](#) Relationship to other regulations.
- [15.20.050](#) Applicability and jurisdiction.
- [15.20.070](#) Authorization required.
- [15.20.080](#) Critical area review requirements.
- [15.20.090](#) Exemption from critical area review requirements.
- [15.20.100](#) Waiver for subsequent approvals.
- [15.20.105](#) Critical area maps.
- [15.20.180](#) Application and fees.
- [15.20.190](#) Threshold determination.
- [15.20.200](#) Detailed study.
- [15.20.210](#) Final determination.
- [15.20.230](#) Critical area mitigation—Generally.
- [15.20.240](#) Bonding.
- [15.20.250](#) Frequently flooded areas.
- [15.20.260](#) Wetlands—Designation and classification.
- [15.20.270](#) Wetlands indicators.
- [15.20.280](#) Wetlands—Detailed study requirements.
- [15.20.290](#) Wetlands—Performance requirements.
- [15.20.300](#) Wetlands—Mitigation requirements.
- [15.20.310](#) Allowed activities in wetlands, streams, and buffers.
- [15.20.320](#) Fish and wildlife habitat conservation areas—Designation.
- [15.20.330](#) Fish and wildlife HCA indicators.
- [15.20.340](#) Fish and wildlife habitat conservation areas—Detailed study requirements.
- [15.20.350](#) Fish and wildlife habitat conservation areas—Performance requirements.
- [15.20.360](#) Fish and wildlife habitat conservation areas—Mitigation requirements.

- [15.20.380](#) Geologically hazardous areas classification and designation.
- [15.20.390](#) Geologically hazardous areas indicators.
- [15.20.400](#) Geologically hazardous areas detailed study requirements.
- [15.20.410](#) Geologically hazardous areas performance requirements.
- [15.20.420](#) Aquifer recharge area designation.
- [15.20.430](#) Aquifer recharge area detailed study requirements.
- [15.20.440](#) Aquifer recharge area performance requirements.
- [15.20.450](#) Reasonable use exceptions.
- [15.20.460](#) Enforcement.
- [15.20.470](#) Violations and penalty.
- [15.20.480](#) Definitions.

Yakima County

TITLE 16A CRITICAL AREAS*

Chapters:

[16A.01](#) General Provisions

[16A.02](#) Definitions

[16A.03](#) Application and Review Procedures

[16A.04](#) Stream Corridor System and Other Hydrologically Related Critical Areas

[16A.05.20](#) Flood Hazard Areas – General Provisions

[16A.05.28](#) Flood Hazard Protection Standards

[16A.05.32](#) Floodway Fringe Uses

[16A.05.36](#) Floodway Uses

[16A.05.40](#) Nonconforming Uses and Structures

[16A.05.44](#) Flood Hazard Protection Administration

[16A.05.48](#) Elevation and Floodproofing Certification

[16A.05.52](#) Variances

[16A.05.72](#) Map Correction Procedures

[16A.06](#) Enforcement and Penalties

[Appx. A](#) Wetland Rating System

[Appx. B](#) Designated Shoreline Lakes, Ponds and Type 1 Streams

[Appx. C](#) Designated Type 2 Stream Corridors

Jefferson County

Chapter 18.22 CRITICAL AREAS

Sections:

Article I. Purpose

[18.22.010](#) Purpose – Generally.

Article II. Administrative Provisions

[18.22.020](#) Applicability.

[18.22.030](#) Identification and mapping of critical areas.

[18.22.050](#) Coverage.

[18.22.070](#) General exemptions.

[18.22.080](#) Nonconforming uses.

[18.22.090](#) Reasonable economic use variance.

[18.22.095](#) Physical separation – Functional isolation.

Article III. Critical Aquifer Recharge Areas

[18.22.100](#) Classification.

[18.22.110](#) Designation.

[18.22.120](#) Applicability.

[18.22.130](#) Protection standards.

[18.22.135](#) Adaptive management.

Article IV. Frequently Flooded Areas

[18.22.140](#) Incorporation by reference.

[18.22.150](#) Relationship to other regulations.

Article V. Geologically Hazardous Areas

[18.22.160](#) Classification/designation.

[18.22.170](#) Protection standards.

[18.22.180](#) Conditions.

Article VI. Fish and Wildlife Habitat Conservation Areas (FWHCAs)

[18.22.195](#) Compliance alternatives.

[18.22.200](#) Classification/designation.

[18.22.210](#) Process and requirements for designating habitats of local importance as critical areas.

[18.22.220](#) Sources used for identification.

[18.22.230](#) Fish and wildlife habitat conservation area (FWHCA) maps.

[18.22.250](#) Regulated activities.

[18.22.265](#) Habitat management plans – When required.

[18.22.270](#) Protection standards.

[18.22.280](#) Conditions.

Article VII. Wetlands

[18.22.290](#) Stewardship alternative.

[18.22.300](#) Classification/designation.

[18.22.310](#) Regulated activities.

[18.22.330](#) Protection standards.

[18.22.340](#) Noncompensatory enhancement.

[18.22.350](#) Mitigation.

Article VIII. Special Reports

[18.22.360](#) General requirements.

[18.22.370](#) Waivers.

[18.22.380](#) Retaining consultants.

[18.22.390](#) Acceptance of special reports.

[18.22.400](#) Aquifer recharge area report.

[18.22.410](#) Drainage and erosion control plan.

[18.22.420](#) Geotechnical report.

[18.22.430](#) Grading plan.

[18.22.440](#) Habitat management plan.

[18.22.450](#) Wetland delineation report.

Article IX. Alternative Protection Standards – Critical Area Stewardship Plans (CASPs)

[18.22.460](#) Critical area stewardship plans (CASPs) – Generally.

[18.22.461](#) Applicability and limitations.

[18.22.465](#) Performance standards.

[18.22.470](#) CASP contents – Existing conditions.

[18.22.480](#) Description of the management proposal.

[18.22.490](#) Maintenance.

[18.22.510](#) As-built plan requirement.

[18.22.520](#) Periodic monitoring.

[18.22.530](#) Contingency planning.

[18.22.540](#) Failure to submit required reports.

[18.22.550](#) Waiver.



Department of Commerce

Critical Areas Handbook

Chapter 4

Critical Areas and Other Laws and Regulations

June 2018

Brian Bonlender, Director

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Introduction

A key component of Washington’s planning laws is consistency. Critical areas regulations should complement and be consistent with other local regulations, ordinances, and plans. Local plans and regulations change in response to new requirements and new conditions. Updates to the comprehensive plan, development regulations and critical areas protection should be reviewed for consistency. The standards required to protect critical areas may conflict with out-of-date standards or exemptions in other code sections.

Counties and cities should consider reviewing the related codes and standards to ensure consistency and critical area protection. Changes in zoning in areas with extensive riparian habitat should be reviewed for consistency with protection of existing fish and wildlife habitat functions and values. If clearing and grading exemptions allow unrestricted clearing of sensitive land adjacent to critical areas, such regulations may not fully protect critical areas. Critical areas regulations should also be reviewed for consistency in implementing other state and federal programs such as the Shoreline Management Act, Forest Practices Act, Endangered Species Act, and Clean Water Act.¹

This chapter includes suggestions for how jurisdictions may review critical areas protection for consistency with these other local, state and federal regulatory requirements. This chapter also provides a roadmap to salmon recovery as it relates to the Growth Management Act (GMA) requirement to give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.²

The Comprehensive Plan

The GMA requires that the planning goals in RCW 36.70A.020 guide the development and adoption of comprehensive plans and development regulations. These goals include retaining open space; enhancing recreation opportunities; conserving fish and wildlife habitat; protecting the environment and enhancing the state's high quality of life, including air and water quality, and the availability of water.³ Jurisdictions are required to include the best available science in developing policies and development regulations to protect the functions and values of critical areas.⁴

The Division I Court of Appeals held that the Growth Management Hearings Boards may review critical areas policies for compliance with the best available science requirement. The court acknowledged that the GMA does not require local governments to adopt critical areas policies, but held that if a city or county chooses to adopt critical areas policies, the Board has jurisdiction under RCW 36.70A.280 to review the policies to determine whether they comply with RCW 36.70A.170 and .172(1).⁵

¹ WAC 365-196-735 contains a full list of other authorities.

² RCW 36.70A.172(1)

³ WAC 365-196-485(1)(a)

⁴ WAC 365-196-485(1)(B)

⁵ *Honesty in Environmental Analysis & Legislation (HEAL) v. Central Puget Sound Growth Management Hearings Board*, 96 Wn. App. 522, 979 P.2d 864 (June 21, 1999) (amended Aug. 25, 1999). The court inadvertently referred to RCW 36.70A.171 (which does not exist), rather than RCW 36.70A.170, at 528.

Efforts to protect critical areas through regulation initially tended to focus on small scale site-specific development standards. Recently, focus has shifted to broad, landscape-based measures aimed at concentrating growth in areas that minimize critical area impacts, limiting development densities in undeveloped areas with important ecosystem functions, and preserving large blocks or corridors of natural habitat. Local governments should use their comprehensive plans to ensure these strategies are effective.

Land Use Element

Quality and quantity of groundwater

Counties and cities planning under RCW 36.70A.040 are required to provide for protection of the quality and quantity of ground water used for public water supplies in the land use element of the comprehensive plan. Where applicable, the land use element must review drainage, flooding and stormwater runoff in the area and in nearby jurisdictions. The land use element must provide guidance to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound.⁶

Open Space and Wildlife Corridors

The GMA directs local governments planning under RCW 36.70A.040 to “identify open space corridors within and between urban growth areas. They shall include lands useful for recreation, wildlife habitat, trails, and connection of critical areas...”⁷

Wildlife corridors maintain connectivity, provide access to larger habitats, and allow populations to interbreed. At the largest scale, wildlife corridors allow easy movement for even the largest mammals. However, smaller wildlife corridors can provide habitat connectivity for other species, including amphibians, fish, and birds. Continuous riparian corridors provide both aquatic and terrestrial connectivity. In urban areas, such corridors can provide significant recreational opportunities and important linkages in a highly fragmented landscape. Whenever feasible, consider incorporating plans that link urban and rural parks and open spaces to form functional wildlife corridors, which then ultimately can be joined to outlying habitat areas.

Changes in Land Use Designations

Many existing data sources can identify, in advance of the development review process, the likely presence of critical areas. When developing and reviewing the comprehensive plan and future land use designations, counties and cities should use available information to avoid directing new growth to areas with a high probability of conflicts between new development and protecting critical areas. Examples include:

⁶ RCW 36.70A.070(1) and WAC 365-196-485(1)(d). See additional detail under Critical Areas and Groundwater Protection on p. 23.

⁷ RCW 36.70A.160 and WAC 36-196-485(1)(c)

- Expanding the urban growth area or expanding the allowed types of development in a floodplain or geologically hazardous area;
- Allowing higher densities or expanding potentially polluting uses in critical aquifer recharge areas;
- Expanding allowed activities in areas with a significant concentration of critical areas or large-scale, complex, and high value critical areas.

Identifying areas with a high probability of critical areas conflicts can help identify lands that are likely to be unsuitable for development and help a county or city better provide sufficient capacity of land that is suitable for development as required by RCW 36.70A.115. Impacts to these areas could be minimized through measures such as green infrastructure planning, open space acquisition, open space zoning, and the purchase or transfer of development rights.⁸

When considering expanding the urban growth area, counties and cities should avoid including lands that contain large amounts of mapped critical areas. Counties and cities should not designate new urban areas within the 100-year flood plain unless no other alternatives exist, and if included, impacts on the flood plain must be mitigated. For counties west of the Cascade crest, expansion of the urban growth into the 100-year floodplain is generally prohibited.⁹

Natural Environment Element

The GMA provides the option of adopting a natural environment element in the comprehensive plan. Many jurisdictions have environmental elements in their comprehensive plans that address critical areas. For example, the City of Covington’s Natural Environment Element provides:

- Policy NE-24 - Use incentive programs, acquisition, appropriate regulations and other techniques to preserve critical areas as open space where development may pose hazards to health, property, or important ecological functions.
- Policy NE-27 – Ensure the effectiveness of critical area mitigation by requiring adequate critical area studies and mitigation plans, the application of mitigation sequencing, financial assurances from developers to ensure mitigation success, and by improving City oversight of maintenance and monitoring of mitigation sites.
- Policy NE-28 – Require and enforce mitigation to ensure no net loss of critical area functions, including mitigation designed to replace critical area acreage lost due to development.

The City of Wenatchee’s Natural Environment Element focuses on education to raise public awareness in Goal 1, as well as protection of critical areas in Goal 2:

- Policy 1 – Be an active player in education and involvement programs that raise public awareness about environmental issues, advocate respect for the environment, and demonstrate how individual and cumulative actions directly affect our surroundings.
- Policy 2 – Work in cooperation with public agencies, local organizations, associations, departments, and groups in creating and carrying out environmentally related programs and outreach efforts.

⁸ WAC 365-196-485

⁹ RCW 36.70A.110(8) and WAC 365-196-485(4)(b). The 100-year floodplain is also referred to as the one percent floodplain or the Special Flood Hazard Area.

- Policy 8 – Where avoidance measures are not possible for critical area impacts, ensure the mitigation measures include appropriate performance measures to provide successful implementation of mitigation and the maintenance of functions and values of the applicable critical area consistent with best available science.

The City of Bellingham’s Environment Chapter includes policies such as:

- Policy EV-12 – Safeguard the long-term functions and values of critical areas through effective mitigation measures when avoidance is not feasible.
- Policy EV-13 – Select wetland mitigation sites for unavoidable impacts based on current state mitigation guidance documents and on the watershed approach with an emphasis on the ecologically-preferable site.
- Policy EV-18 – Identify and conserve wildlife habitat, considering the full range of the life-cycle needs for the species dependent on it.

Protection of Critical Areas and Other Development Regulations

Development regulations that are not part of the critical areas ordinance but affect critical areas must still meet GMA requirements for critical areas protection. The Division 3 Court of Appeals upheld this determination by the Eastern Washington Growth Management Hearings Board. The court concluded that the county subdivision code failed to protect critical areas as required by the GMA. Significantly, the code did not address impervious surface coverage in multiple important contexts, it did not apply countywide, and it did not mention methods for addressing storm water or impervious surface coverage.¹⁰

The required level of protection of wetlands and riparian buffers must be reasonably based on relevant science; however, a county has a range of discretion as to how exactly that level is met. To the extent a county relies on other statutes as part of its protection scheme, they should be referenced in the ordinance. A citizen should be able to understand what protection elements exist by reading the ordinance.¹¹

Consistency with Other Development Regulations

Critical areas regulations should be complementary to other local regulations, ordinances, and plans. The development regulations, including critical areas regulations, must be internally consistent.¹² And, at a minimum, any amendment to the comprehensive plan or development regulations must be reviewed for consistency during the review and update process.¹³

¹⁰ *Stevens County v. Eastern Washington Growth Management Hearings Board*, 163 Wn. App. 680 (2011), review denied, 173 Wn.2d 1019 (2012).

¹¹ *Id.*

¹² WAC 365-196-500(3).

¹³ WAC 365-196-500(4).

Accordingly, changes to the following local land use regulations adopted since your last periodic update should be reviewed and updated to be consistent with the goals of the local critical areas program.

Regulation or Standard	Review for the Following
Zoning	Zoning change criteria that address critical areas should be reviewed for consistency with critical areas requirements.
Subdivisions	Subdivision provisions that refer to critical areas should be reviewed for consistency with the critical areas requirements.
Clearing and Grading	<p>Standards should be adopted to regulate clearing and grading activities prior to site development approval.</p> <p>Review clearing and grading exemptions to ensure adequate regulatory oversight for projects located within critical areas or buffers.</p>
Stormwater Management	Stormwater management regulations that are consistent with Department of Ecology (Ecology) recommendations should be adopted. The Clean Water Act Municipal Stormwater Permits ¹⁴ require nearly all urban and urbanizing jurisdictions to adopt comprehensive stormwater management programs, including requirements for low impact development.
Shoreline Master Program	Work with Ecology regional office staff if your jurisdiction is considering amending Shoreline Environment designations or development standards to protect shorelines under the Shoreline Master Program as part of a critical areas ordinance update.
State Environmental Policy Act (SEPA)	<p>Counties and cities may select certain categorical exemptions from SEPA that do not apply in designated critical areas pursuant to WAC 197-11-908. Also see WAC 197-11-158.</p> <p>SEPA review procedures should rely first on critical areas review requirements to address environmental impacts. Local governments are encouraged to complete review under the critical areas regulations prior to making a threshold determination. Counties and cities may then make a determination that some or all of the environmental impacts of a project have been adequately addressed by critical areas regulations.¹⁵</p> <p>SEPA and critical area review procedures should be evaluated to ensure project and environmental review procedures are integrated and not duplicative.¹⁶</p>
Local Development Review	Review project noticing rules to ensure that a statement regarding critical areas is included on the Notice of Application, thereby communicating to the public whether or not critical areas have been determined to be present and how they will be protected.

¹⁴ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits>

¹⁵ RCW 43.21C.240 and WAC 197-11-158.

¹⁶ RCW 36.70B.060.

To ensure that other regulations do not conflict with adopted critical areas standards, local codes may include a provision that has the stronger regulation apply, such as a statement like this:

When any provision of this Title or any existing regulation, easement, covenant, or deed restriction conflicts with these critical areas regulations, that which provides more protection to the critical areas shall apply.

The Western Washington Growth Management Hearings Board rejected the argument that the RCW 36.70A.172 requirement to include best available science must apply to all development regulations that may impact critical areas. However, the Board found that if newly adopted regulations impact the effectiveness of the critical areas regulations, then the challenge to those new regulations would be that they violate the requirement to protect critical areas. A challenge to development regulations that changes the protectiveness of critical areas regulations would rest on RCW 36.70A.060, rather than on the failure to include best available science pursuant to RCW 36.70A.172.¹⁷

Zoning Ordinance

Zoning ordinances address the development of specific land uses consistent with the comprehensive plan. They typically include such provisions as limitations on height, bulk, number of stories and size of buildings and structures; the size of yards, courts and other open spaces; the density of population; lot coverage by buildings and structures; and the area required for off-street parking.¹⁸ Zoning ordinances may also include setbacks and other requirements for development. Zoning changes must be consistent with the comprehensive plan land use designations. Zoning change criteria in the comprehensive plan and zoning ordinance used to evaluate zoning change proposals that address critical areas should be reviewed for consistency with critical areas requirements.

In urban areas counties and cities should consider increasing densities to promote infill and redevelopment to minimize the need for future urban growth area expansions. In rural areas, counties should ensure permitted densities do not exceed the availability of water or impact fish and wildlife habitat. WDFW provides guidance¹⁹ that describes various species' expected ability to persist at various densities. As zoning for increased density is contemplated, local jurisdictions can use this information to understand likely impacts to local populations of species.

The Eastern Washington Growth Management Hearings Board found that the critical areas ordinance is not the only regulation that serves to protect critical areas. The Board found a county's zoning districts, uses and densities, and development and design standards also specifically set environmental performance standards. Because the critical areas ordinance did not address impervious surfaces or stormwater runoff, these aspects of environmental protection were left to other development regulations.²⁰

¹⁷ *Overton et al. v. Mason County*, 05-2-0009c, FDO, November 14, 2005.

¹⁸ RCW 36.70.750

¹⁹ *Landscape Planning for Washington's Wildlife: Managing for Biodiversity in Developing Areas*, 2009, <https://wdfw.wa.gov/publications/00023/>

²⁰ *Larson Beach/Wagenman v. Stevens County*, 07-1-0013, FDO at 47 (Oct. 6, 2008), pp 49 - 50.

Subdivision Ordinance

Subdivision ordinances regulate the manner in which land is divided. Subdivision regulations can specify the configuration of lots, identify areas for critical area protection, and notify potential property buyers of critical area constraints. Local governments are required to adopt regulations governing the division of land. These regulations are required to conform to the requirements of Chapter 58.17 RCW. Subdivision ordinances are included in the definition of development regulations under GMA.²¹ With respect to critical areas, local governments are required to make written findings that address open space, stormwater, the availability of water, and waste disposal. Subdivisions may be denied based on the presence of wetlands or flood hazards.²²

Reviews of the critical areas regulations should include a review for consistency with any references to critical areas in the subdivision ordinance. Local governments should ensure that subdivision regulations don't permit lots to be created that require subsequent reasonable use exemptions or variances. Subdivision regulations should require that all lots contain an adequate building site outside of critical areas and critical area buffers. Examples of subdivision requirements for the protection of critical areas may include:

- Require delineation of the boundaries of buffers for wetlands, riparian areas, fish and wildlife habitat, and geologically hazardous areas.
- Prohibit the creation of lots that are entirely constrained by critical areas or their buffers.
- Include a disclosure on the face of the plat advising property owners and potential buyers that critical areas are present and that properties may be subject to additional regulations and permitting requirements.
- Provide information on required flood elevations and construction standards.
- Use clustered development patterns, or permanently reserve open space tracts for critical areas protection.

The City of Bonney Lake tied the subdivision code to their critical areas regulations in the last update to the regulations.²³ It requires that all divisions of land comply with the requirements of the Title 16, Critical Areas. All undevelopable critical areas must be placed in a separate tract owned in common by the lots within the subdivision or short plat, and an easement provided for permanent city access to monitor the critical area.

Clearing and Grading Ordinance

Clearing and grading activities that precede land development can impact landscape and infrastructure in a number of ways, including increased erosion and sedimentation, increased airborne dust, mobilization and transport of contaminants, reduced slope stability, increased soil compaction, damage

²¹ RCW 36.70A.030(7).

²² RCW 58.17.110(2)

²³ See Bonney Lake [17.50.040](http://www.codepublishing.com/WA/BonneyLake/html/BonneyLake17/BonneyLake1750.html#17.50.040), <http://www.codepublishing.com/WA/BonneyLake/html/BonneyLake17/BonneyLake1750.html#17.50.040>

to sensitive and critical areas (e.g., loss of riparian vegetation), disruption of existing hydrologic patterns, and negative impacts to fisheries and aquatic life.

A number of counties and cities in Washington have adopted either specific clearing and grading ordinances, or use stormwater management, protection of trees and natural landscape or vegetation, stormwater ordinances, and critical areas ordinances to address land development impacts from clearing and grading. These regulations are intended to ensure that projects that are normally exempt from building and land use permit requirements are adequately reviewed. Most of these approaches seek to minimize the impacts from land disturbance through methods such as temporary erosion and sediment controls.

Onsite septic systems permitted by local health departments are an example of a land disturbing activity that is typically permitted in advance of building and land use permit approval. Septic systems can result in significant vegetation removal, grading, and modifications to natural hydrologic processes. Cities and counties should also be aware that health department regulations governing the construction of septic systems are focused on protecting human health and do not always adequately address critical areas.

If a county or city has clearing and grading regulations, then they should be reviewed for consistency with the critical areas regulations. If clearing and grading regulations are being used to protect critical areas, any updates to the regulations should review, and if necessary, revise for inclusion of the best available science. If local jurisdictions are not currently using clearing or grading regulations, they may wish to consider doing so in order to avoid any unintended consequences in relation to critical areas.

Preserving Buildable Land Capacity in Urban Growth Areas

A common concern is that protecting critical areas comes at the expense of meeting the goal to accommodate growth and provide sufficient land capacity suitable for development. Several techniques can be built into development regulations to allow for both protection of critical areas and the achievement of urban densities. Successful techniques include:

- Lot size averaging that allows the creation of smaller lots to compensate land area devoted to critical areas and allowing the same number of lots.²⁴
- Provisions for onsite density transfers of the allowable number of units lost to protect critical areas to be transferred and used on site in a number of other ways by adjusting density calculations. These are called buffer credits or density calculation provisions.²⁵ Planned unit development tools can also achieve the same goals.
- Buffer width averaging within the critical areas regulations can also provide additional design flexibility without compromising critical areas protections.²⁶ When using buffer width averaging,

²⁴ For an example of lot size averaging, see Snohomish County Code 30.23.210.

²⁵ MRSC lists several different examples of onsite density transfers here: <http://mrsc.org/Home/Explore-Topics/Environment/Special-Topics/Flexibility-in-Environmental-Regulation.aspx>.

²⁶ For guidance on wetland buffer width averaging, consult the Western Washington Wetland Rating System Appendix 8C.2.6, <https://fortress.wa.gov/ecy/publications/summarypages/1406029.html>

additional measures to improve critical area function (e.g., tree planting, invasive species removal) may be necessary to achieve no net loss.²⁷

- Permitting additional mixed use or residential development in commercial areas.
- Transfer of development rights from land outside the urban growth area to conserve critical areas in exchange for additional density within the urban growth area.
- Increasing densities and building heights in areas of the urban growth area where critical areas are not present.

Protecting Critical Areas and Listed Species

Federal and State Listed Species

Commerce’s WAC 365-190-130(2)(a) states that fish and wildlife habitat conservation areas that must be considered for classification and designation include “areas where endangered, threatened, and sensitive species have a primary association.” Species that are listed by either the state or federal governments are included in this definition. The federal government under the Endangered Species Act (ESA) lists species as either “endangered” or “threatened.” The Washington State Fish and Wildlife Commission lists animal species as “endangered,” “threatened,” or “sensitive”.²⁸ WDNR maintains a list of plant species using the same three categories.²⁹

The purpose of federal and state listing is to protect and recover imperiled species and the ecosystems upon which they depend. Under the ESA and state rules, “endangered” means a species is in danger of extinction throughout all or a significant portion of its range and “threatened” means a species is likely to become endangered within the foreseeable future. The state category of “sensitive” means that a species is vulnerable or declining and is likely to be listed as threatened or endangered.

When identifying fish and wildlife habitat conservation areas for listed species, local governments are encouraged to consult WDFW’s Priority Habitat and Species (PHS) Program and species recovery plans. PHS identifies “Priority Areas” for listed species that should be protected. State species recovery plans are ³⁰available on the [Washington State Species of Concern web page](#).³¹ Federal recovery plans are available on the US Fish and Wildlife Service’s (USFWS) [Environmental Conservation Online System web page](#).³² Counties and cities should not rely solely on federal designations of habitat under the ESA in designating fish and wildlife habitat conservation areas under the GMA.

The Eastern Washington Growth Management Hearings Board found that, under WAC 365–190–130(2), a county must classify and designate those areas where endangered, threatened, sensitive species have

²⁷ For example, regarding wetlands see Ecology’s Wetland Guidance for CAO Updates [Western Washington Version](#), page 13, and [Eastern Washington Version](#), page 13.

²⁸ WAC 220-610-110

²⁹ WDNR [Natural Heritage Program Species Lists](#), <https://www.dnr.wa.gov/NHPlists>

³⁰ WAC 365-190-130(4)

³¹ <https://wdfw.wa.gov/conservation/endangered/All/>

³² <https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed>

a primary association.³³ The Board cited Court of Appeals and Supreme Court decisions holding that the GMA directs counties to determine which lands are primarily associated with listed species, and then to adopt regulations protecting those lands.³⁴

In this 2014 Eastern Board case, the petitioners challenged the County’s election not to designate habitat for bull trout in part because there is no federally-designated “critical habitat” for the species in the County. The Board held that federal Endangered Species Act has different standards for designating habitat than the GMA. Thus, the absence of federally-designated critical habitat is not a determinative fact for purposes of a county’s GMA designation of areas where endangered, threatened, or sensitive species have a “primary association.” It went on to find substantial evidence in the record demonstrating that bull trout is present in Ferry County and has a primary association with certain areas of the County. Accordingly, the County’s failure to designate any bull trout habitat was not supported by substantial evidence in the record and represented a departure from best available science without any reasoned justification.

Protecting Species and Habitats of Local Importance

WAC 365-190-130(2)(b) provides that habitats and species of local importance, as determined locally, must be considered for designation as fish and wildlife habitat conservation areas. Section 4(b) says that PHS should be consulted when identifying habitats and species of local importance. In addition to listed species, PHS identifies priority species based on their vulnerability to land use actions (e.g., due to a tendency to aggregate, such as heron rookeries) and species of cultural significance (e.g., mule deer). PHS identifies priority habitats³⁵ based on their importance to sustaining fish and wildlife. While PHS reflects the priorities of WDFW, the species, habitats, and priority areas identified by PHS reflect best available science and should be reflected in local designations of fish and wildlife habitat conservation areas.

WDFW has identified the following important landscape and habitat features:

- Riparian areas and instream habitat;
- Wetlands;
- Deep water habitat;
- Shrub steppe;
- Oak woodlands;
- Prairies;
- Cliffs and talus; and
- Snags and decaying logs.

³³ *Concerned Friends of Ferry County v. Ferry County*, 97–1–0018c, Order Finding Continuing Noncompliance, (February 5, 2014).

³⁴ *Stevens County v. Futurewise*, 146 Wn. App. 512 (2008), rev. denied, *Stevens County v. Futurewise*, 165 Wn.2d 1038 (2009); *Ferry County v. Concerned Friends of Ferry County*, 155 Wn.2d 824, 837 – 839 (2005).

³⁵ <https://wdfw.wa.gov/conservation/phs/list/>

WDFW also recommends that local governments consider identifying “Bio-diversity Areas and Corridors” comprised of relatively intact vegetation, and corridors composed of unbroken or undisturbed tracts that connect critical areas.³⁶

In a Ferry County case, the Washington Supreme Court affirmed that because Ferry County did not develop its own scientifically justified list of species of local importance, did not follow WDFW’s recommendation to protect PHS-identified Priority Habitats and Species, and did not provide justification for such a departure, it was in violation of the GMA.³⁷

Anadromous Fisheries – Roadmap to Salmon Recovery

Salmon, steelhead and trout are in the family Salmonidae, and referred to collectively as salmonids. Some salmonids are anadromous, meaning that they spawn in fresh water, but reside in both fresh water (including lakes, rivers, and streams, as well as wetlands) and salt water (including estuary and open ocean) environments for at least some portion of their lifetime. However, some species exhibit a higher propensity to reside wholly in fresh water.

Salmon species in the state of Washington that are currently listed under the federal ESA are on the USFWS’ [Environmental Conservation Online System web page](#).³⁸ The [Recreation and Conservation Office website](#)³⁹ provides listed salmon by Salmon Recovery Region and affected counties. For salmonid populations to achieve recovery and ultimately a delisting, the ESA requires the federal government to develop recovery plans. The ESA is concerned with the extinction risk faced by an entire evolutionary significant unit (ESU) that is defined by regional geographic extent and genetic differentiation. Therefore, NOAA-Fisheries has determined that recovery plans need to be prepared at an ESU scale, or regional basis.

In Washington state, [Regional Salmon Recovery Organizations](#)⁴⁰ have been formed to coordinate the development and implementation of regional salmon recovery plans. Recovery plans are a resource for local planners regarding listed salmonids and priority habitat recommendations in their regions. Recovery plans include watershed profiles, as well as lead entity strategies.

WDFW’s SCoRE ([Salmon Conservation Recovery Engine](#)⁴¹) provides access to up-to-date information about salmon population status statewide and key information related to salmon species, recovery, hatcheries, habitat, and harvest.

Another key resource for local planners is [Land Use Planning for Salmon, Steelhead and Trout](#)⁴², published by WDFW to help integrate local land use planning programs and state salmonid recovery efforts. The scope of this guidance is to provide technical assistance to protect salmonid habitat through

³⁶ [Priority Habitats](https://wdfw.wa.gov/conservation/phs/list/2008/2008-sept_terrestrial_habitats.pdf), https://wdfw.wa.gov/conservation/phs/list/2008/2008-sept_terrestrial_habitats.pdf

³⁷ *Ferry Co. v. Concerned Friends of Ferry County*, 155 Wn.2d 824, 837 – 839 (2005).

³⁸ <https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed>

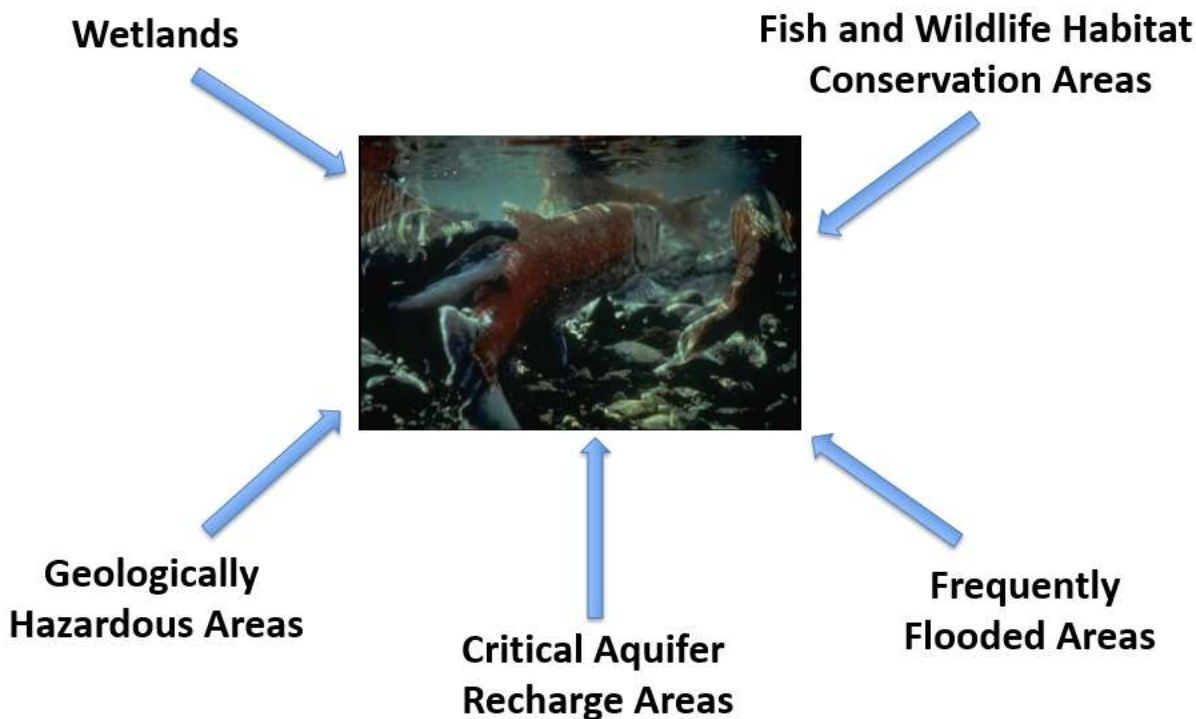
³⁹ https://www.rco.wa.gov/salmon_recovery/listed_species.shtml

⁴⁰ https://www.rco.wa.gov/salmon_recovery/regions/regional_orgs.shtml

⁴¹ <https://fortress.wa.gov/dfw/score/score/recovery/recovery.jsp>

⁴² Knight, K. 2009. *Land Use Planning for Salmon, Steelhead and Trout*. Washington Department of Fish and Wildlife. Olympia, Washington. <https://wdfw.wa.gov/publications/pub.php?id=00033>

GMA plans and regulations, including critical area ordinances. This guidance document translates existing science into planning tools, including model policies and regulations that can be incorporated into GMA and Shoreline Management Act (SMA) planning programs to protect salmonids and prevent further loss or degradation of habitat. The document is also a desk reference for salmonid planning in Washington state as it includes numerous sources of planning and scientific resources.



Each type of critical area defined under the GMA either provides critical habitat or has the potential for contributing to habitat conditions needed to conserve or protect anadromous fisheries. In addition to reviewing salmon recovery plans, planners will want to consider the following resources.

Wetlands

Wetland buffers protect water quality and flow regime, and provide habitat structure and a source of food for fish. Ecology's 2014 updated wetlands rating system guidance for [Eastern](#) and [Western](#) Washington discusses the influence of forested wetlands.⁴³ They influence channel form, and create pools, riffles, and side channels that are essential habitat for many fish and other aquatic species. The guidance also notes that wetlands with streams running through them in the Puget Sound area and on the Columbia River will probably provide habitat for one or more species of threatened or endangered fish.

⁴³ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations/Local-regulations>

Wetlands associated with streams are identified as a priority habitat by WDFW for salmonids in every county in the state.⁴⁴ Wetlands and associated vegetation provide essential off-channel habitat to sustain young salmonid growth and protect them from predators. Wetland habitat also hosts amphibious species and insects that are potential food sources for salmonids. Wetlands moderate stream flows by preserving adequate water recharge to streams during low flow periods and protect rearing salmonids from the effects of high flows. Consequently, WDFW recommends adhering to Ecology guidance for identifying, classifying and protecting wetlands.⁴⁵

Fish and Wildlife Habitat Conservation Areas

Maintaining riparian ecosystem connectivity and the quality and quantity of riparian vegetation are key to functioning salmonid habitat. Counties and cities may use information prepared by the U.S. Fish and Wildlife Service, NOAA-Fisheries, the WDFW, the State Recreation and Conservation Office (RCO), and the Puget Sound Partnership to designate, protect, and restore salmonid habitat.⁴⁶ Counties and cities should consider recommendations found in salmon recovery plans. As previously noted, the [Governor's Salmon Recovery Office and RCO](#) website provides links to the recovery plans, monitoring efforts, policies, and the lead entities that coordinate salmon recovery locally.⁴⁷ WDFW's [Land Use Planning for Salmon, Steelhead and Trout](#)⁴⁸ provides guidance for counties and cities to protect and restore salmonid habitat.

[Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications](#)⁴⁹ is a partial update of an earlier document entitled *Management Recommendations for Washington Priority Habitats: Riparian* (Knutson and Naef, 1997). [Volume 2](#)⁵⁰ of that document is WDFW's draft management recommendations to inform local government decisions related to riparian ecosystems and aquatic resources, and is expected to be finalized in the fall of 2018.

Commerce Minimum Guidelines provide guidance for addressing "waters of the state" as fish and wildlife habitat conservation areas.⁵¹ Also, the GMA requires that "where applicable, the land use element shall review drainage, flooding, and storm water run-off in the area and nearby jurisdictions and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound."⁵² Water quality, water quantity, and water temperature are all related and all vital to supporting anadromous fish habitat.

⁴⁴ WDFW [Priority Habitats and Species List](#).

⁴⁵ WDFW [Land Use Planning for Salmon, Steelhead and Trout](#), page 55.

⁴⁶ WAC 365-190-130(4)(i)

⁴⁷ https://www.rco.wa.gov/salmon_recovery/gfro.shtml

⁴⁸ <https://wdfw.wa.gov/publications/00033/>

⁴⁹ <https://wdfw.wa.gov/publications/01987/>

⁵⁰ See <https://wdfw.wa.gov/publications/01988/> for the public review draft of *Riparian Ecosystems, Volume 2: Management Recommendations*. The final document will be posted to this site.

⁵¹ WAC 365-190-130(2)(f)

⁵² RCW 36.70A.070(1)

Frequently Flooded Areas

Historic losses to salmon habitat have occurred as a result of development encroaching into floodplains. Floodplains are also ideal locations for salmon habitat restoration. While floodplains are potentially hazardous areas for development due to flooding and erosion, fish and wildlife depend on the habitat created when a river is allowed to migrate and overflow its banks. Natural floodplains, channel migration zones, and associated riparian wetlands are critical components of a properly functioning aquatic ecosystem.

Increasingly, there is recognition of the importance of floodplains as vital habitat to support salmon and other species. Relevant information may be found in updates to salmon recovery plans, channel migration zone mapping or other sources. These sources should be considered in development of revised critical areas ordinances provisions that better protect riparian habitat. These protections may be addressed under frequently flooded area provisions or within the fish and wildlife habitat conservation area provisions of critical areas ordinances.

For more information on protecting frequently flooded areas for salmon, see the WDFW's [*Land Use Planning for Salmon, Steelhead and Trout: A land use planner's guide to salmonid habitat protection and recovery*](#).⁵³

FEMA Guidance on National Marine Fisheries Service Puget Sound Biological Opinion

Most cities and counties in Washington participate in the National Flood Insurance Program (NFIP), a federal program that makes flood insurance available to individual property owners. In order to make flood insurance available within its jurisdiction, a community must adopt and enforce a minimum set of floodplain development standards established in 44 CFR 60.3 and Chapter 86.16 RCW. Most of the minimum standards relate to building design and construction. However, NFIP regulatory implementation needs to meet federal Endangered Species Act (ESA) requirements. While many communities adopt their NFIP related standards in a stand-alone code chapter, ESA related requirements can be integrated with critical areas requirements.

The National Marine Fisheries Service (NMFS) issued a [*Biological Opinion*](#) (BiOp) under the ESA on the NFIP in Puget Sound.⁵⁴ The BiOp was provided following consultation with FEMA regarding effects of NFIP on listed species within the Puget Sound Region – chinook salmon, Puget Sound steelhead, Hood Canal summer-run chum salmon, and Southern Resident killer whales. FEMA has the ultimate authority for determining the adequacy of BiOp compliance. FEMA has provided three options for local government compliance with the ESA:

- **Door #1: Model Ordinance approach** – This approach combines standard NFIP floodplain requirements with BiOp habitat protection requirements. FEMA guidance on Floodplain Management and the Endangered Species Act: A Model Ordinance (November 2013) for

⁵³ <https://wdfw.wa.gov/publications/00033/>

⁵⁴ https://www.fema.gov/media-library-data/20130726-1900-25045-9907/nfip_biological_opinion_puget_sound.pdf

developing a Door 1 program is posted on FEMA's [web site](#) Door 1 model ordinances must be approved by FEMA.⁵⁵

- **Door #2: Community Checklist/Programmatic approach** – This approach uses existing state requirements, such as GMA, SMA, drainage, and grading requirements adopted at the local level to provide flexibility, while meeting the minimum requirements for salmon in the BiOp. A critical areas ordinance that addresses the habitat concerns identified in the BiOp can support a Door 2 programmatic response. A community that uses Door 2 can implement the Puget Sound BiOp compliance through its own codes and procedures. A Checklist for Programmatic Compliance (November 2013) is also on the [FEMA web site](#).⁵⁶ Door 2 programs must be approved by FEMA.
- **Door #3: Permit by permit demonstration of compliance/Individual approach** - In 2013, FEMA provided updated guidance on how to prepare a habitat assessment, [Floodplain Habitat Assessment and Mitigation: Regional Guidance for the Puget Sound Basin](#).⁵⁷ Implementing the FEMA guidance will help local governments address compliance with the ESA BiOp. The critical areas regulation updates provide an opportunity for local governments to include or reference procedures for BiOp implementation in their floodplain management regulations or combined floodplain management regulations/critical areas regulations. This will help ensure that all staff and other parties are aware of these procedures required to comply with the BiOp.

Geologically Hazardous Areas

Geologically hazardous areas may affect salmonids in a variety of ways. Steep slopes along shorelines can include feeder bluffs that benefit salmon habitat by providing gravels, boulders, and sediment. However, erosion and mass wasting slide events overload streams with sediment in the short term. Seismic events can cause built objects to fall into streams, including pollutants such as chemicals and spilled fuels.

WDFW recommends local government seek to maintain sediment inputs into rivers at rates that are within the historic range of natural variability. This involves giving special protection to landslide hazard areas that can contribute sediment and large wood to rivers and streams during mass wasting events. It entails avoiding armoring within channel migration zones and marine bluffs and retaining vegetation and managing drainage on steep slopes. Such measures provide for more natural channel morphology and beach nourishment, and avoid elevated levels of suspended sediments and turbidity.⁵⁸

⁵⁵ https://www.fema.gov/media-library-data/1383597893424-4747f702310a2bbc7e04ea83d66f73f5/NFIP_ESA_Model_Ordinance.pdf

⁵⁶ https://www.fema.gov/media-library-data/1383597499829-c4d2a589c8ae1463357c1cac8d043ce7/NFIP_ESA_Biological_Opinion_Checklist.pdf

⁵⁷ https://www.fema.gov/media-library-data/1383598118060-e34756afe271d52a0498b3a00105c87b/Puget_Sound_R10_Habitat_Assess_guide.pdf

⁵⁸ WDFW [Land Use Planning for Salmon, Steelhead and Trout](#), page 75. (<https://wdfw.wa.gov/publications/pub.php?id=00033>)

Critical Aquifer Recharge Areas

Some aquifers may also have critical recharging effects on streams, lakes, and wetlands that provide critical fish and wildlife habitat. Protecting adequate recharge of these aquifers may provide additional benefits in maintaining fish and wildlife habitat conservation areas.⁵⁹

Critical aquifer recharge areas contribute to groundwater quality and in-stream flow. While critical aquifer recharge areas are designated and protected to ensure availability of potable water, the ground water resource also interacts with surface water. Both discharge and recharge areas help to cool summer daytime temperatures and provide year round habitat for invertebrates, and important salmonid food sources.

Incentives for Protection and Restoration

The GMA requires counties and cities to protect the functions and values of critical areas through regulations. Incentives are another tool in the tool box for protection, and for restoration. Local governments are encouraged to adopt incentive programs in addition to their critical area regulations.

Incentives for protection and restoration are addressed more broadly and comprehensively in Chapter 6. Incentives specific to salmon recovery include:

- Grant programs for riparian habitat conservation and restoration projects on public and private lands through the [Recreation and Conservation Office](#)⁶⁰ and Salmon Recovery Funding Board, and [WDFW](#)⁶¹.
- Use of transfer or purchase of development rights or other conservation easement programs to encourage retention of appropriate agriculture, forestry, and open space uses of the floodplain and infill of urban lands. Commerce provides links to TDR programs around Puget Sound on the [Regional Transfer of Development Rights web site](#).⁶²
- [Voluntary Stewardship Program](#)⁶³ managed by the Washington State Conservation Commission for agricultural activities in participating counties. Also see Chapter 5, Critical Areas and Natural Resource Lands for more discussion of this program.
- Participate in state and federal conservation incentive programs (See Chapter 6 for a full list).
- [Local land trusts](#)⁶⁴ that can help landowners conserve their property, often leveraging funds from foundations and other non-government sources.
- Public Benefit Rating System Open Space Tax Program (RCW 84.34.055) to allow property owners a tax incentive to protect critical salmonid habitat on their property.
- Conservation Futures tax levy (RCW 84.34.230) to secure funds for acquisition or restoration of critical salmonid habitat.

⁵⁹ WAC 364-190-100(4)(c)

⁶⁰ <https://www.rco.wa.gov/grants/index.shtml>

⁶¹ <https://wdfw.wa.gov/grants/>

⁶² <http://www.commerce.wa.gov/serving-communities/growth-management/growth-management-topics/development-rights/>

⁶³ <http://scc.wa.gov/vsp/>

⁶⁴ <https://walandtrusts.org/>

- Coordinate with landowner incentive programs (local, state and federal), including Farm Bill and Lead Entity identified restoration sites and other watershed mitigation and restoration efforts. Ecology's [Puget Sound Watershed Characterization Project](#)⁶⁵ provides a tool that allows planners and resource managers to identify the most important areas to protect and restore watershed resources, and areas more suitable for development. WDFW has collaborated with seven counties to develop [Local Habitat Assessments](#)⁶⁶ to inform local planning initiatives.
- Direct mitigation, including off-site and compensatory mitigation, towards critical habitat areas and recovery needs for salmon.
- Incentives to encourage redevelopment activities to include salmonid habitat restoration where shorelines have been modified.
- Removal and control of noxious weeds in shoreline areas, and replacement with native species in consultation with local conservation districts.
- Participation in off-site mitigation programs, when habitat impacts cannot be mitigated on-site, to prevent habitat loss in a sub-basin. Off-site mitigation programs should be limited to the sub-basin and be consistent with watershed and salmon recovery plan priorities.

Critical Areas and the Clean Water Act

Stormwater Regulations – National Pollutant Discharge Elimination System

Stormwater is rain water that runs off surfaces such as rooftops, paved streets, highways, and parking lots. As stormwater runs off these surfaces, it picks up pollution such as oil, fertilizers, pesticides, pet waste, and trash and carries this pollution into our lakes, streams, rivers, and bays. Polluted runoff that goes into a storm drain is usually not treated and winds up in our downstream waters.

In 1987, Congress changed the Clean Water Act to include stormwater discharges in the National Pollutant Discharge Elimination System (NPDES) permit program. The U.S. Environmental Protection Agency (EPA) developed rules to implement the new stormwater requirements. Ecology implements these stormwater rules through the Construction and Municipal Stormwater Permits. The Construction General Permit requires the development of a Stormwater Water Pollution Prevention Plan and implementation of stormwater management best management practices (BMPs) during the construction phase of large projects.

The [Municipal Stormwater Permit](#) requires implementation of stormwater management programs for the public stormwater systems. The Municipal Stormwater Permits were issued in two phases based on population served by the public stormwater system:

- 1990: Phase I permit covers jurisdictions, such as cities and counties, serving more than 100,000 people. This includes the cities of Seattle and Tacoma; unincorporated King, Pierce, Snohomish, and Clark counties; and the ports of Seattle and Tacoma.

⁶⁵ <https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Watershed-characterization-project>

⁶⁶ <https://wdfw.wa.gov/conservation/habitat/planning/lha/>

- 1999: Phase II permit covers smaller, urbanized, jurisdictions serving less than 100,000. Phase II requires permits for cities and counties located within census-defined urbanized areas and cities with populations more than 10,000 outside of these areas. The areas covered by the permit include the entire incorporated area of a city. For Phase II counties, the permit covers the census-defined urbanized areas and urban growth areas (as defined by the GMA) that extend outside of a city.⁶⁷

Ecology issued the first Washington State Phase I permit in 1995, and the first Phase II permit in 2007. There are separate Phase II permits for eastern and western Washington. The permits are reissued every five years.⁶⁸

EPA rules also require permits for public districts that own or operate a separate storm sewer system in Phase I and Phase II areas. Examples of these districts are ports, diking and drainage districts, public universities, flood control districts, prison complexes, and parks and recreation districts. These districts are also called secondary permittees. A separate general permit covers the Washington State Department of Transportation.

For both Phase I and Phase II jurisdictions, the EPA rules require operators of municipal separate storm sewer systems (MS4s) to develop and implement a stormwater management program that:

- Reduces the discharge of pollutants to the “maximum extent practicable.”
- Protects water quality.

A stormwater management program involves planning, public education and involvement, illicit discharge detection programs, and adopting appropriate ordinances to reduce stormwater pollution. The Minimum Requirements in Appendix 1 include requirements for clearing and grading and post-construction activities that are designed to minimize impacts to critical areas. For example, critical or sensitive areas, buffers, native growth protection easements, or tree retention areas as may be required by local jurisdictions, must be delineated on site plans and the development site under the construction stormwater pollution prevention plan (SWPPP).⁶⁹ The SWPPP must also include seasonal work limitations, vegetation preservation and clearing limits, limitations on construction access, stormwater retention facilities for stormwater runoff from the construction site, sediment discharge controls, and soil stabilization. Direct and indirect impacts to wetlands from the proposed development must also be considered when determining the needed BMPs.

Ecology has also published [stormwater management manuals](#) for both western and eastern Washington. These manuals provide the technical guidance needed to manage stormwater runoff.⁷⁰ These extensive manuals are available in both a traditional document style and in a web-based format that is interactive and easy to navigate on a variety of platforms.

⁶⁷ For more information about the Phase I and Phase II permits, see <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits>.

⁶⁸ For more information on the permit reissuance process, go to [Municipal stormwater permit reissuance, https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-stormwater-permit-reissuance](https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-stormwater-permit-reissuance)

⁶⁹ See Section 4, Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan

⁷⁰ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

Stormwater and Critical Areas Regulations

Stormwater permits used to be more narrowly focused on managing stormwater from development by conveying, storing, and treating using structural methods. In recent years the focus of the municipal stormwater permit requirements has shifted to maintaining natural hydrologic processes, minimizing stormwater impacts, and using non-structural methods to manage runoff. Because of these changes, it is more critical than ever to consider NPDES permitting requirements when reviewing critical areas regulations and land use plans.

Stormwater management practices that treat stormwater runoff on site and mimic natural processes help address or manage impacts to critical areas. These practices treat runoff pollution and reduce flows that can impact the functions and values of critical areas such as wetlands. Critical areas regulations should include guidance on locating/siting stormwater best management practices to ensure that the functions and values of critical areas and their buffers are not adversely impacted.

Relying on the stormwater management regulations associated with the Municipal Stormwater Permit does not take the place of good land use planning. Stormwater BMPs can be applied to areas outside of permit coverage in order to provide protection to critical areas from stormwater impacts associated with development.

The Western Washington Growth Management Hearings Board noted that the question of reliance on stormwater regulations for protection of critical areas functions and values had come before the Board in several recent decisions. The Division II Court of Appeals set the standard in *WEAN v. Island County*, 122 Wn.App. 156, 180, 93 P.3d 885 (2004), stating that if a local government relies substantially on preexisting regulations to satisfy its obligations under RCW 36.70A.172, then “those regulations must be subject to the applicable critical areas analysis to ensure compliance with the GMA.”

Low Impact Development

Phase I and Phase II permittees under the municipal stormwater permit are now required to include low impact development (LID) provisions in their development regulations, with the intent of making LID the “preferred and commonly-used approach to site development.” The deadline for this requirement was December 2016. The Department of Ecology provides training and [Low Impact Development Guidance](#).⁷¹

Municipal stormwater permittees were required to review all development-related codes, rules, standards or other enforceable documents to incorporate and require LID principles and LID BMPs, which are defined as:

LID Principles means land use management strategies that emphasize conservation, use of on-site natural features, and site planning to minimize impervious surfaces, native vegetation loss, and stormwater runoff.

⁷¹ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Low-Impact-Development-guidance>

Low Impact Development Best Management Practices means distributed stormwater management practices, integrated into a project design, that emphasize pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration. LID BMPs include, but are not limited to, bioretention, rain gardens, permeable pavements, roof downspout controls, dispersion, soil quality and depth, vegetated roofs, minimum excavation foundations, and water re-use.

Jurisdictions not currently covered by the Municipal or Construction Stormwater Permits can choose to apply LID and stormwater management techniques and BMPs to protect critical areas. These techniques can be applied as conditions of approval for land use and development-related permits.

Wetlands under the Clean Water Act and Other State Laws

In general, the state emphasizes a local approach to wetland protection and regulation under the GMA. Ecology plays an advisory role by providing comments during critical areas regulation updates, and offering technical assistance. However, Ecology also has regulatory authority to protect and manage wetlands through the state Water Pollution Control Act⁷² and the Shoreline Management Act. Ecology also uses the State Environmental Policy Act (SEPA) process to identify potential wetland-related concerns early in the permitting process.

The federal Clean Water Act enables states to approve, condition, or deny projects proposed in waters of the United States – including wetlands – when a federal permit is needed. Ecology’s issuance of a [Section 401 Water Quality Certification](#)⁷³ under the federal Clean Water Act means that Ecology has reasonable assurance that an applicant’s project will comply with state water quality standards and other requirements for protecting aquatic resources. Ecology regional [wetlands staff review](#)⁷⁴ applications for projects that have the potential to impact wetlands and other “waters of the state.”

Critical Areas and the Shoreline Management Act

The Shoreline Management Act (SMA) applies to all marine waters, lakes over 20 acres, and larger streams⁷⁵, as well as a 200-foot wide upland area (“shorelands”), associated wetlands and all or portions of floodplains. The goals and policies of the SMA as set forth in RCW 90.58.020 are the fourteenth goal of the GMA. The goals and policies of a shoreline master program (SMP) for a county or city, approved by Ecology under Chapter 90.58 RCW, are considered an element of the comprehensive plan. All other portions of the Shoreline Master Program (SMP), including use regulations, are considered a part of a county or city’s development regulations.⁷⁶

⁷² [Chapter 90.48 RCW](#)

⁷³ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/401-Water-quality-certification/non-hydropower-401-certifications>

⁷⁴ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Tools-resources/Contacts-by-subject-region>

⁷⁵ Streams over 20 cubic feet per second mean annual flow.

⁷⁶ RCW 36.70A.480, and WAC 365-196-580

The SMA requires local governments to plan for preferred uses of the shoreline (such as water-dependent uses, single family homes, and public access) while also protecting the environment. Ecology adopted rules in 2003 based on a negotiated settlement that require SMP regulations to assure “no net loss of ecological functions necessary to sustain shoreline natural resources.” This is accomplished in each SMP through a combination of environment designations (shoreline-specific zoning overlays), detailed regulations for specific uses and shoreline modifications, careful mitigation sequencing, and critical area protections (either adopted by reference or developed for unique shoreline circumstances).⁷⁷

Critical areas regulations adopted under the GMA apply in shoreline jurisdiction until Ecology approves a comprehensive SMP update consistent with the 2003 SMP Guidelines (Chapter 173-26 WAC).⁷⁸ However, as part of the comprehensive SMP update many jurisdictions have adopted their GMA critical areas regulations by reference. During the comprehensive SMP update process, local governments and Ecology address the distinct substantive and procedural differences between critical areas regulations and shoreline regulations.

The SMA also requires periodic reviews of the SMP every eight years on an alternate schedule to that of the GMA (2019 – 2022 and every eight years thereafter).⁷⁹ Ecology rules clarify the review includes a requirement to amend SMPs for consistency with changed laws and rules, and to consider changed circumstances, new information, or improved data.

The SMA establishes a cooperative program between local governments and the state. Like under GMA, Ecology and other state agencies are directed to provide technical assistance. However, the state has a much stronger role under the SMA.⁸⁰ After local governments adopt SMPs, Ecology must approve them before they are effective.⁸¹ If an SMP that has been approved by Ecology is appealed, Ecology joins in the appeal as a co-defendant with the local government. Ecology also has an ongoing oversight role in shoreline permitting. Ecology has final approval authority over all locally-issued conditional use permits and variances in shorelines.

Inclusion/Use of Science and No Net Loss

The SMA has a provision similar to the inclusion of best available science to protect critical areas functions and values. Local governments must use a systematic interdisciplinary approach; consult with relevant agencies; and use all available information regarding hydrology, geography, topography, ecology, economics, and other pertinent data.⁸² The SMP Guidelines require use of “the most current, accurate and complete scientific and technical information available.”⁸³ As clarified by the Central Puget Sound Growth Management Hearings Board, “The SMA process does incorporate the use of scientific

⁷⁷ WAC 173-26-201(2)(c)

⁷⁸ RCW 36.70A.480(3)

⁷⁹ RCW 90.58.080(4)(b)

⁸⁰ *Citizens for Rational Shoreline Planning v. Whatcom County*, 155 Wn. App. 937, 943 (2010).

⁸¹ RCW 90.59.090

⁸² RCW 90.58.100

⁸³ WAC 173-26-201(2)(a)

information, but it does so as part of the process of balancing a range of considerations such as public access, priority uses, and the development goals and aspirations of the community.”⁸⁴

Consistent with the GMA requirement to protect existing functions and values (the “no harm” standard⁸⁵), the object of “no net loss” requirements is to halt the introduction of new impacts from new development. Regulations may not require mitigation in excess of that required to achieve no net loss. To achieve restoration of functions above the baseline of current conditions, local governments prepare restoration plans that identify voluntary opportunities. SMPs may also include incentive-based approaches to accomplish restoration.

Critical Areas and the State Environmental Policy Act

Consideration of environmental factors when making informed planning decisions is the foundation of the State Environmental Policy Act (SEPA). Non-project environmental review at the time the comprehensive plan and development regulations are adopted or amended allows a jurisdiction to analyze impacts and determine mitigation systemwide, rather than project-by-project. This allows cumulative impacts to be identified and addressed, and provides a more consistent framework for future permit review.⁸⁶ Integration of a well-documented SEPA process contributes to general public knowledge, environmental protection, and fiscal efficiency for local government services.

Non-project proposals follow the same procedural requirements under SEPA as project proposals. However, environmental review of an amendment to the critical areas regulations should be used to address the cumulative impacts not addressed in project proposals. The more specific the analysis is at this level, the less environmental review will be needed when a project permit application is submitted. Section D of the SEPA checklist should be used for non-project actions.⁸⁷

Benefits to this approach include:

- A more predictable future for the community.
- A better understanding of the capacity of the built and natural environment and the cumulative impacts of planned development community-wide, increasing the potential for protection of environmental values.
- Efficient use of public funds for the provision of public facilities, infrastructure, and services.
- A decrease in the time and cost associated with obtaining permit approval for appropriate projects in suitable locations resulting from early decisions on land use, services, and mitigation strategies.

SEPA documents, developed in conjunction with plan policies, regulations, or incentive programs, and that include a checklist or an EIS, are a good place to list the scientific sources of information that are relied upon in establishing the management standards for critical areas. However, SEPA cannot

⁸⁴ *Lake Burien Neighborhood, et. al, v City of Burien and Department of Ecology*, 13,3-0012 (6/16/2014)

⁸⁵ *Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board*, 161 Wn.2d 415 (2007).

⁸⁶ See Ecology’s [State Environmental Policy Handbook](#), Publication Number 98-114, Published September 1998 and Revised January 2204.

⁸⁷ For more information, go to [SEPA checklist guidance, Section D: Nonproject actions](#).

substitute for critical areas regulations because of the many exemptions in SEPA and the lack of specific standards.

Critical Areas and Groundwater Protection

Planning Responsibility for Groundwater Protection

Protection of critical aquifer recharge areas is not only a critical areas protection responsibility under GMA, it is a fundamental planning responsibility for local governments under the Planning Commission and Planning Enabling Acts. RCW 35.63.090 states that the local jurisdiction's comprehensive plan "shall be designed...to facilitate the adequate provision of...water...including protection of the quality and quantity of groundwater used for public water supplies." This applies to all non-code cities and towns, regardless of whether they are fully or partially planning under the GMA.

Both RCW 35A.63.061(1) and RCW 36.70.330(1) state that the local jurisdiction's land use element within its comprehensive plan "shall...provide for protection of the quality and quantity of groundwater used for public water supplies." This applies to all code cities and counties.

RCW 36.70A.070(1) requires that the land use element of the comprehensive plan "provide for protection of the quality and quantity of groundwater used for public water supplies." An additional requirement for Puget Sound counties and cities states:

Where applicable, the land use element shall review drainage, flooding, and storm water run-off in the area and nearby jurisdictions and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound.

Many local comprehensive plans tend to focus on water availability to serve growth. Protection of both ground and surface water resources is not only a foundation of planning, but is also within both state and local jurisdictions' fundamental purview. Furthermore, RCW 35.88.010 invests broad authority in cities and towns as related to protecting water sources:

For the purpose of protecting the water furnished to the inhabitants of cities and towns from pollution, cities and towns are given jurisdiction over all property occupied by the works, reservoirs, systems, springs, branches and pipes, by means of which, and of all the lakes, rivers, springs, streams, creeks, or tributaries constituting the sources of supply from which the cities and towns or the companies or individuals furnishing water to the inhabitants thereof obtain their supply of water, or store or conduct it, and over all property acquired for any of the foregoing works or purposes or for the preservation and protection of the purity of the water supply, and over all property within the areas draining into the lakes, rivers, springs, streams, creeks, or tributaries constituting the sources of supply whether they or any of them are within the city or town limits or outside.

Finally, RCW 90.54.140 makes aquifer protection an “uppermost priority” of state as well as local governments:

The legislature hereby declares that the protection of groundwater aquifers which are the sole drinking water source for a given jurisdiction shall be of the uppermost priority of the state department of ecology, department of social and health services, and all local government agencies with jurisdiction over such areas. In administration of programs related to the disposal of wastes and other practices which may impact such water quality, the department of ecology, department of social and health services, and such affected local agencies shall explore all possible measures for the protection of the aquifer, including any appropriate incentives, penalties, or other measures designed to bring about practices which provide for the least impact on the quality of the groundwater.⁸⁸

State Requirements for Protecting Groundwater

State Pollution Control Act

The State Pollution Control Act, Chapter 90.48 RCW, prohibits pollution of waters of the state, which include “underground waters.” The State Ground Water Quality Standards, Chapter 173-200 WAC, establish groundwater quality standards. Those standards, together with the state's technology-based treatment requirements, provide for the protection of the environment and human health and protection of existing and future beneficial uses of groundwater.

Ecology implements the Ground Water Quality Standards through State Waste Discharge Permits that control wastewater discharge to the ground to protect groundwater quality. Ecology's [Implementation Guidance for the Ground Water Quality Standards](#)⁸⁹ details how the standards are implemented. Local jurisdictions may adopt state groundwater protection laws and rules by reference.⁹⁰ Local jurisdictions should adopt these state laws and rules for authority to prevent groundwater contamination and to require correction where necessary. This should include an enforcement policy and mechanism to implement it. The Ground Water Quality Standards have provisions for establishing Special Protection Areas.

Groundwater Management Areas

State statute also provides for the establishment of ground water management areas.⁹¹ RCW 90.44.400 directs Ecology to adopt standards, criteria, and a process for the designation of specific groundwater management areas or subareas.

⁸⁸ References to the Department of Social and Health Services date to a time when state environmental health functions resided within that agency; the statute has not been updated. Today, such programs are within the Department of Health.

⁸⁹ <https://fortress.wa.gov/ecy/publications/SummaryPages/9602.html>

⁹⁰ Chapter 35.21 RCW

⁹¹ RCW 90.44.400 and Chapter 173-100 WAC

Underground Injection Control Wells

The Safe Drinking Water Act of 1974 created the Underground Injection Control (UIC) Program to protect drinking water sources from contamination. Washington received primacy from EPA to administer the UIC Program in 1984. EPA organizes UIC wells into six classifications. In Washington, the majority of classifications are prohibited.⁹² Class V wells are the predominant UIC well type used in Washington, and they are mainly used to manage stormwater. Discharges from UIC wells also have to meet the Ground Water Quality Standards at the top of the water table.

The Ground Water Quality Standards and the UIC rule require that all discharges are provided with all known, available, and reasonable methods of prevention, control, and treatment (AKART)⁹³, which include review to determine treatment and implementation of source control to reduce contaminants in the stormwater. UIC wells best management practices to meet AKART are described in Ecology's [Guidance for UIC Wells that Manage Stormwater \(UIC Guidance\)](#)⁹⁴, and Ecology's NPDES [Stormwater Management Manuals for Eastern and Western Washington](#)⁹⁵. The UIC Guidance will be updated and incorporated into both of Ecology's stormwater manuals as part of the current manual revision process.

Critical Areas and State Hazard Mitigation Planning

The Washington State Enhanced Hazard Mitigation (SEHMP) Plan, developed by Washington Emergency Management (EMD), profiles natural and man-made hazards, identifies risks and vulnerabilities, and proposes strategies and actions to reduce risks to people, property, the economy, the environment, infrastructure, and first responders. Most local jurisdictions, cities, towns, counties, tribes, and many special districts, develop local hazard mitigation plans to complement the state plan. These plans are required by FEMA under 44 CFR parts 201.4 and 201.5 to keep the state, as well as all eligible local jurisdictions, qualified to obtain disaster assistance, including hazard mitigation grants. The enhanced portion of the plan allows the state to seek significantly higher funding following presidentially-declared disasters (20 percent of federal disaster expenditures versus 15 percent with a standard plan.)

Local hazard mitigation plans are updated every five years through a process that includes stakeholder engagement, robust public outreach, risk and vulnerability identification, and mitigation strategy development. The local emergency management agency usually leads this effort in coordination with public works, community development, and others.

A key mitigation strategy for many local jurisdictions is risk prevention or avoidance through land use decisions that consider natural hazard risk. A community's critical areas regulations, zoning code, floodplain regulations, and other related codes and regulations are essential elements of a strong risk prevention, or regulatory mitigation, strategy. The updated risk assessment from a local hazard

⁹² Chapter 173-218 WAC

⁹³ AKART, consistent with the NPDES stormwater program.

⁹⁴ <https://fortress.wa.gov/ecy/publications/SummaryPages/0510067.html>

⁹⁵ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

mitigation plan is also an essential source of best available science on frequently flooded and geologically hazardous areas.

The following table details areas of potential overlap and opportunities for local jurisdictions to coordinate mitigation planning, comprehensive planning, and the critical areas regulations. Under certain circumstances, planning grants may be available to help a community in this effort.

Crosswalk of Critical Areas, GMA, and Hazard Mitigation Planning										
FEMA Natural Hazard Mitigation Plan	Designate Critical Areas	Protect Critical Areas	Best Available Science	Periodic Update	Comprehensive Plan - Urban Growth Areas	Comprehensive Plan - Avoiding Conflicts	Comprehensive Plan - Land Use Element	Comprehensive Plans - Public Participation	WAC Implementation Plan	
A1										
A2										
A3										
A4										
A5										
A6										
B1										
B2										
B3										
C1										
C2										
C3										
C4										
C5										
C6										

Mitigation plans, comprehensive plans, and the critical areas regulations are most closely related through the planning process, risk and vulnerability assessment, and mitigation strategy implementation. The plans can be closely coordinated through:

- Coordinated development with intersecting processes to meet shared public and stakeholder engagement requirements.

- Risk identification elements and agreement on geologically hazardous and frequently flooded areas.
- The development and implementation of mitigation strategies, especially those pertaining to land use.
- [Hazard Mitigation Assistance Grants](#)⁹⁶ that can be used to support the joint updates of critical areas ordinances and hazard mitigation plans.

Improving coordination among these planning mechanisms is an important goal and mitigation strategy for the State Hazard Mitigation Plan. For more details on coordination between critical areas and hazard mitigation planning, please contact the State Hazard Mitigation Strategist at [Washington Emergency Management Division](#). For more general details on plan integration, please see FEMA’s guide on Integrating [Hazard Mitigation into the Comprehensive Plan](#).

Protecting Critical Areas in Already Urbanized Areas

Critical areas must be protected wherever they are found. However, the existing functions and values of critical areas in already urbanized areas can be different from rural areas. A key consideration for protecting critical areas is the extent to which the area has already been built out, such that they offer little or limited ecological function. Streamside vegetated areas may offer limited habitat value or be in need of restoration efforts. Wetlands may be degraded and provide limited functions. Frequently flooded areas may have structures built that are at risk from the next flood. Land uses involving potential pollutants that existed prior to today’s critical areas regulations may be situated over sensitive aquifer recharge areas.



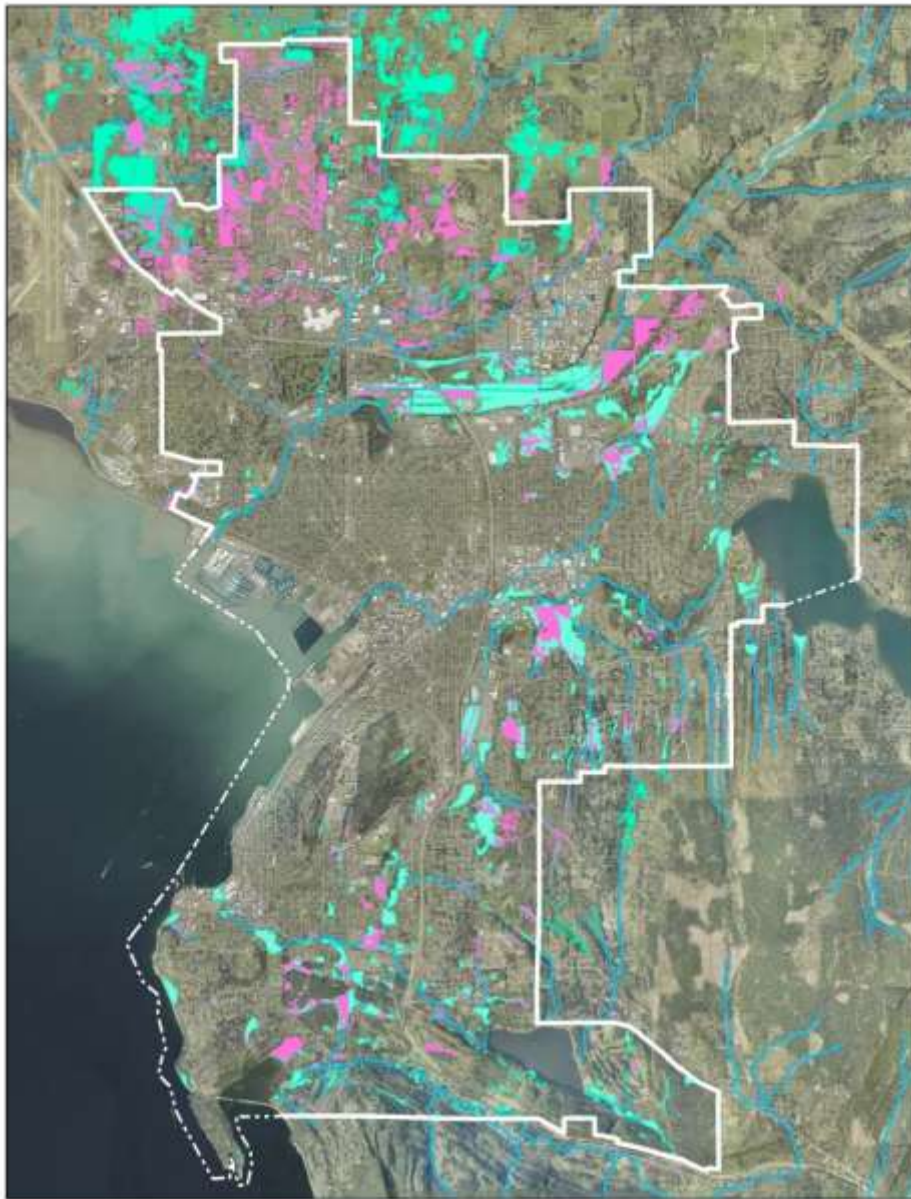
Photo courtesy of Paul Inghram

In already urbanized areas it is important to document the existing conditions of the critical areas to understand where opportunities may occur to protect whatever function currently exists. Many existing documents such as salmon recovery plans and shoreline restoration plans identify restoration

⁹⁶ <https://mil.wa.gov/emergency-management-division/grants/hazard-mitigation-grants>

opportunities to improve habitat over time using incentives or compensatory mitigation. Stormwater management is key to protecting critical areas in urbanizing areas, with special attention to low impact development techniques where feasible, so long as urban densities are still being achieved.

A critical area program that addresses such issues in a comprehensive way may be the best way to demonstrate “protection” is occurring. Consulting with a scientific expert or a team of experts may help with review of available inventories and assessments of local critical areas functions.



Bellingham Site-specific Wetland Delineations (pink)

Some jurisdictions have used the permit process to update mapping of critical areas. For example, the Cities of Bellingham and Tacoma digitize the location of wetlands delineated during the permit process.

“Protection” of habitat can also be realized through zoning techniques, such as clustering of buildings and open space corridor designations.⁹⁷ Other techniques previously noted in this chapter include lot size averaging, on-site density transfer (also called buffer credits or density calculation provisions), and critical area buffer width averaging.

For particularly dangerous areas, such as floodways, channel migration zones, and frequently flooded areas, the local jurisdiction could explore a buyout program. Federal funds may be available. Buyout programs protect human life and reduce flood damages over the long-term to avoid repeatedly damaged properties being rebuilt and damaged again. The buyout area can also become a park or greenway and provide increased buffers along rivers, streams, and other waterways even in built up areas. King and Pierce counties are examples of local governments that have successful buyout programs. Ecology is the state coordinating agency for the National Flood Insurance Program (NFIP) and can provide information about NFIP programs and funding programs.

Evaluating the functionality of a known critical area is a unique inquiry. For critical areas in urbanized or urbanizing areas, evaluating the type and function of a critical area that exists will offer the jurisdiction the ability to protect whatever critical area function is currently provided and identify opportunities for improving its function over time. Development standards can be designed to accomplish this, once the scientific information is developed and analyzed. The SEPA process should support this effort and identify the principal analytical documents and other materials used in developing the management recommendations and ordinance.

Common sources of “science” that should be relied upon are:

Assessment data developed through inspection and evaluation of site-specific information by a qualified scientific expert. An assessment may or may not involve collection of new data.

Inventory data collected from an entire population or population segment (e.g., individuals in a plant or animal species) or an entire ecosystem or ecosystem segment (e.g., the species in a particular wetland or pond).

Survey data collected from a statistical sample from a population or ecosystem.

Modeling data generated as a mathematical or symbolic simulation or representation of a natural system. Models generally are used to understand and explain occurrences that cannot be directly observed. Modeling methods should be peer reviewed.

Expert opinion helps the planner understand how the scientific information can be translated into management approaches or performance measures that eliminate risk to critical areas functions or values.

⁹⁷ RCW 36.70A.160 requires that fully planning jurisdictions identify open space corridors within and between urban growth areas that will be useful for recreation, wildlife habitat, trails, and connection of critical areas.

Protecting Wetlands in Urban Areas

Wetlands in urban areas may provide different functions than wetlands in rural areas. In particular, wetlands in urban areas may not provide the same type or degree of wildlife habitat, primarily due to isolation from other habitats. However, some urban wetlands may provide critical habitat for one or more species, such as amphibians and birds. Additionally, many urban wetlands provide important water quality or water quantity functions important to aquifer recharge and flood retention.

Protecting wetland functions in urban areas can best be accomplished by taking a comprehensive approach that includes an inventory and assessment of existing wetlands, good surface and stormwater management requirements, and a landscape-based approach to maintaining wildlife habitat.

For more information and guidance for protecting wetlands in urban areas, see Ecology's [Best available science for wetlands web site](#).⁹⁸

Protecting Fish and Wildlife Habitat Conservation Areas in Urban Areas

When designating and protecting fish and wildlife habitat in a highly urbanized environment cities should consider the relative importance of the habitat compared to nearby areas. For example, three acres of mature forest may not be a significant habitat feature in a rural area, but it may be the most important habitat feature in a small heavily urbanized city.

The following questions can help assess the relative importance of fish and wildlife habitat within an urbanized or urbanizing area:

Contextual or External Considerations When Determining Wildlife Habitat Designations

1. What type(s) of habitat does the site provide? Some habitat types are more critical than others because of limited supply, sensitivity to disturbance, unique wildlife species, or other factors. WDFW's [Priority Habitats and Species \(PHS\) List](#)⁹⁹ and maps¹⁰⁰ identify places considered to be priorities for conservation and management.
2. How large is the area? Generally, larger patches of a given habitat type are more valuable than smaller patches. Urban patches of 5-20 acres that contain diverse vegetation that can provide "island refuges" for species that would otherwise not be found in a residential neighborhood. Urban open spaces also provide health benefits for nearby residents.
3. Does the area serve as a "corridor" to link otherwise isolated natural areas, parks, preserves, open spaces, or large tracts of land designated for long-term forestry? Corridors are valuable in facilitating movement of animals and in minimizing negative attributes (i.e., reduced numbers

⁹⁸ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Tools-resources/Best-available-science>

⁹⁹ <https://wdfw.wa.gov/conservation/phs/list/>

¹⁰⁰ <https://wdfw.wa.gov/mapping/phs/>

and greater vulnerability to local extinction) of island populations. Riparian areas usually provide important movement corridors in urban-rural landscapes.

4. Does the area serve as a “buffer,” or is it surrounded by a native vegetation buffer area? Buffers are especially important when human activity may affect the area.
5. What are the surrounding habitat types or land uses? The wildlife in the area may be positively or negatively affected by adjacent habitat or land uses. An area adjacent to an existing park will be more valuable to wildlife than a similar area adjacent to commercial or industrial development.

Internal Considerations When Determining Wildlife Habitat Designations

1. How structurally diverse (vertically and horizontally) is the habitat? Vertical diversity is derived from the amount and distribution of vegetation and other structural elements in various zones ranging from underground to the tops of the tallest trees. Horizontal diversity is determined by the size and distribution of vegetation patches across the landscape. Greater structural diversity generally increases the area’s wildlife diversity. Therefore, a wetland with a patch of trees or open water is generally more valuable than a uniform stand of cattails or spirea. Similarly, a forest with a well-developed understory is generally more valuable than a dense forest with no understory, and it is generally more valuable than a golf course with widely scattered trees amid acres of lawn. It should be noted, however, that structural diversity is not static; areas with low structural diversity may become more valuable to fish and wildlife through restoration efforts, particularly in areas that have been degraded by human activities.
2. What are the “edge” conditions? Edges (ecotones) are used by relatively greater numbers of species. An area with a mosaic of habitat types that provide an undulating edge is more valuable to wildlife than an area of equal size but with a linear edge.
3. Are snags and/or large trees present? Snags serve a number of important functions for wildlife, especially cavity-nesting birds and mammals. If snags have to be removed for safety reasons, the stump should be left and should be as tall as possible; even decaying stumps only a few feet high can be beneficial to wildlife.
4. Are downed logs present? Logs also serve a number of important functions for some wildlife species, particularly in or near streams and wetlands.
5. Is water present or can wildlife safely accessed it? Water is one of the essential components of habitat; wetlands and riparian areas are especially important to wildlife.
6. Do any endangered¹⁰¹, threatened¹⁰², sensitive¹⁰³, or other priority species¹⁰⁴ use the area at some time during the year for reproduction? For foraging? For shelter? Areas with priority species and priority habitats are generally more valuable than areas without these.

¹⁰¹ <https://wdfw.wa.gov/conservation/endangered/status/SE/>

¹⁰² <https://wdfw.wa.gov/conservation/endangered/status/ST/>

¹⁰³ <https://wdfw.wa.gov/conservation/endangered/status/SS/>

¹⁰⁴ <https://wdfw.wa.gov/conservation/phs/list/>



Department of Commerce

Critical Areas Handbook

Chapter 5

Protecting Critical Areas in Natural Resource Lands



June 2018
Brian Bonlender, Director

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Appendix 5.A: Critical Areas and Agriculture: Review of Development Regulations, Washington State Department of Commerce, 2017.

Appendix 5.B: Clallam County Risk Assessment Criteria, Clallam County Code Section [27.12.037](#)

Natural Resource Lands and Critical Areas Protection

The Growth Management Act (GMA) requires designation and protection of critical areas on all lands, including those designated as natural resource lands of long-term commercial significance. One of the GMA's goals is to maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Conserving productive forest and agricultural lands is encouraged and allowing incompatible uses is discouraged.¹

All 39 counties are required to classify and designate natural resource lands of long-term commercial significance and to classify, designate, and protect critical areas.² Natural resource lands include agricultural, forest, and mineral lands. The 29 counties that are fully planning under the GMA (i.e., adopting GMA-compliant comprehensive plans and development regulations) are also required to adopt regulations to conserve natural resource lands of long-term commercial significance. The regulations must ensure that the use of lands adjacent to natural resource lands does not interfere with the continued use, in the accustomed manner, and in accordance with best management practices of designated natural resource lands for the production of food, agricultural products, or timber, or for the extraction of minerals.³

Mining and forest practices are regulated through local and state permits that address how natural resources are extracted, how environmentally sensitive areas will be protected, and how the land will be restored or reclaimed for future uses (i.e., restoration of a mining site or reforestation). Local governments typically regulate agricultural land uses through zoning, but may or may not regulate the specific agricultural practices. Some agricultural land uses, such as feedlots and dairies, may require a conditional use permit while orchards, vineyards and row crops are typically permitted outright. In any case, local governments have the duty to protect critical areas that may be impacted by agricultural practices.

Restoration and protection of watersheds in natural resource lands provide economic value by preventing downstream water quality degradation and protecting our drinking water. Proper land stewardship protects salmon habitats, which support commercial and recreational fisheries. Additionally, wetlands and properly functioning floodplains provide important functions in the regulation of stormwater and prevention of flood damage.⁴

The Growth Management Act requires local governments to go through a deliberative and well-documented process to achieve a balanced program that provides for critical area protection

¹ See RCW 36.70A.020(8)

² See RCW 36.70A.050

³ See RCW 36.79A.060

⁴ Washington State Department of Natural Resources, [Forest Watershed Ecosystem Services Publication](#), 2012.

and long-term natural resource production. They must consider both the sustainability of the natural resource industry and the functions and values of critical areas to determine the most appropriate elements for their critical areas protection program.

Agricultural Lands and Critical Areas Protection

Protecting critical areas where they intersect with agricultural lands has been a significant challenge for counties. Consequently, in 2007 the Legislature passed Substitute Senate bill 5248. This bill established a three-year moratorium that precluded counties from adopting amendments to critical areas ordinances with respect to agricultural activities.⁵

The Legislature asked the William D. Ruckleshaus Center, a neutral policy consensus center operated by Washington State University and the University of Washington, to convene the Agriculture and Critical Areas Committee to examine the issue of critical areas protections where agricultural activities occur, and to provide a recommendation on new legislation. Based on a consensus recommendation in 2010 from the Committee, the Legislature passed and the governor signed into law the Voluntary Stewardship Program (VSP) in 2011.

The VSP provides an alternative to counties to protect critical areas where agricultural activities are conducted.⁶ Twenty-seven of the state's 39 counties opted into the VSP. The Washington State Conservation Commission is the state agency lead for implementing the VSP. See the Washington State Conservation Commission [VSP web site](#) for detailed program information. This document provides more information on local implementation of the VSP program starting on page 17.

The Value of Agricultural Lands: Economy and Ecosystem Services

Washington State hosts a tremendous diversity of crops and types of food production. The state is also home to rich soil, diverse climate, and large-scale irrigation, making it one of the most productive growing regions enabling farmers to produce over 300 crops each year. With approximately 36,000 farms, and the top producer in the country of nine specific crops, the agricultural economy is an important state asset. The agricultural production in 2016 alone was

⁵ Chapter 353, Laws of 2007

⁶ Chapter 360, Laws of 2011 (primarily codified in RCW 36.70A.700 through .760)

\$10.6 billion. Fisheries and the aquaculture industry are also essential to the state’s healthy economy.⁷

The landscape across the state varies considerably, with diverse ecosystems and climates. Types and condition of critical areas, local species, and habitats that exist throughout agricultural lands should be examined and evaluated for critical areas conservation opportunities. Beneficial to a discussion of critical areas protection is an examination of the types of production and needs of the agricultural industry in any one county. Communities will need to consider the unique landscape characteristics of the area, whether it is shrub-steppe, Columbia River floodplain, tidal estuary, or lowland Western Washington prairies.

Agriculture is a central element of economic development for rural counties and in rural areas of more urban counties. In recognition of the importance of agricultural and other natural resource industries, the GMA requires counties to designate and conserve agricultural lands of long-term commercial significance. It is important to note that agricultural activities occur on designated resource lands of long-term commercial significance, as well as other rural areas. A number of counties have designated both agricultural lands of long-term commercial significance and rural agricultural lands. Both are important to the economy. Even if agricultural land does not meet the criteria for long-term commercial significance, smaller farms can be an important source of income for rural residents.

The Impacts of Farm Practices on Critical Areas

Many land use activities, including agriculture, have historically impacted critical areas, including filling wetlands, draining wetlands, channelizing streams and converting natural riparian habitat to other uses. The conversion of riparian habitat can lead to pollution of adjacent streams, creeks and natural drainages. Precipitation runoff from large farm buildings can impact the water quality of surface waters. Chemical, fuel and fertilizer spills from farm storage structures, as well as the chemical use associated with agriculture, can pollute ground and surface waters. Streams in agricultural areas may be susceptible to elevated temperatures, given that most agricultural areas are in the lowlands and many streams do not have extensive vegetated buffers.

Improper farm practices may result in:

- Soil erosion and sedimentation that affect habitat and water quality.
- Pesticide and fertilizer pollution that impact fish and wildlife survival, kill non-target insect species, and impact aquatic plants.

⁷ Washington State Department of Agriculture, “[Agriculture: A Cornerstone of Washington’s Economy.](#)” April 25, 2017.

- Animal wastes that degrade water quality, reduce fish production, introduce diseases to water that are harmful to people, and cause excessive aquatic plant and algal growth.⁸

Unmanaged grazing can negatively impact riparian ecosystems and is usually the result of inappropriate livestock management. Grazing can affect all characteristics of riparian and associated aquatic systems, including:

- Vegetative cover
- Soil stability
- Bank and channel structure
- Instream structure
- Water quantity and quality⁹

The U.S. Environmental Protection Agency (EPA) defines Animal Feeding Operations (AFOs) as agricultural enterprises where animals are kept and raised in confined situations.¹⁰ The definition does not include general stock grazing. AFOs have implications for critical aquifer recharge areas and source water. They are considered “point sources” under the federal Clean Water Act and are subject to National Pollutant Discharge Elimination System (NPDES) permits. Agricultural operators meeting certain conditions must apply to participate in Ecology’s Concentrated Feeding Operation (CAFO) General Permit.¹¹ AFO and CAFOs associated with dairies are subject to the nutrient (organic waste) management requirements in RCW 90.64, as administered by the state Department of Agriculture.

In reviewing a critical areas protection program, counties and cities need to recognize that different types of agriculture have different types of impacts and benefits. For example, drainage agriculture raises very different issues than from livestock or dairy. Irrigated agriculture affects critical areas differently from dry land farming, and the impacts from row crops are different than those of tree fruit. It is important for city and county planners to evaluate the different agricultural practices occurring within their jurisdictions. We encourage local government to use agricultural expertise available to them (WSU extension, local conservation districts, etc.) to better understand potential critical area impacts specific to different agricultural sectors.

One example of an analysis of different types of agricultural use is the Department of Ecology’s *Guidance on Widths of Buffers and Ratios for Compensatory Mitigation for Use with the Western Washington Wetland Rating System and Eastern Washington Wetland Rating System*¹². The

⁸ See Washington Department of Fish and Wildlife, *Priority Habitat and Species, Management Recommendations for Washington’s Priority Habitats: Riparian* (1997), pp. 56-58.

⁹ See Washington Department of Fish and Wildlife, *Priority Habitat and Species, Management Recommendations for Washington’s Priority Habitats: Riparian* (1997), pp. 60-61.

¹⁰ <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/livestock/afo/>

¹¹ <https://agr.wa.gov/foodanimal/livestock-nutrient/npdescafopermit.aspx>

¹² <https://fortress.wa.gov/ecy/publications/parts/0506008part1.pdf>

guidance separates different types of agriculture into different land-use intensity buckets in Table 8C-3 (Western Washington) and 8D-3 (Eastern Washington), page 5.

Regulatory Programs

Cities and counties are required to adopt development regulations to assure the protection of existing critical areas functions and values. Counties with watersheds participating in the VSP are not required to use development regulations to protect critical areas where agricultural activities take place, but the VSP work plan must incorporate any existing regulations relied upon to achieve goals and benchmarks.¹³

In 2017, the Washington State Department of Commerce produced a report that analyzes critical areas regulations in the 12 non-VSP counties. The report includes a summary of common approaches and key themes for critical area protection; and highlights regulations, incentives, and tools these 12 counties use to protect critical areas on agricultural lands. The report provides a basis for many of the recommendations in this chapter regarding critical areas protection in agricultural lands.¹⁴

Local governments should consult with the [Department of Natural Resources, Aquatic Resources Division](#) to obtain information about the presence, if applicable, of aquatic lands adjacent to natural resource lands.

Court and Growth Management Hearings Board Decisions

All local governments should consult recent court and growth management hearings board decisions when developing and reviewing critical areas ordinances. The courts have ruled that broadly exempting agricultural activities does not protect critical areas.

The Washington State Court of Appeals Division II held that an exception from critical areas regulations for agricultural activities must be supported by evidence in the record that such an exception is necessary and that the best available science was employed in crafting the exception.¹⁵

The Division II Court of Appeals reviewed the legislative history of RCW 36.70A.060, the broad definition of “development regulations” in RCW 36.70A.030, the breadth of the best available

<https://fortress.wa.gov/ecy/publications/parts/0506008part2.pdf>

¹³ RCW 36.70A.720(1).

¹⁴ See [Critical Areas and Agriculture: Review of Development Regulations](#), Washington State Department of Commerce, 2017.

¹⁵ *Whidbey Environmental Action Network v. Island County*, 122 Wn. App. 156, 93 P.3d 885 (June 7, 2004), review denied, 153 Wn.2d 1025 (2005).

science requirement in RCW 36.70A.172(1), and the natural resources goal in RCW 36.70A.020(8). Based on that review, the court concluded the Legislature intended that counties regulate critical areas, including existing uses, to advance the GMA's goals. The court held a county could expand its agricultural land exemption to include agricultural uses outside designated agricultural lands of long-term commercial significance, but it must balance the exemption with restrictions based on best available science that address any threatened harm resulting from the expanded exemption. The court concluded that preexisting agricultural uses are not exempt from all critical areas regulation. The court also held that the county was not limited to exempting only designated agricultural resource land from full critical areas regulation and that the county may expand its exempt agricultural land to meet its local conditions. However, the county must balance such expanded exemption with corresponding restrictions that take into account the specific harms threatened by the expanded class of farm lands.¹⁶

In the *Swinomish*¹⁷ decision, the state Supreme Court recognized the competing goals in the GMA of protection of critical areas and natural resource lands stating that local governments are not given much direction as to whether protecting critical areas or maintaining agricultural lands is a priority. The court noted that RCW 36.70A.172(1) requires local governments to include best available science in developing regulations and policies to protect critical areas and that they are to "give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries." However, the court recognized that there was still deference given to balancing of local circumstances and, in this case, the court did not require the county to curtail historic agricultural activities in critical areas and upheld the county's "no harm" provision in its ordinance. The Court concluded that the "no harm" standard protected critical areas by maintaining existing conditions. The Court upheld the county's decision against requiring mandatory riparian buffers in agricultural lands because doing so would impose a requirement to restore habitat functions that no longer existed.

For recent Growth Management Hearings Board decisions, see Appendix 1.A - *Critical Areas Case Law*, Appendix 5.A - *Critical Areas and Agriculture: Review of Development Regulations*, and the [Growth Management Hearings Board](#) web site.

¹⁶ *Clallam County v. Western Washington Growth Management Hearings Board*, 130 Wn. App. 127, 121 P.3d 764 (Oct. 25, 2005), review denied, 163 Wn.2d 1053 (2008).

¹⁷ *Swinomish Indian Tribal Community. v. Western Washington Growth Management Hearings Board*, 161 Wn.2d 415 (2007).

How to address Existing, Ongoing and New Agriculture in Development Regulations

Counties and cities should specify the length of time agriculture can lie dormant before it is no longer considered existing and ongoing in their critical areas regulations. Existing and ongoing agriculture is often defined as agricultural activity that has been conducted or maintained within the past five years.

In 2014, Island County was challenged by the Whidbey Environmental Action Network (WEAN) for failing to protect fish and wildlife habitat conservation areas as required by RCW 36.70A.060. The county critical areas ordinance stated that existing and ongoing agriculture ceased to be ongoing if the land was idle for more than five years, unless an extension was

Klickitat County defines existing agricultural or ranching activities as those that have been active in 2 of the last 5 years.

granted, or the property was enrolled in a federal conservation program. The ordinance allowed for an extension to the five-year period by a reasonable amount of time if unavoidable events would make active agricultural use impossible, such as a death or difficulty selling the property. In 2015, the Growth Management Hearings Board issued a final decision and order that determined the county had failed to establish clear standards for extending critical area exemptions to agricultural practices because their definition included a vague and potentially unlimited extension standard.¹⁸ Island County then amended its definition to state that existing and ongoing agriculture is exempt if it lies idle for three years. The option for a time extension was removed from the definition. In 2016, the Hearings Board found this update to be in compliance with the requirements of the GMA.

Local government regulations typically recognize agricultural land enrolled in a federally recognized conservation program, such as the Conservation Reserve Program (CRP), as meeting the definition of existing and ongoing agriculture. Existing and ongoing agricultural activity exemptions and allowances for maintenance or repair may not continue or transfer when a new use is established, and the existing and ongoing agricultural activity is discontinued. New uses would be subject to the critical area regulations.

In addition to defining the length of time an agricultural activity must be in use, further definitions of ongoing and existing agriculture commonly include:

- Current use in areas designated as agricultural lands of long-term significance.
- Activities involved in the production of crops or livestock, operation and maintenance of existing farm and stock ponds or drainage and irrigation ditches.

¹⁸ *WEAN v. Island County, Case No. 14-2-0009*, FDO, June 24, 2015.

- Changes between agricultural activities, such as crop rotation, are considered ongoing and existing activities.
- Activities that bring an area into agricultural use are not part of an ongoing activity.
- An operation ceases to be ongoing when the area where it was conducted has been converted to a nonagricultural use. In a few instances, a county offers an extension for the ongoing or existing use designation.

When defining the time period in which an agricultural activity remains existing and ongoing, counties and cities are advised to also define what constitutes new agricultural activities. Often, new and expanded agricultural activities are subject to additional regulatory requirements, making it important to define and distinguish between new and existing agricultural operations. Jefferson County defines “new” agriculture as agricultural activities proposed or conducted after 2003 that do not meet their definition of “existing and ongoing” agriculture.

Several county development codes regulate new or expanding agriculture per the conditions of their critical areas ordinance or their livestock ordinance. King County, for example, provides that new agriculture or the expansion of agriculture is allowed in a specific set of critical areas if the use meets the development standards for each of the critical areas. Clallam County requires new and expanded agricultural activities to comply with both the substantive and procedural provisions of their ordinance.

Agricultural Activities: Descriptions and Definitions

Definitions for agricultural activities may vary among jurisdictions based on the unique characteristics of the geography and ecology in their area. A diversity of landscapes offers opportunities for different types of agricultural uses. With this in mind, local governments must find the best definition for their area. Defining agricultural activities makes it clear which activities are subject to the regulation. A common reference is found in RCW 90.58.065(2)(a) in the Shoreline Management Act. This is the definition included the VSP statute (RCW 36.70A.703)(1) and in the GMA statutory definitions in WAC 365-196-200.

Once agricultural activities are defined, the development regulations can describe how the activities are regulated. For example, in the review of the 12 county critical areas development regulations, the following agricultural related uses and activities are regulated:

- Nonconforming (preexisting) uses and structures
- Maintenance, repair, reconstruction and remodeling
- Agricultural chemicals
- Fencing and signage

Impact Ratings for Agricultural Activities

Impact or intensity ratings can be used to categorize potential impacts of agricultural activities in critical areas. A rating system assists in categorizing agricultural activities into low, moderate or high impacts. The impact level can then be used to determine allowed uses, and necessary regulations and protection standards to assure the protection of critical areas.

Several counties permit low-impact agricultural uses in critical areas, but require monitoring and adaptive management through a standard farm conservation plan. Moderate-to-high impact farm or livestock operations are also subject to monitoring and adaptive management, but it is conducted through a custom farm conservation plan. Farm plans are used to lower the risk of the agricultural activity.

Clallam County uses high-to-low risk assessment criteria to evaluate existing and ongoing agriculture within and adjacent to aquatic habitat conservation areas and wetlands.¹⁹ The ratings are based on risk assessment scores from six performance standards and four environmental categories (river and streams, wetlands, ponds, irrigation/drainage ditches, livestock and heavy use areas, and manure storage). Depending on the rating, either high, moderate or low-risk, various protection standards are required. Agricultural activities are compliant if they score moderate-to-low-risk in the assessment. If the agricultural use is found to be causing harm or receives a high-risk rating in one of the six performance standards, then the agricultural operator is required to develop a farm conservation plan. The purpose of the plan is to reduce the risk assessment from high to moderate.

In Whatcom County, ongoing low-impact agricultural uses are permitted, but also subject to monitoring and adaptive management through a required standard farm conservation plan. Ongoing moderate-to-high-impact farm or livestock operations follow the same guidelines, but must implement a custom farm conservation plan. King County also uses farm plans to bring agricultural activities with moderate-to-high-impacts into compliance with low-to-moderate impact standards.

Non-regulatory and Incentive Programs

In pursuing environmental protection, comprehensive plan policies should identify non-regulatory programs to protect critical areas, in addition to regulatory approaches.²⁰ Non-regulatory programs include but are not limited to:

- Providing incentives to protect critical areas;

¹⁹ Appendix 5.B: Clallam County Risk Assessment Criteria

²⁰ WAC 365-196-485(1)(f).

- Public education regarding the value of critical areas;
- Public recognition of good stewards of the land;
- Purchase or transfer of development rights from environmentally sensitive areas; or
- Paying landowners for providing ecosystem services such as water quality protection.

Programs that provide incentives to implement best management practices in agricultural lands provide a good approach to protect critical areas given the challenges of regulating farm practices and the need to maintain and enhance the agricultural industry. For jurisdictions seeking to balance the economic needs of the agricultural industry with critical areas protection, non-regulatory, incentive-based approaches that the local government can easily monitor are a promising means to achieve critical areas protection.

Voluntary and incentive-based measures are usually implemented with support and partnership with local conservation districts, federal agencies, and regional non-profit organizations. Landowners can be supported with assistance from a local jurisdiction to encourage participation in private, state and federally funded resource enhancement projects or programs.

Cooperative and non-regulatory, incentive-based programs that promote best management practices can provide some or all of the protection needed to protect the functions and values of critical areas in agricultural lands. This is premised on the assurance that they are comprehensive, achieve the outcomes for protecting critical areas over time, and are implemented with a high degree of certainty. To ensure certainty, implementation of voluntary programs should be monitored for effectiveness, tracked with an adequately funded adaptive management program, and backed by development regulations that adequately protect critical areas if protection is not being achieved after a reasonable period of time.

Best Management Practices

Best management practices (BMPs) have been developed to control water and soil erosion both on the farm and off. Leaving vegetation along streams, contour plowing (plowing across the slope), and terracing decrease the speed of runoff and allow for more water to soak into the soil. More recently, many farmers have adopted “conservation tillage” and “no till” farming methods.

Jurisdictions may look to the National Resources Conservation Service, Field Office Technical Guide (NRCS FOTG) for practical guidance on the most effective conservation practice standards and specification for their area. Agricultural experts, including the Washington State Conservation Commission, WSDA, WSU and others, generally regard FOTGs as a well-researched and science based toolkit. FOTGs provide landowners and technical assistance providers with management techniques and practices that can be used to protect natural

resources and maintain agricultural viability. However, NRCS conservation practice standards are not designed, nor provide the specificity to meet state water quality standards. The Department of Ecology requires additional analysis and specificity to ensure BMPs will result in water quality protection that complies with state law and water quality standards. Working with local conservation districts and Ecology to ensure BMPs are tailored to the unique needs of your area is advised.

The Department of Ecology is developing best management practices for agricultural landowners (see [Voluntary Clean Water Guidance for Agriculture](#)). Completing the guidance is an important part of Ecology's [Water Quality Management Plan to Control Nonpoint Sources of Pollution](#), which addresses pollution coming from a wide variety of sources such as city streets, forest lands and farms.

Federal Incentive Programs

A number of federal programs provide incentives for landowners to implement best management practices:

- Conservation Reserve Enhancement Program (CREP) – CREP is a joint partnership between the state of Washington and U.S. Department of Agriculture that is administered by the Washington State Conservation Commission and the USDA Farm Services Agency (FSA) to restore riparian habitat. Under the voluntary program, land enrolled in CREP is removed from production and grazing under 10- or 15-year contracts. In return for planting trees and shrubs to stabilize the stream bank and to provide a number of additional ecological functions, landowners receive payments to cover annual rent, incentive and maintenance payments, and cost share for practice installations. Payments can result in no cost to the landowner for participation.
- Conservation Reserve Program (CRP) – CRP provides technical and financial help to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. Funding from the Commodity Credit Corporation (CCC) helps farmers and ranchers to comply with federal, state, and tribal environmental laws, and encourages environmental enhancement.
- Environmental Quality Incentives Program (EQIP) – EQIP provides technical and financial help to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial manner. Contracts of up to 10 years are made with eligible producers to implement one or more eligible conservation practices, such as animal waste management facilities, terraces, filter strips, tree planting, and permanent wildlife habitat. Incentive payments can be made to implement one or more land management practices.
- Section 319 nonpoint grants – Provide grants for water quality BMPs that address nonpoint source pollution projects. Eligible nonpoint projects include: livestock fencing, off-stream water development, stream crossings, riparian plantings and subsidization of on-site sewage repair and replacement local loan programs. Limited funding is available for education and outreach.

- Habitat conservation plans (HCPs) under the federal Endangered Species Act – HCPs are planning documents required as part of an application for an “incidental take permit.” The plan describes the anticipated effects of the proposed taking, how those impacts will be minimized or mitigated and how the HCP is to be funded. HCPs can apply to both listed and non-listed species, including those that are candidates or have been proposed for listing. The HCP describes potential impacts to known threatened and endangered species by specified activities, which can include agriculture. The incidental take permit allows the permit-holder to legally proceed with an activity that would otherwise result in the unlawful take of a listed species.²¹ HCPs can be developed at the county level, so that any BMPs or mitigation required of landowners can be streamlined through a countywide process, local regulations, and permitting processes, and so corrective actions and mitigation processes can be developed on a countywide basis.

Local governments that include federal programs in their critical areas protection programs need to understand how federal programs fit with local protection goals and requirements, as farmers are very familiar with them. Local governments should work closely with federal agencies and local conservation districts to understand these programs. For example, NRCS can explain how the field office technical guides are used as a basis for best management practices.

Local governments also need to be aware of issues that can come up if they choose to rely on federal programs for critical areas protection. For example, local regulatory requirements may affect a farmer’s eligibility for a federal program because the federal programs are intentionally voluntary. If local regulations mandate buffers, a farmer may not be eligible for CREP. The federal and state agencies, as well as local conservation districts, understand the nuances of these programs and can help a county or city work through these issues.

State Incentive Programs

Farmers and local governments can access a variety of state conservation programs. They include the Salmon Recovery Fund, the Interagency Committee on Outdoor Recreation’s Washington Wildlife and Recreation Program, and the Washington State Department of Natural Resources’ Aquatic Land Enhancement Grants.

Finally, counties and cities have a variety of local, non-regulatory tools available to help with develop a critical areas program for agricultural lands. They include:

- *Comprehensive plan policies* – policies in the plan requiring use of incentive programs to encourage water quality and habitat protection.
- *Land acquisition or purchase of conservation easements* – county and city programs for acquisition funded by conservation futures or other local funding sources and federal and state

²¹ [U.S. Fish & Wildlife Services Habitat Conservation Plans | Overview](#)

funding noted above. Conservation Futures is an open space acquisition program authorized by state law, funded by a tax levy on real estate.

- *Long-term lease* – land trust/governmental agency leases property from the landowner, thereby preventing other uses of the property during the lease term.
- *Habitat restoration projects* – projects to create fish passage at culverts, restore estuaries, etc. with conservation futures or other local funding sources and federal and state funding noted above.
- *Mitigation banking* – the restoration, creation or enhancement of wetlands for the purpose of compensating for unavoidable impacts to wetlands at another location.
- *Purchase of development rights* – the local government purchases rights to develop allowed under current zoning from the landowner with conservation futures or other local, state, or federal funding sources.
- *Transfer of development rights* – the local government sets up a program whereby development rights may be transferred from agricultural land to an area where higher densities are encouraged.
- *Open space taxation* – The Open Space Taxation Act, enacted in 1970, allows property owners to have their open space, farm and agricultural, and timber lands valued at their current use rather than their highest and best use. The act allows for property tax abatement for land designated as open space land in local comprehensive plans and zoned accordingly or otherwise meeting certain criteria. To receive property tax relief, a landowner must apply for and receive the open space classification and abide by the restrictions placed on the land in the open space classification. The owner is obliged to leave property in the program for 10 years, or face penalties upon withdrawal. Some counties, such as King, Island and Chelan, have made it easier for property owners to enter the system by adopting a public benefit rating system. If the county legislative authority has established a public benefit rating system for the open space classification, the criteria contained within the rating system govern both the eligibility of the lands described in each application filed for that classification and the current use valuation of that land.

Farm Management Plans

Common voluntary approaches to agricultural land stewardship and environmental protection are individual stewardship plans, farm management plans, or habitat protection plans. These plans not only lay out best management practices for critical area protection, they also can be used to leverage and qualify for funding from federal and state sources to support implementation efforts. Farm plans are often associated with uses in fish and wildlife conservation areas, wetlands and aquifer recharge areas to protect and enhance water quality. They also help improve the efficiency of farm operations. A farm plan may still be required in addition to a permit per the requirement of the development code. If a landowner's agricultural operation is found to be adversely impacting a critical area without appropriate mitigation, a farm plan may be required as a form of enforcement.

Several counties have developed manuals to describe best management practices and offer seminars and presentations to interested land owners. Local governments may offer technical assistance to facilitate the critical area protection. Non-monetary incentives such as farm management or habitat protection plans offered to property owners encourage the implementation of projects that provide increased protections and enhancements to critical areas.

Farm management plans typically address:

- Farm size
- Soil types
- Slope of the land
- Waste and manure piles
- Location of streams and water bodies
- Surface water, water flow controls, water treatment and management
- Type of crops or livestock
- Machinery and farm buildings

Farm management plans are intended to help agricultural operators maintain productive and economically viable agricultural land, while protecting and enhancing critical areas and water quality using best available science and effective mitigation measures. Farm management or conservation plans are not limited to large commercial operations; farms of all sizes can benefit from a farm plan. Plans can effectively reduce impacts from farm activities on natural resources with solutions unique to each farm to avoid or minimize adverse impacts with mitigation techniques.

Common farm plans include:

- **Goals:** Restore or enhance critical areas and hydrologic systems.
- **Inventory Maps:** Critical areas, designated habitat areas, existing and proposed structures, cleared and forested areas, utilities, roads, driveways, wetlands and property lines.
- **Planning Map, Scope and Timeline:** Map and proposed new agricultural activities, the scope of the agricultural activities, a timeline for their implementation, use of pesticides, fertilizers or other chemicals, and identification of existing habitat functions and values.
- **Implementation Plan:** Description and implementation plan for performance standards, integrated pest management, mitigation measures and best management practices to be implemented for the maintenance, restoration and enhancement of critical areas and their buffers.
- **Future Plan:** Changes to the site, including structures, land use conversion, and changes to the landscape.

- **Monitoring:** Ensure the effectiveness of proposed strategies to protect critical areas. If monitoring shows the farm plan does not effectively protect critical areas a new farm plan may be required. Whatcom County farm plans are also subject to adaptive management.
- **Approval Process:** Typically conducted by an NRCS, WDFW or conservation district certified agricultural technician, a qualified planning advisor or the county technical administrator. Approval is based on compliance with the BMPs of the NRCS field guide.
- **Compliance:** Once approved, the farm plan is considered in compliance with the county’s critical areas provisions. Compliance is typically sought through education and voluntary measures, but an inspection may be required to confirm compliance. Refusal or inability to implement the farm plan effectively may result in the farm plan being revoked, requiring the property owner to be subject to provisions in the standard critical areas regulation. County planning advisors may provide suggestions to support compliance, but responsibility for compliance is typically with the farm operator. If compliance is not resolved, enforcement actions per the critical areas ordinance may be applied.
- **Technical Assistance and Resources:** These are provided to the property owner through the county, the conservation district, the watershed improvement district or the Washington State University agricultural extension office. This can include workshops, web-based information and manuals.
- **Conservation Practice Standards:** The most recent version of the [USDA NRCS Field Office Technical Guide \(FOTG\)](#) is often referenced for conservation practices and specifications within the plan.
- **Site Inspections:** Evaluation, monitoring, compliance and enforcement of farm plan effectiveness are conducted by the county through scheduled site inspections and farm operator self-assessment.

Farm plans are an optional and recommended strategy to protect critical areas, particularly for existing and ongoing agricultural activities. In the case of new agriculture, counties may choose to require a farm plan before new or expanded agricultural activities may take place. Farm plans may be required for agricultural activities that receive high-impact ratings or high-risk assessment scores. With low-impact ratings or scores, farm plans can remain optional.

Snohomish County allows agricultural operators to submit farm conservation plans as one option to show compliance with critical area regulations.

In Snohomish County, agricultural operators can submit a farm conservation plan to the county for approval as one option to show compliance with county critical area regulations. The farm conservation plan must include provisions to protect critical areas specific to the farm site recommended by the NRCS or the Snohomish Conservation District.²²

To increase and promote the use of farm plans, jurisdictions can provide ready-made farm plan templates for agricultural activities that are more common or typical. These plans can be modified and tailored based on the unique goals and activities of each farm operation. Local

²² See [Snohomish County Code, Section 30.62A.620](#)

conservation districts are important partners and can play an essential role in providing technical assistance in the development of farm plans and farm plan templates.

When developing farm plans, local governments are advised to address how confidential and proprietary information will be handled within their critical areas ordinance. In most instances, farm plans are not open to the public unless required by law or court. Financial, commercial, and proprietary information in farm plans are typically exempt from disclosure unless the landowner gives permission. Snohomish County's code states that confidential or proprietary information in farm conservation plans submittal for their approval can be redacted prior to public disclosure. Public disclosure of farm plans for agricultural operations including dairies and animal feeding operations, and concentrated animal feeding operations is addressed in RCW 42.56.270(17), RCW 42.56.610, and RCW 90.64.190.

Note that any information used to review or demonstrate compliance with National Flood Insurance Program (NFIP) standards must be included in the local jurisdiction's NFIP permanent file. If an element of a farm plan is used to demonstrate NFIP compliance, it should be understood that any such elements of the farm plan cannot remain confidential.

To see examples of farm plans, additional details about common farm plan elements, and a sample farm plan factsheet, see Appendix 5.B item "Critical Areas and Agriculture: Review of Development Regulations, Chapter 6: Farm Conservation Plans."

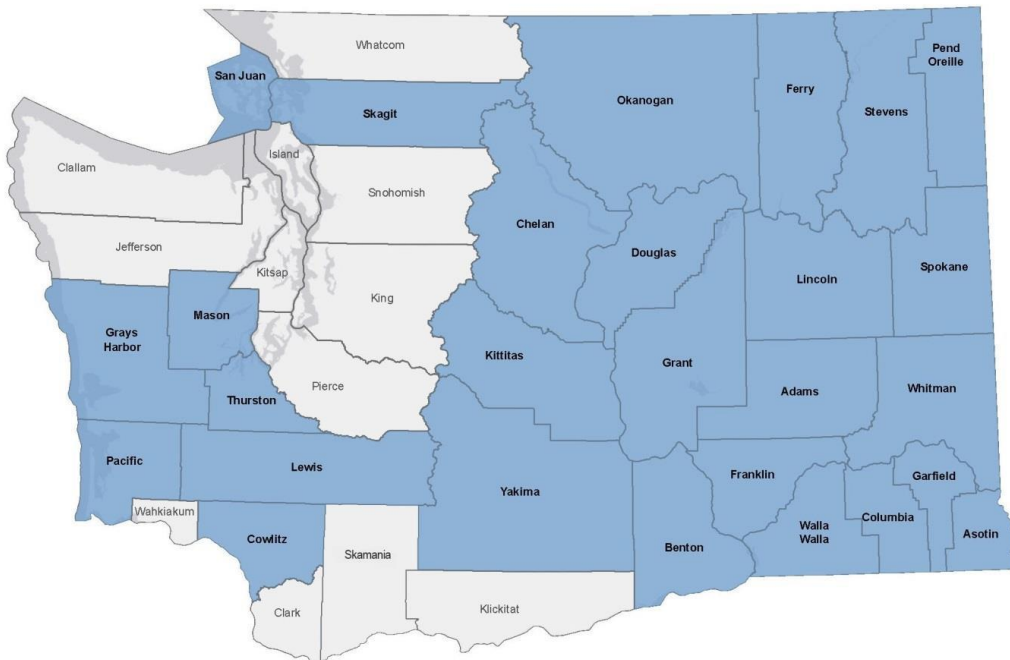
Voluntary Stewardship Program

In 2011, the Voluntary Stewardship Program (VSP) was adopted into the GMA as an alternative approach for counties to protect critical areas where agricultural activities are conducted. Counties had until January 2012 (six months after July 22, 2011) to opt into the VSP by ordinance or resolution, with 27 counties choosing to opt-in (Figure 1). Each participating county must identify the watersheds that will participate in the program.²³

Non-VSP counties must continue regulating agricultural activities in their critical areas ordinances. The program provides counties with a voluntary approach to protect and enhance critical areas on lands used for agricultural activities. The program relies on the voluntary actions of agricultural operators to collaboratively protect and enhance critical areas where agricultural activities are conducted, while maintaining and improving the long-term viability of agriculture. The VSP builds on existing state and federal programs, which allows counties to leverage resources from previous work plans to successfully reach program goals.

²³ RCW 36.70A.710.

Figure 1. Washington State Conservation Commission Voluntary Stewardship County Participation Map



*Shaded counties are participating in the Voluntary Stewardship Program

The Legislature has allocated over \$15 million to the program since inception. The Washington State Conservation Commission administers the program with guidance from a statewide advisory committee and technical panel. The Conservation Commission allocates funds and supports counties in developing incentive-based strategies and local guidelines for watershed stewardship. The program relies on continued funding from the Legislature.

Visit the [Conservation Commission Voluntary Stewardship Program website](#) to find more information about the VSP.

Watershed Work Groups and Watershed Work Plans

In 2015, counties began developing VSP work plans to protect critical areas and maintain agricultural viability. Pursuant to RCW 36.70A.720, the purpose of a watershed work plan is to protect critical areas while maintaining the viability of agriculture in the watershed. Counties designate watershed groups to develop the work plan, which must include goals and benchmarks to protect and enhance critical areas.

Watershed work groups, composed of farmers, tribes, local environmental groups and agricultural industry representatives, must develop watershed work plans with goals and measurable benchmarks to determine the progress and success of the program over time.

Some workgroups also have participation from county and state agency representatives. The VSP applies to all areas where agricultural activities are conducted in designated watersheds and not just designated agricultural resource lands of long-term commercial significance. All agricultural operators participating in the VSP are eligible to receive funding and assistance under watershed programs.²⁴

Once completed, watershed work plans are submitted to the Conservation Commission director, who then forwards to the technical panel for review. The technical panel, consisting of representatives from the Washington State Departments of Agriculture, Fish and Wildlife, Ecology and the Conservation Commission, reviews and evaluates the work plans. The technical panel assesses whether the work plan will meet VSP requirements to protect critical areas while maintaining and enhancing the viability of agriculture in the watershed. If the technical panel determines that the work plan meets these requirements, they will recommend approval to the Conservation Commission director. If the technical panel determines that the work plan does not meet the VSP requirements, the work plan may not be approved, or may be modified and resubmitted.²⁵

A Statewide Advisory Committee advises the Conservation Commission and Technical Panel on VSP policies and operations.

State natural resource agencies support the work plan by developing materials to assist the local watershed groups with this process. State agency monitoring efforts related to the implementation of the program focus on the goals and benchmarks of the work plan. Within five years of receiving funding for a participating watershed, the watershed group must report to the director and the county on whether the work plan's goals and benchmarks were met.

A report to the Conservation Commission director is also required no later than 10 years after receipt of funding, and every five years thereafter, to determine whether the goals and benchmarks are being met. After the approval of a work plan, counties and watersheds may request that state and federal agencies focus existing enforcement authority in participating watersheds if it will support achieving the work plan goals and benchmarks.

Prior to the approval of a work plan by the Conservation Commission director, agricultural activities located in participating watersheds are subject to the county's existing development regulations that protect critical areas. After watershed work plan approval, protection of the functions and values of critical areas from agricultural located in participating watersheds is provided by the watershed work plan.

After a county's watershed work plan is approved, counties are encouraged to reference and describe their participation in the VSP within their critical areas development regulations.

²⁴ RCW 36.70A.720

²⁵ RCW 36.70A.725

Counties should be very clear in describing critical areas regulations that still apply to agricultural activities after work plan approval. County VSP work plans may rely on existing development regulations to achieve the goals and benchmarks for critical areas protection.²⁶ For example, work plans may defer to existing regulations for steep slopes, erodible soils or flood hazards. In shoreline areas, agricultural activities are still subject to local Shoreline Master Programs.

Agricultural Activities

The VSP legislation uses the Shoreline Management Act (SMA) definition for “agricultural activities.”²⁷ Therefore, once approved by the Conservation Commission, the watershed work plan governs all agricultural activities, as defined.

Agricultural production, facilities and operations not consistent with the agricultural activities definition will be subject to the county’s critical area regulations. For example, the definition for agricultural activities states that agricultural facilities may be maintained, repaired or replaced, as long as the facility is not located closer to the shoreline than the original facility. The agricultural activities definition does not include brand new agricultural facilities. Therefore, new agricultural facilities, such as barns, ditches and access corridors, must comply with county critical area regulations, including setbacks and buffer standards.

The Shoreline Management Act definition for “agricultural activities” describes existing and ongoing agricultural operations and facilities. It does not include “new” agriculture. Therefore, counties must evaluate “new” agricultural production, facilities and operations to ensure compliance with critical area regulations.

The SMA definition for agricultural activities includes “maintaining agricultural lands under production or cultivation,” but does not include new or expanded agricultural uses or practices. Therefore, bringing new land into cultivation must be evaluated under the county’s critical areas regulations.

Due to the varied style and content of VSP counties’ critical areas ordinances, it is difficult to provide a one-size-fits-all solution for how to revise the development regulations to reflect the recommendations of the watershed work plan. As a best practice, counties are encouraged to consult with legal staff for advice on how best to address it for each individual county.²⁸ It must be clear to agricultural operators which development regulations still apply.

²⁶ RCW 36.70A.720(1)(h)

²⁷ RCW 90.58.065(2)(a)

²⁸ WAC 365-196-832

Monitoring and Adaptive Management

RCW 36.70A.720 requires that watershed work plans establish baseline monitoring for the participation and implementation of VSP projects, stewardship activities, and the effects on critical areas and agriculture as they relate to the benchmarks developed for each watershed. This underscores the importance of selecting appropriate benchmarks and collecting accurate baseline monitoring data. Counties are required to evaluate adaptive management approaches within 60 days after the end of each biennium.

Within five years of receiving funding to implement the program, a report to the Conservation Commission is required to show if benchmarks and goals have been met. If goals are not met, implementation of the work plan continues and the watershed group must identify additional voluntary actions and funding necessary to meet the benchmarks.

Actions must be implemented upon receipt of funding. A report to the Conservation Commission director is required within 10 years of when funding was received, and every five years thereafter, to report if the goals and benchmarks in the watershed work plan were met.²⁹

For more on adaptive management and monitoring related to both VSP and non-VSP counties, please see Chapter 7 of the Critical Areas Assistance Handbook. Note that the type of monitoring recommended in Chapter 7 is not the type required by the VSP.

County Responsibilities When Exiting or Withdrawing from the Voluntary Stewardship Program

Counties that elect to protect critical areas through the VSP may withdraw participating watersheds from the program by adopting an ordinance or resolution. Counties may withdraw watersheds from the program at the end of three, five or eight years after receipt of funding, or any time after 10 years of funding.

Within 18 months after withdrawing a participating watershed from the program, a county must review and, if necessary, revise its development regulations that protect critical areas in that watershed as they specifically apply to agricultural activities.³⁰ During the 18-month interim period, counties are required to continue protecting critical areas in watersheds withdrawn from the VSP. The adopted ordinance or resolution used to withdraw the participating watersheds must describe how the county will continue to protect critical areas in watersheds withdrawn from the VSP. Counties have three options:³¹

²⁹ RCW 36.70A.720

³⁰ RCW 36.70A.710(7)(b)

³¹ WAC 365-196-832(4).

- 1) Adopt interim development regulations;
- 2) Revert to development regulations that were in place at the time of watershed work plan approval; or
- 3) Continue to implement the watershed work plan.

County Responsibilities When Work Plans Not Approved, Fail or are Not Funded

When watershed work plans are not approved by the Conservation Commission, fail, or are not funded, counties are required, within 18 months, to adopt one of four options:³²

- 1) Develop, adopt and implement a watershed work plan.
- 2) Adopt development regulations previously adopted by another local government to protect critical areas used for agricultural activities.
- 3) Adopt development regulations certified by the department (Commerce) as protective of critical areas in areas used for agricultural activities as required by this chapter.
- 4) Review and, if necessary, revise development regulations adopted under this chapter to protect critical areas as they relate to agricultural activities.

During the 18-month interim period, counties must continue to protect critical areas in areas used for agricultural activities using one of the four options. One of the options, as stated in RCW 36.70A.735 (1)(b), was clarified in a Washington State Department of Commerce rule update in WAC 365-196-832(5)(b)³³ to provide implementation guidance:

“Counties may adopt another county's critical area development regulations, provided such regulations are from a region with similar agricultural activities, geography, and geology, and are from Clallam, Clark, King, or Whatcom counties at the time the voluntary stewardship program legislation was enacted, and have not been invalidated, or are from any county (including Clallam, Clark, King, or Whatcom) and have been upheld as adequately protective of critical areas functions and values in areas used for agricultural activities by the growth management hearings board or court after July 1, 2011.”

Counties considering Clallam County's ordinance for adoption of VSP development regulations pursuant to RCW 36.70A.735 (1)(b) need to be aware that Clallam County's critical areas ordinance was under appeal in 2011 at the time the VSP legislation was signed into law. The Court of Appeals subsequently held that Clallam County's ordinance was required to be compliant with the GMA only for those counties participating in the VSP. Because Clallam County was not participating in the VSP, the county would have to comply with the “traditional” requirements of RCW 36.70A.060 rather than the alternative requirements for VSP

³² RCW 36.70A.735(1)

³³ Effective November 4, 2017.

participants.³⁴ On remand from the court, the Growth Management Hearings Board found the county's ordinance out of compliance. Since that time, Clallam County revised its development regulations as they pertain to the protection of critical areas where agricultural activities take place. With respect to RCW 36.70A.735, counties are advised to adopt development regulations that have been upheld by the courts as adequate for the protection of critical areas functions and values in areas used for agricultural activities.³⁵

Agricultural Viability

Watershed work plans must protect critical areas while maintaining and enhancing the viability of agriculture in the watershed.³⁶ The VSP statute does not define or provide guidance for counties to measure agricultural viability. Therefore, each county must develop criteria tailored to their unique agricultural characteristics to measure or describe agricultural viability. The state Conservation Commission provides guidance for counties on this issue in its *Agricultural Viability Toolkit*, which provides the following considerations for agricultural viability:

- Productively farm on a given piece of land or in a specific area,
- Maintain an economically viable farm business,
- Keep the land in agriculture long-term, and
- Steward the land so it will remain productive in the future.³⁷

Agriculture needs adequate land and water resources. Other land uses, such as housing and industrial developments, compete for land and water, threatening agricultural viability. Farms and ranches need sufficient infrastructure and market access systems to maintain viability. Other considerations include technical support for modern conservation practices and education, research and succession planning.

Periodic Review and Update Requirements

All counties and cities must comply with the periodic review and update requirements as they apply to critical areas regulations in agricultural lands as required by RCW 36.70A.130. The statute provides an exception for counties with watersheds participating in the VSP. Counties are not required to develop or update critical areas regulations applicable to agricultural activities in those participating watersheds if they are meeting established benchmarks and goals for critical areas protection under their watershed plan.³⁸ However, those counties must

³⁴ *Protect the Peninsula's Future v. Growth Management Hearings Board*, 185 Wn. App. 959 (2015).

³⁵ WAC 365-196-832(5)(b)

³⁶ RCW 36.70A.725

³⁷ [Agriculture Viability Toolkit, Washington State Conservation Commission, 2016](#)

³⁸ RCW 36.70A.130(8)

still comply with the periodic update schedule and guidelines regarding the critical areas ordinance as it applies to all other activities and in non-VSP watersheds.

State and Federal Regulations Impacting Agricultural Lands and Critical Areas

Regardless of participation or non-participation in the VSP, jurisdictions are required to comply with state and federal regulations, such as the federal Clean Water Act and the state Water Pollution Control Act. Producers participating in the VSP still must comply with water quality standards, including wetlands protection, and comply with state and federal environmental regulations.

Statutes and regulations that regulate agricultural activities includes, but are not limited to:

- Hydraulic project approval
- Livestock management ordinance
- Washington State Dairy Nutrient Management Act
- Washington Shoreline Management Act
- Water Pollution Control Act
- Water quality standards for surface water
- Water quality standards for groundwater
- Endangered Species Act
- Federal Clean Water Act
- Federal Emergency Management Agency Laws
- National Flood Insurance Program

Agriculture and Shoreline Master Programs

The Shoreline Management Act (SMA) was enacted in 1971 and amended in 2002 to clarify that Shoreline Master Programs (SMPs) cannot modify or limit agricultural activities on land where agricultural activities are conducted. If there are conflicts between critical areas regulations and SMP policies, the SMP provisions will prevail. New agricultural activities must comply with SMP requirements when land is being converted from another use to agriculture. New development that does not meet the definition of “agricultural activity” per RCW 90.58.065 must also comply with SMP standards.

After the Department of Ecology (Ecology) approves a comprehensively updated SMP, critical areas within shorelines of the state are protected by SMPs and are not subject to procedural or substantive requirements of the GMA. However, counties may rely on critical areas ordinances

within shoreline jurisdiction provided they meet Ecology standards. [Ecology's Shoreline Master Program Handbook](#) describes options for local governments to incorporate relevant portions of critical areas ordinances into SMPs directly, or adopting critical area regulations by reference.

Counties participating in the VSP are still subject to the SMA and local SMP requirements.

Agriculture and Drinking Water

Agricultural land uses can negatively impact drinking water in numerous ways. In terms of critical areas, the explicit drinking water relationship is between agricultural uses/practices and critical aquifer recharge areas; but another relationship exists in terms of proximity to public water systems and the associated times of travel to the water source. In these circumstances, a jurisdiction should limit or condition specific land uses *and practices* that are likely to foul drinking water.

Pesticides and other agricultural chemicals can appear in surface and ground waters proximate to agricultural lands through surface runoff and/or groundwater infiltration. The state departments of ecology and agriculture jointly published best management practices for storing and using agricultural chemicals.³⁹

Manure-producing agricultural uses can likewise contribute to nitrate pollution if manure is not managed properly. Ecology published guidance for assessing the risks to water quality associated with livestock operations in 2015, which is helpfully organized in terms of riparian areas, confinement areas, manure storage areas, and upland pasture areas.⁴⁰

In 2013, the Washington Nitrate Prioritization Project identified a consolidated approach for state agencies to address agricultural pollution of surface and ground water.⁴¹ In part, the project identified hydrogeological information necessary to understand how groundwater's presence and movement affects nitrate contamination and formed a basis for information-sharing among regulatory agencies. Additional technical information was published separately in 2016.⁴² Also in 2016, Ecology published a literature review that examined scientific information on manure management associated with CAFOs, strategized measures of these practices' effectiveness, and identified practices and treatment technologies to maintain and protect groundwater.⁴³

³⁹ <https://fortress.wa.gov/ecy/publications/documents/94189.pdf>

⁴⁰ <https://fortress.wa.gov/ecy/publications/documents/1510020.pdf>

⁴¹ <https://fortress.wa.gov/ecy/publications/documents/1410005.pdf>

⁴² <https://fortress.wa.gov/ecy/publications/documents/1610011.pdf>

⁴³ <https://fortress.wa.gov/ecy/publications/documents/1603026.pdf>

Agricultural uses, specifically farms and dairies, are categorized as “severe and high health cross-contamination hazard premises requiring premises isolation by [air gap] or [reduced pressure backflow assembly].”⁴⁴ What this means in practice is that technical requirements must be met to prevent backflow from user connections that could contaminate public water systems. Water purveyors are responsible for cross-connection control between their systems and individual service connections or meters.

While drinking water purveyors must comply with all local plans,⁴⁵ they must, at the same time, “exercise surveillance over conditions and activities in the watershed affecting source water quality”⁴⁶ as a part of their water system plans, which are to include a discussion of “the foreseeable effect from current and future use on the water quantity and quality of any body of water from which its water is diverted or withdrawn.”⁴⁷

Water system plans must incorporate several aspects of source water protection: (1) an immediate sanitary control area (minimum 100-foot radius for wells and 200-foot radius for springs); (2) a wellhead protection program, typically comprised of six-month and one-, five-, and ten-year times of travel to the source; and (3) a watershed control program for surface sources or groundwater under the direct influence of surface water, including “an inventory of all potential surface water contamination sources and activities, including site locations and other/operators, located within the watershed and having the significant potential to contaminate the source water quality.”⁴⁸ In addition, it must evaluate “conditions/activities in the watershed that are adversely affecting source water quality” and reevaluate changes that have occurred since the last evaluation that *could* adversely affect quality.⁴⁹

Purveyors must ask local governments to review water system plans and assess consistency with local planning efforts, generally on a 60-day turnaround.⁵⁰ However, there is no complementary clause requiring that local governments actually provide them with a review or comments, so it’s possible that sometimes the ends don’t meet. Similar to the best practices identified for overall critical aquifer recharge area planning, it’s to the jurisdiction’s advantage to engage with local water purveyors when considering agricultural uses within the community and how their operations relate to drinking water protection.

Some parts of the state are designated as “critical water supply service areas” in which there are not just individual water system plans but a coordinated water system plan that may cover numerous jurisdictions and/or water systems. Critical water supply service area boundaries are

⁴⁴ WAC 246-290-490, Table 9

⁴⁵ WAC 246-290-108

⁴⁶ WAC 246-290-668

⁴⁷ WAC 246-290-100(4)(f)(ii)(B)

⁴⁸ WAC 246-290-135

⁴⁹ WAC 246-290-668

⁵⁰ WAC 246-290-108

set by the county legislative authority and also have a relationship with local plans and zoning.
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⁵¹ See, generally, Ch. 70.116 RCW and Ch. 246-293 WAC

Forest Lands and Critical Areas Protection

Forest practices, including timber harvest and its associated activities (e.g., road building, pre-commercial thinning, controlled burning, herbicide and insecticide spraying), temporarily or permanently alter the character of forested landscapes, including critical areas. For example, vegetation removal, road construction, and soil disturbance are the chief mechanisms by which forest practices influence riparian areas. These disturbances can result in:

- Hydrologic (relating to water flow) effects
- Soil destabilization, erosion, and sedimentation
- Stream temperature increases and a more severe microclimate
- Loss of large woody debris
- Habitat degradation and fragmentation
- Loss of habitat diversity
- Introduction of invasive species
- Fish and wildlife impacts
- Cumulative effects

The Washington State Forest Practices Board adopts the Forest Practices Rules in Title 222 WAC, establishing minimum standards for forest practice activities on non-federal forest land under Chapter 76.09 RCW, the Forest Practices Act. As defined in the act, “forest practice” means:

- [A]ny activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber, or removing forest biomass, including but not limited to:
- Activities in and over typed water;
- Road and trail construction, including forest practices hydraulic projects that include water crossing structures, and associated activities and maintenance;
- Harvesting, final and intermediate;
- Pre-commercial thinning;
- Reforestation;
- Fertilization;
- Prevention and suppression of diseases and insects;
- Salvage of trees; and
- Brush control.

Forest practice activities do not include preparatory work such as tree marking, land surveying, road flagging and removal of incidental vegetation such as berries, ferns, or mushrooms. These

activities and the removal of incidental vegetation do not result in damage to forest soils or public resources.⁵²

“Forest land” is defined in the Forest Practices Rules as “all land which is capable of supporting a merchantable stand of timber and is not being actively used for a use which is incompatible with timber growing.”⁵³ Thus, “forest land” for purposes of the Forest Practices Act includes all land meeting this definition regardless of whether it has been designated natural resource land of long-term commercial significance under RCW 36.70A.170. However, forest practices are subject to local critical area regulations instead of the Forest Practices Rules when forest land is converted to non-forestry use, or when a conversion is likely.

Administration of the Forest Practices Rules

The Washington State Department of Natural Resources (WDNR) administers the Forest Practices Rules, except when jurisdiction has been transferred to local government. Forest practices include activities related to growing, harvesting, or processing timber, including, but not limited to, road construction and maintenance, thinning, salvage, harvest, reforestation, brush control, and the application of fertilizers or pesticides. There are four classes of forest practices:⁵⁴

- Class IV-Special - Certain activities determined to have potential for a substantial impact on the environment that require review under the state Environmental Policy Act (SEPA).
- Class IV-General - Activities that are not listed as Class IV-Special that are subject to SEPA review and that are being converted to another use.
- Class I – Determined to have no direct potential for damaging a public resource.
- Class II – Determined to have a less than ordinary potential to damage a public resource (water, fish and wildlife).
- Class III – All other forest practices not classified as I, II or IV. Class III forest practices within the urban growth area where the transfer of jurisdiction to a local government has occurred to a local government are regulated by WDNR if it is on contiguous forest land equal to or greater than 20 acres and the landowner provides documentation as noted under the Class IV-General above regarding intention not to convert or obtains an approved conversion harvest plan.

When to Apply the Critical Areas Ordinance and the Shoreline Master Program

Class IV-General forest practices will be subject to local critical area regulations when a conversion activity is planned or conversion to another land use is likely. Conversion is

⁵² WAC 222-16-010

⁵³ WAC 222-16-010

⁵⁴ RCW 76.09.050 and WAC 222-16-050

considered to be likely when forest practices involve timber harvest or road construction within a designated urban growth area. Exceptions are provided to this where:

- The forest landowner provides a written statement of intent not to convert for 10 years, with either a written forest management plan approved by WDNR or the land is enrolled under Chapter 84.33 or 84.34 RCW; or
- A Conversion Option Harvest Plan has been approved by the local government and submitted to WDNR.

Except as stated above under Class III forest practices, the CAO would also apply to forest activity requiring a forest practices application when located within an urban growth area.

The SMA applies to forest practices activities administered by WDNR when harvesting or road construction is planned within shorelines of the state, as defined by the SMA. Forest practices that constitute a substantial development within the “shoreline” may require a Shoreline Substantial Development Permit. Applicants are required to contact the county having jurisdiction before submitting a Forest Practices Application to ensure compliance with the requirements of the local shoreline master program.

Transfer of Jurisdiction to Local Government

Counties with a population greater than 100,000, and the cities and towns within them, are required to adopt ordinances or regulations to assume jurisdiction over certain forestry activities under the Forest Practices Act.⁵⁵ Local governments assume jurisdiction over forestry activities within the urban growth area and conversion activities outside the urban growth area. The local government initiates the transfer process; WDNR provides technical assistance during the process and reviews the local government’s regulations for meeting the statute. Local critical areas and development regulations must be in compliance with RCW 36.70A.130 and, if applicable RCW 36.70A.215. In addition, they must at a minimum include:

- Provisions requiring appropriate approvals for all phases of the conversion of forest lands, including land clearing and grading; and
- Procedures for the collection and administration of permit and recording fees.⁵⁶

As of June 2018, WDNR has approved the following counties and cities for a transfer of jurisdiction:

- Counties: Thurston, King, Spokane, Clark, Mason, Pierce, and Snohomish.
- Cities: Port Townsend, Bonney Lake, Monroe, University Place, Federal Way, Lacey, Mill Creek, Everett, Olympia, Tumwater, Arlington, Mount Vernon, and Bothell.

⁵⁵ RCW 76.09.240

⁵⁶ RCS 76.09.240((2))

Conversion to a Non-Forest Use

A landowner who has not stated an intent to convert and decides to convert within six years of receiving an approved Forest Practices application or notification, must:

- Stop all forest practices activities on the parcel subject to the proposed land use conversion;
- Contact Ecology and the applicable local government to begin the permit process; and
- Notify WDNR, withdraw any applicable applications or notifications, and submit a new application for conversion.⁵⁷

Upon being contacted by a landowner, the local government must:

- Notify WDNR and request the status of forest practices applications, notifications, or final orders or decisions; and
- Require full compliance with SEPA and outstanding final order or decisions from WDNR; and
- Make a determination of full compliance with local ordinances and regulations. If full compliance is not found, a mitigation plan must be required and approved by the local government.⁵⁸

For more information and technical assistance regarding the Forest Practices Rules as they relate to critical areas regulations under the GMA, contact the [WDNR Forest Practices Division staff](#).

⁵⁷ RCW 76.09.470(1)

⁵⁸ RCW 76.09470(2)

Mineral Resource Lands and Critical Areas Protection

Aggregate and hard rock mining can impact critical areas in various ways, including ground water harvest, ground water pollution, surface water pollution, slope stability, ground surface subsidence, and noise, light, and vibration. The processing of minerals into asphalt or other aggregate products may also have similar impacts. Conditions such as regulating the time of mining operation and other permit conditions can be required on mineral resource permits to ensure that habitat and water quantity and quality issues are addressed and avoided. The issuance of a water rights permit may be required if it is determined that aquifers will be impacted by mining activity.

As with other natural resource lands, local governments are required to designate mineral lands of long-term commercial significance. They are also responsible for approval of mine sites and/or the subsequent use of the mine site. Mining operations will be regulated by the local jurisdiction's critical areas relations.

WDNR regulates certain aspects of the mineral industry, including surface mining and reclamation as specified in the Surface Mine Reclamation Program (SMRP), created in 1971.⁵⁹ The SMRP makes sure that all lands and waters within the state are protected. WDNR also regulates metal mining and milling operations.⁶⁰ Critical areas that may overlay designated mineral resource lands include critical aquifer recharge areas, frequently flooded areas, geologically unstable areas, and fish and wildlife habitat conservation areas.

When considering the designation of mineral lands as well as creating development standards and administering local permits, it is important to check for proximity to drinking water sources to avoid conflicts with not just aquifer recharge but also to avoid impact to the aquifer such as breach, sedimentation or other degradation of water quality. The Washington State Department of Health maintains a statewide map of public water systems and their associated wellhead protection areas.⁶¹

Local designation of both resource lands and critical areas should have considered ranking designated mineral resource lands on the basis of several factors to assign priority levels to these designated lands. Criteria to consider in assigning priorities could have included their ease of access for transportation, surrounding land uses and the compatibility of mining with those uses, the quantity and quality of the resource, demand for the resource, and environmental impacts of mining based on local circumstances, including the presence of critical areas.

⁵⁹ RCW 78.44, Surface Mining

⁶⁰ RCW 78.56, Metals Mining and Milling Operations

⁶¹ <https://fortress.wa.gov/doh/eh/maps/SWAP/index.html>

Building the Legal Record and Including Best Available Science

Counties, and in some instances cities, may face significant challenges in their efforts to protect critical areas on natural resource lands. For example, there will be instances where local governments must reconcile the need to protect critical areas with the need to conserve farmland and enhance the agricultural industry. Consequently, it will be important for local governments to build a record that documents the inclusion of any new best available science in critical areas protection, as well as consideration of the economic impacts to local natural resource industries. The record should include local information about critical areas generated through inventory, survey, and assessment data. Once this level of information is known, management approaches that look at local circumstances and opportunities necessary to protect critical areas can be developed.

See Chapter 1 of this *Critical Areas Handbook* for more information on Best Available Science.



Department of Commerce

Critical Areas and Agriculture: Review of Development Regulations

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Department of Commerce Critical Areas and Agriculture Summary Report
Growth Management Services*

Appendix 5.A

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Washington State Department of Commerce

Genevieve Dial, Research Analyst, Growth Management Services

Scott Kuhta, Senior Planner, Growth Management Services

Dave Andersen, Eastern Regional Manager, Growth Management Services

Washington State Department of Commerce

Growth Management Services

1011 Plum St. SE

P.O. Box 42525

Olympia, WA 98504-2525

<http://www.commerce.wa.gov>

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Executive Summary

The Washington State Legislature adopted the Growth Management Act (GMA) in 1990. The GMA requires local governments to designate natural resource lands and critical areas. Development regulations are required to assure the conservation of agricultural, forest, and mineral resource lands and to protect critical areas ([RCW 36.70A.060](#)). Counties and cities are required to include the best available science ([RCW 36.70A.172\(1\)](#)) when developing their critical areas regulations and must give special consideration to conservation and protection measures to preserve or enhance anadromous fisheries. The GMA defines five critical areas, including: wetlands, critical aquifer recharge areas, fish and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas. Counties and cities must develop effective policies and development regulations for the protection of critical areas and conservation of natural resource lands, including agricultural resource lands.

A 2011 amendment to the GMA ([RCW 36.70A.700 – 760](#)) allowed counties to enroll in the Voluntary Stewardship Program (VSP) to implement incentive-based and voluntary measures to protect critical areas where agricultural activities take place. Twenty-seven counties opted into this program; the remaining twelve continue to use development regulations to protect critical areas and conserve agricultural land. An analysis of the development regulations in the twelve non-VSP counties is provided in this report along with a summary of common approaches and key themes. The report highlights regulations, incentives, and tools these twelve jurisdictions use to protect critical areas on agricultural lands. Additionally, this report provides a summary of the case law and legislative history related to the topic of critical areas ordinances (CAO) and agriculture.

Developing CAOs that both protect critical areas and conserve agricultural land is a complex task with many policy considerations. The information in this report summarizes common CAO approaches and the history and legal requirements associated with this task. This report is intended to be used as a reference to understand what non-VSP counties have implemented, what common approaches have been used, and what laws and guidelines should be considered to protect critical areas and preserve agriculture land in their communities. It will also provide background information to support the *Critical Areas Assistance Handbook* update.

Key Findings

Throughout the review and analysis of non-VSP county CAOs many common themes were identified. Primarily, CAOs regulate development activity that may cause adverse impacts to critical areas. Regulations specific to agricultural activities were more difficult to find, requiring a search throughout most chapters within the CAO.

- CAOs are organized differently throughout the jurisdictions. One approach is to provide a general exemption or regulation in the first chapter of the CAO. The other common method is to list agricultural exemptions and regulations within each critical area chapter.
- Regulations and exemptions for agricultural activities are not addressed uniformly among the five types of critical areas, resulting in more specific regulations in one critical area chapter and no regulations in another.
- Variations in definitions relating to agricultural land, activities and uses are common. This report includes a list of common definitions that can be used as examples to increase consistency and ensure that the important categories and topics are addressed. Most important are definitions for 'ongoing and existing' and 'new' agriculture.
- 'New' agriculture is not always defined and CAOs do not consistently address new and expanded agricultural uses and activities. Requiring farm management plans is a common approach to regulating new and expanded agricultural activities.
- Ongoing and existing agricultural activities and reconstruction and remodeling of structures are typically exempt.

Chapter 1: Background

1.0 Legislative and Case Law History

Since the adoption of the GMA, many jurisdictions have faced legal challenges regarding the consistency of their development regulations with the requirements of the GMA. CAOs have presented many jurisdictions with challenges regarding the use of best available science, best management practices and the protection of fish and wildlife habitat conservation areas.

Developing policies to both protect critical areas and maintain agricultural productivity can be complicated and has resulted in numerous cases before the Growth Management Hearings Board, the Washington Court of Appeals and the Washington State Supreme Court. The outcome of many of these cases shapes how critical areas policies are developed today. With the GMA update cycle occurring every eight years; jurisdictions may benefit from a review of the legislative context as they update their CAOs. This chapter serves to breakdown the complexity of the legal environment related to agriculture and critical areas.

1.1 Case Law History

The table below summarizes several legal cases that pertain to agriculture and critical areas regulations, including: best available science, buffers, “enhancement” and “protection”, anadromous fish and agricultural exemptions in Washington.

Table 1. Cases Relevant to Critical Areas and Agriculture in Washington State: Supreme Court of the State of Washington, Washington Court of Appeals and Washington State Growth Management Hearings Board

Case Title	Subject Summary	Year
Friends of Skagit County v. Skagit County, 96-2-0025	Where [critical areas] are designated and the Forest Practices Act provides a local government with some authority to act, the GMA requires a local government to protect critical areas and their buffers within the scope of that authority.	1997
Honesty in Environmental Analysis and Legislation (HEAL) v. Central Puget Sound Growth Management Hearings Board, 96 Wn. App. 522, 979 P. 2d 864	Local governments must give substantial consideration to the best available science when developing critical area policies and regulations. The best available science requirement is intended to ensure that critical areas regulations are not based on “speculation and surmise.”	1999

Case Title	Subject Summary	Year
Mitchell, et al., and Swinomish Indian Tribal Community v. Skagit County, 01-2-0004c	“Enhancement” versus “protection” requirements. Best available science used successfully to determine local applicability for existing and ongoing agriculture. Critical and agricultural areas goals met with a well-managed and monitored program.	2001
Swinomish Indian Tribal Community v. Skagit County, 02-2-0012c	RCW 36.70A.060(2) and .040(1) do not require buffers on every stretch of every watercourse containing or contributing to a watercourse bearing anadromous fish to protect the existing functions and values of fish and wildlife habitat conservation areas in ongoing agricultural lands.	2003
Whidbey Environmental Action Network (WEAN) v. Island County, 122 Wn. App.156, 93 P.3d 885	An exception from critical areas regulations for agricultural activities must be supported by evidence in the record that such an exception is necessary and that the best available science was employed in crafting the exception.	2004
Whidbey Environmental Action Network (WEAN) v. Island County, 98-2-0023c	Based on the County’s reasoned review of the factors in WAC 365-195-905(5) for determining if the NRCS BMPs constitute best available science; and the assessment of the state agencies with expertise in this area – Ecology, Fish and Wildlife, and CTED ¹ –the Board finds that the NRCS BMPs constitute best available science for the regulation of ongoing noncommercial agricultural practices in Island County, so long as they are accompanied by monitoring and an adaptive management program. The 2006 case was appealed. It was concluded that the breadth of the critical area exemptions to all rural lands was not supported by the record. The County addressed this by adopting regulations limiting the exemption to land zoned commercial agriculture and rural agriculture, lands participating in the agricultural tax program pursuant to chapter 84.34 RCW, or lands that are encumbered in perpetuity by a recorded easement created for the purpose of preservation of agricultural purposes. In 2015, the Board found Island County in compliance.	2006, 2015
Swinomish Tribe & Washington Environmental Council v. Western Washington Growth Management Hearings Board 12 17 22 No. 76339-9	Protection of critical areas and anadromous fish found to be mandatory per the requirement of the GMA. Enforcement of watercourse protection measures and more specificity in monitoring and adaptive management measures necessary.	2007

¹ Now, the Washington State Department of Commerce.

Case Title	Subject Summary	Year
Clallam County v. Western Washington GMHB, 130 Wn. App. 127, 121 P. 3d 764	The court concluded that preexisting agricultural uses are not exempt from all critical areas regulation. The court also held that the county was not limited to exempting only designated agricultural resource land from full critical areas regulation and that it may expand its exempt agricultural land to meet its local conditions. However, the county must balance such expanded exemption with corresponding restrictions that take into account the specific harms threatened by the expanded class of farm lands.	2008
Protect the Peninsula's Future & Washington Environmental Council v. Western Washington GMHB & Clallam County, 185 Wn. App. 959	The Legislature amended the GMA in 2011 to create the VSP, it provided in RCW 36.70A.735 that if a county opting into the program was unable to implement a watershed work plan for the reasons provided in sub (2) of the section, the county could avail itself of options for compliance including adopting Clallam County's ordinances for protecting critical areas in areas used for ag activities. Clallam County did not opt to participate in the VSP. In response to a challenge for failure to update its critical areas ordinance, Clallam County argued that the Legislature had validated the County's 2001 ordinance. The court disagreed and held that Clallam County's ordinance was compliant only for those counties participating in the VSP. Because Clallam County was not participating, the county would have to comply with the "traditional" requirements of RCW 36.70A.060 rather than the alternative requirements for VSP participants.	2015
Whidbey Environmental Action Network (WEAN) v. Island County, 14-2-0009	The Board found a violation of RCW 36.70A.060 due to the County's failure to establish clear standards for the exercise of administrative discretion regarding the extension of time for continuing an exemption. The Board's concern is the lack of adequate standards to guide a County administrator in determining what constitutes an "appropriately limited and reasonable amount of time." The County has the obligation to protect critical areas and the absence of clear standards could lead to the resumption of agricultural activities, with potential negative impacts on the functions and values of FWHCAs, following a decade or more of no agricultural activity.	2015

1.2 Key Critical Areas Case Rulings: *Protect the Peninsula's Future v. Growth Management Hearings Board and Clallam County*

In 2005, Clallam County updated their CAO to reflect the requirements of the GMA for agricultural activities in and near critical areas and associated buffers. Previously, their CAO exempted pre-existing agricultural operations from the provisions in their development regulations. Protect the Peninsula's Future (PPF), an environmental nonprofit organization, challenged the County's broad exemptions for agriculture and brought the issue to the Growth Management Hearings Board (GMHB). In response, Clallam County amended the ordinance, but was again brought to the GMHB and the Court of Appeals for compliance review. The Court of Appeals held that the GMHB correctly ruled; the County could not exempt all pre-existing agriculture from critical areas regulations.

In 2007, further decisions and updates were put on hold when the Legislature placed a moratorium on CAOs while the Ruckelhaus Center conducted a policy study on the issue of agricultural lands and critical areas. The moratorium was lifted in 2011 with the GMA amendment to establish the Voluntary Stewardship Program (VSP). Clallam County did not elect to participate in the VSP and PPF carried forward with their challenge of the County's agricultural exemptions to the GMHB. However, the County moved to dismiss the review, citing the newly amended GMA VSP section, RCW [36.70A.735](#), which states that counties that do not develop approved workplans within the required timeline, may be required to adopt development regulations from a list of four counties, including Clallam County.

The County argued that the Legislature implicitly validated the County's critical areas regulations by incorporating them into the 2011 statutory provisions that established the VSP. As a result, the GMHB dismissed and rescinded its prior finding that the County was out of compliance. PPF appealed this decision to the Court of Appeals. The Court held that the Legislature chose to distinguish alternative pathways to GMA compliance for counties that have elected to participate in the VSP and counties that have not, and that only the VSP counties can comply with the GMA by adopting Clallam's regulations. Therefore, it held that [RCW 36.70A.735\(1\)\(b\)](#) does not reflect a legislative determination that Clallam's regulations unconditionally comply with the GMA's critical areas protection requirements. The Court reversed the Board and remanded the matter back to the Board for further proceedings consistent with its opinion. Clallam County was given time by the Board to resolve the issue and bring the updated ordinance into compliance with the GMA.

Clallam County Updated Ordinance Includes:

- Qualifying existing and ongoing agricultural activities may continue if they do not result in expansion or significant adverse impacts to a critical areas or its buffer. New agricultural activities or the expansion of existing agricultural activities are must comply with the CAO.
- Agricultural activities that do not meet the definition of existing and ongoing agricultural are required to comply with wetland protection standards and aquatic habitat conservation area standards.
- A new section, “Alternate Standards” applies to existing and ongoing agricultural activities occurring on or within 200 feet of aquatic habitat conservation areas and wetlands. They may deviate from the protection and buffer standards in the CAO if they comply and enroll in the alternate standards program.
- Alternate standards require a worksheet with a [risk assessment](#), which rates agricultural activities into low, medium and high risk categories. A farm plan is required for high-risk ratings.
- Monitoring will be conducted annually on existing and ongoing agriculture enrolled in the alternate standards program.
- Adaptive management will be used to determine if existing and ongoing agricultural activities are found to be contributing to a downward trend of baseline functions and values.
- All existing and ongoing agricultural activities must not cause harm or degrade the existing functions and values of aquatic habitat conservation areas, wetlands, or their buffers.

1.3 Key Critical Areas Case Rulings: *Swinomish Indian Tribal Community & the Washington Environmental Council v. Skagit County*

Skagit County contains approximately 115,000 acres of agricultural land designated as long-term commercially significant. Much of the agricultural land found in the County is also within critical areas, which the GMA requires the County to protect. In short, riparian farm land found in Skagit County may be considered both agricultural land and a critical area.

Agriculture in the area is unique. Many of Skagit County’s agricultural operations have been in production for up to 100 years. The County also boasts the Skagit and Samish River watersheds, which the state has described as the most significant watersheds in Puget Sound due to the role they play in salmon recovery. They are home to at least six salmon species and two endangered fish species. Agricultural production and the fishing industry are of economic significance to the County.

The Swinomish Tribe and Washington Environmental Council appealed Skagit County's CAO before the Western Washington GMHB. The appeal addressed the GMA requirement that jurisdictions protect critical areas and give special consideration to conservation and protection measures to preserve or enhance anadromous fisheries in [RCW 36.70A.172](#).

In 2003, the Western Washington GMHB largely upheld the County's effort to comply with the GMA, with a couple of exceptions, one of which stated that the County needed more specificity in their monitoring and adaptive management programs. In 2005, the GMHB found that the County had not corrected the deficiencies as identified in the 2003 decision within the 180 days as directed. Then, in 2007, the Washington Supreme Court decision consolidated these two separate decisions by the Western Washington Growth Management Hearings Board and upheld both of the Board's decisions.

Key Findings

- Mandatory riparian buffers are not required on existing agricultural lands.
- Benchmarks are required in adaptive management plans for effective monitoring.
- Existing and ongoing agriculture cannot harm or degrade critical areas, the "no harm" standard.
- The Court affirmed the County's 'no harm' standard, clarifying the minimum requirement under GMA is to protect critical areas by maintaining existing conditions.
- The Court affirmed the GMA does not require enhancement, though it is allowed.

1.4 Ruckelshaus Center Study

In 2007, following the *Swinomish v. Skagit County* Supreme Court decision, the Legislature directed the William D. Ruckelshaus Center (the Center) to address the challenging policy issue regarding protection and enhancement of critical areas within areas where agricultural activities are conducted, while maintaining and improving the long-term viability of agriculture in the state of Washington ([SSB 5248](#)) and [SSB 6520](#)). The Center established a critical areas committee to conduct research and facilitate discussions with tribal and county governments, and representatives from the agricultural and environmental communities. Together they developed solutions and new approaches that would enable counties to more effectively protect critical areas while preserving agricultural land. In 2010, the Center produced an [impact report](#) which outlined an alternative framework for protecting critical areas in agricultural land, known as the Voluntary Stewardship Program. A year later the Growth Management Act was amended to include the Voluntary Stewardship Program in [RCW 36.70A.700 - 760](#).

of farmers, tribes, and local environmental groups and agencies, will develop watershed work plans with goals and measurable benchmarks to determine the progress and success of the program over time. Counties, together with agricultural landowners, will develop stewardship plans, including best management practices specific to their property. The stewardship plans are aimed at protecting critical areas while maintaining the viability of the landowner's agricultural operation. The VSP applies to all areas where agricultural activities are conducted and not just designated agricultural resource lands.

Counties not participating in the VSP are still required to protect critical areas, and will follow the more traditional approach, using development regulations mandated by the GMA. Additionally, if a VSP county develops a work plan that is not approved, or the work plan's goals and benchmarks have not been met, or the county has not received adequate funding, the counties may be required to adopt development regulations to protect critical areas in areas used for agricultural activities ([RCW 36.70A.735](#)).

Chapter 2: Critical Areas Ordinance Review

2.0 Critical Area Ordinance Review: Twelve Washington State Counties

Twelve Washington counties, predominantly located in the western portion of the State, are not enrolled in the VSP and will continue to protect critical areas and agricultural land with development regulations. This report is based on a thorough review of those non-VSP CAOs. The report summarizes CAOs that were current at the time the report was written. Information provided in this document is subject to change when jurisdictions update their CAOs. Table 2 lists the County's reviewed for this report and the year and date they adopted ordinances pertaining to agriculture within their CAOs.

Table 2. Non-VSP Counties Critical Ordinance Review

County	Date of Ordinance
Clallam	2016-11-22
Clark	2006-08-03
Island	2008-03-17
Jefferson	2008-03
King	2005-01-01
Kitsap	2005 – Currently in update process. Amendments expected by mid-2017
Klickitat	2013-08-06
Pierce	Ag sections updated in 2014, 2015 & 2016
Skamania	2003 & 2007
Snohomish	2015-09-02
Wahkiakum	2000-12-19
Whatcom	2005 – Currently in update process. Amendments expected by end of 2016

Local governments applied a wide variety of approaches throughout the State to protect critical areas and agricultural land. The variation ranges from the complete exemption of agricultural and ranching activities in critical areas, to very specific guidelines for performance standards, mitigation and conservation.

Although many counties in Washington are not participating in the VSP, they are implementing voluntary and incentive-based measures in their CAOs. [WAC 365-196-830\(7\)](#) recommends local governments develop and implement alternative measures to protect critical areas with both regulatory and non-regulatory methods. Most jurisdictions provide voluntary and recommended measures to protect critical areas within their development codes, including the opportunity for farm operators to develop a farm or stewardship plan.

County development regulations vary based on several factors, including whether or not the agricultural use is “new” or “existing”, how “new” and “existing” are defined, the types of agricultural uses on the property, the type of land the agricultural activity occurs on, the type of critical area involved, and whether or not a farm plan is in use.

Each county regulates agriculture use in critical areas differently, based on their community’s unique needs and ecology. Some counties do not address agricultural activities within each critical areas chapter, and instead regulate or exempt agricultural uses and activities generally for all critical areas.

Several commonalities exist within the non-VSP County CAOs as well. For example, most counties regulate the following activities in some if not all critical areas:

- Clearing
- Grading
- Dumping
- Discharging
- Filling
- Excavating
- Removing, dredging, draining, flooding or disturbing the water level or water table
- Storage and use of agricultural chemicals

The basis for counties commonly regulating these activities is due to their potential adverse impacts on critical areas.

2.1 Common Critical Areas Ordinance Exemptions

A variety of activities may be commonly exempt from CAOs with a recommendation to minimize adverse impacts to critical areas. Most specifically, if existing and ongoing agricultural uses do not result in significant adverse impacts to a critical area or its buffer, and implements best management practices, they are typically exempt. A list of low-impact or minimal harm agricultural activities are commonly listed, defined or included in a table within the ordinance. Less commonly, ongoing agricultural activities are exempt if in compliance with an approved farm plan. Here are some of the more common exemptions found in critical areas regulations:

- Most existing and ongoing agricultural uses considered to be low-risk to critical areas and their buffers.
- Maintenance, operation, reconstruction or remodeling of existing infrastructure, drainage and irrigation ditches and farm ponds.

- Uses or structures existing on the effective date of the ordinance may typically continue if they are used in substantially the same manner and for the same purpose as on that date.

2.2 Critical Areas Ordinance Definitions

All county CAOs include definitions for activities and practices related to agricultural operations and critical area protection. The list of terms varies among counties, but several common defined terms include: adaptive management, agricultural activities, agricultural land, existing and ongoing agriculture, animal feeding operation, best available science, best management practices, enhancement, farmland, farm pond, farm plan, livestock management, long-term commercial significance, maintenance or repair, normal maintenance, buffer, wetlands, wetland alteration, and riparian area.

2.3 “Ongoing and Existing Agriculture”: Description and Definition

Every county addresses common themes related to ongoing and existing agriculture, including a definition, when an existing and ongoing operation ceases, and a list of activities, exemptions and regulations that apply.

Existing and ongoing agriculture is often defined as agricultural activity that has been conducted or maintained within the past five years. However, jurisdictions apply a broad spectrum of definitions for existing and ongoing agriculture in CAOs throughout Washington. All counties allow agricultural uses to lay dormant for a specified period of time before they are considered no longer existing and ongoing; however, the timeline for dormancy varies widely among counties. In this review, the range varied from 12 months to 25 years. Five years is the most common length of time that an agricultural operation is allowed to lay dormant before the exemption status is affected. If agricultural land is enrolled in a federally recognized conservation program, it is not considered to be idle, and continues to meet the definition of existing and ongoing agricultural activity.

In 2014, Island County was challenged by the Whidbey Environmental Action Network (WEAN) for failing to protect fish and wildlife habitat conservation areas as required by [RCW 36.70A.060](#). The County CAO stated that existing and ongoing agriculture ceased to be ongoing if it laid idle for more than 5 years, unless an extension was granted, or the property was enrolled in a federal

***Klickitat County** defines existing agricultural or ranching activities as those that have been active in 2 out of the last 5 years.*

conservation program. The ordinance allowed for an extension to the five-year period by a reasonable amount of time in the event of unavoidable events that would make active agricultural use impossible, such as a death or difficulty selling the property. In 2015, the GMHB issued a [final decision and order](#) that determined the County had failed to establish clear standards for extending critical area exemptions to agricultural practices because their definition included a vague and potentially unlimited extension standard. Island County then amended their CAO definition to state that existing and ongoing agriculture is exempt if it lays idle for three years. The option for a time extension was removed from the definition. In 2016, the GMHB found this update to be in compliance with the requirements of the GMA.

Existing and ongoing agricultural activity exemptions and allowances for maintenance or repair may not continue or transfer when a new use is established and the existing and ongoing agricultural activity is discontinued. If an agricultural use is converted, the converted use may be subject to certain provisions in the ordinance.

In addition to defining the length of time an agricultural activity must be in use, further definitions of ongoing and existing agriculture commonly include:

- Current use in areas designated as agricultural lands of long-term significance.
- Activities involved in the production of crops or livestock, operation and maintenance of existing farm and stock ponds or drainage and irrigation ditches.
- Changes between agricultural activities, such as crop rotation, are still considered ongoing and existing activities.
- Typically, activities that bring an area into agricultural use are not part of an ongoing activity.
- An operation ceases to be ongoing when the area on which it was conducted has been converted to a nonagricultural use. In a few instances, a county offers an extension for the ongoing or existing use designation.

2.4 “Agricultural Activities”: Description and Definition

Nearly all county CAOs reviewed for this report include an “agricultural activities” definition. The definitions vary among jurisdictions due to characteristics of the agricultural land within their county. For example, Pacific County includes aquaculture activities and inland counties primarily define agriculture pertaining to the production of crops, livestock, grazing, cultivation and harvesting. Several jurisdictions reference an RCW for their definition. The two common RCW definitions are described below.

The Voluntary Stewardship Program references the Shoreline Management Act’s definition of agricultural activities [RCW 90.58.065](#). The definition states:

“agricultural uses and practices including, but not limited to: Producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; allowing land used for agricultural activities to lie fallow in which it is plowed and tilled but left unseeded; allowing land used for agricultural activities to lie dormant as a result of adverse agricultural market conditions; allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities, provided that the replacement facility is no closer to the shoreline than the original facility; and maintaining agricultural lands under production or cultivation”.

Jurisdictions, such as Island County, also refer to [RCW 84.34.020](#) (for open space, agricultural and timberlands) to define agricultural activities within their development regulations. Ordinances do not typically include forest practices in the definition of ongoing and existing agricultural use.

Wahkiakum County
exempts existing and ongoing agriculture from critical areas protection, however, in order to receive the exemption, the county administrator may require documentation such as a dated photograph and/or video, old maps drawn by registered engineers or surveyors, evidence of established agricultural plants, farm records or farm plans prepared by the local conservation district of the agricultural extension service.

2.5 “New Agriculture”: Description and Definition

New and expanded agriculture is not addressed consistently among jurisdictions. In general, counties do not include a definition for ‘new’ agriculture in their CAO. In some instances new agriculture is regulated, but primarily if the development code exempts ongoing and existing agricultural uses, it is presumed that anything not meeting that definition, including new or expanded agriculture, must comply with the provisions in the ordinance. [Jefferson County](#) defines “new” agriculture as agricultural activities proposed or conducted after 2003 that does not meet the definition of “existing and ongoing” agriculture. Several county development codes regulate new or expanding agriculture per the conditions of their CAO or their livestock ordinance. [King County](#), for example, states that new agriculture or the expansion of

agriculture is allowed in a specific set of critical areas if the use meets the development standards for each of the critical areas. Clallam County requires new and expanded agricultural activities to comply with both the substantive and procedural provisions of their ordinance.

2.6 Impact Ratings for Agricultural Activities

Several counties use intensity or impact ratings to categorize and regulate agricultural activities in critical areas. The rating system is used to categorize agricultural activities into low, moderate and high-impacts. The impact level determines allowed uses and effective regulations for each of the five critical areas, with primary focus on wetlands and buffers.

[Clallam County](#) uses high-to-low risk assessment criteria for evaluating existing and ongoing agriculture within and adjacent to aquatic habitat conservation areas and wetlands. The ratings are based on risk assessment scores from six performance standards and four environmental categories (river and streams, wetlands, ponds, irrigation/drainage ditches, livestock and heavy use areas, and manure storage). Depending on the rating: high, moderate or low-risk, various protection standards are required. Agricultural activities are compliant if they score moderate-to-low-risk in the assessment. If the agricultural use is found to be causing harm or receives a high-risk rating in 1 of the 6 performance standards then the agricultural operator is required to develop a farm conservation plan. The purpose of the plan is to reduce the risk assessment from high to moderate.

In [Whatcom County](#) ongoing low-impact agricultural uses are permitted, but also subject to monitoring and adaptive management through a required standard farm conservation plan. Ongoing moderate-to-high-impact farm or livestock operations follow the same guidelines, but must implement a custom farm conservation plan. [King County](#) also uses farm plans to bring agricultural activities with moderate-to-high-impacts into compliance with low-to-moderate impact standards.

Chapter 3: The Five Critical Areas and Agricultural Regulations

3.0 The Five Critical Areas and Agriculture Regulations

Non VSP counties' CAOs were reviewed to provide a summary of common regulations and exemptions that relate to agricultural operations in critical areas. The five critical areas include: wetlands, critical aquifer recharge areas, geologically hazardous areas, fish and wildlife habitat conservation areas and frequently flooded areas. Some jurisdictions provide a general exemption for low-impact existing and ongoing agricultural activities within critical areas and other counties regulate agricultural uses within a specific critical areas chapter. Agricultural uses are rarely regulated within each critical area. Performance standards are commonly used as a means to protect critical areas from adverse impacts associated with agricultural activities.

3.1 Geologically Hazardous Areas

Geologically hazardous areas are defined as areas that are susceptible to erosion, sliding, earthquake, or other geological events. Due to the risks associated with these areas, they are not suited to the siting of commercial, residential, or industrial development [RCW 36.70A.030\(9\)](#).

The review of development regulations showed that many counties permit existing and ongoing agricultural uses within geologically hazardous areas. The exemption generally includes all geologically hazard areas, but in some instances the regulation specifically includes permitted or prohibited activities in erosion hazard areas, landslide areas, volcanic areas, and seismic hazard and channel migration zones. In [King County](#), for example, horticultural activities, grazing livestock, and maintenance of farm ponds, fish ponds or livestock watering ponds that have been in continuous existence are allowed in landslide areas over 40 percent slope and in steep slopes. With a farm management plan, maintenance of agricultural drainage, if used by salmonids, and construction of a farm field access drive are also allowed in those areas.

Whatcom County:

“Agricultural activities may be allowed within geologically hazardous areas without a farm conservation plan; except that a farm conservation plan shall be required for agricultural areas within landslide hazard areas and associated buffers.”

3.2 Wetlands

Wetlands are defined as areas that are inundated by surface or groundwater at a frequency and duration to

support vegetation adapted for life in saturated soils. Wetlands generally include swamps, marshes, and bogs ([RCW 36.70A.030\(21\)](#)). The definition does not include artificial wetlands such as irrigation and drainage ditches, grass-lined swales or farm ponds.

Agricultural activities can cause disturbances to wetlands in a variety of ways. The conversion of fields to pastures can alter the structure of a wetland, changes in water use due to agricultural practices affect wetlands, and nutrients and chemicals associated with agricultural operations can also impact sediment, flow and the drainage of wetlands. For these reasons, most counties provide detailed guidance on allowed and regulated agricultural uses in wetlands and their buffers more than in any other critical area.

Jurisdictions categorize wetlands based on the ecological characteristics of the wetland and standards from state and federal sources. The categories are used to apply appropriate regulations to protect wetlands from adverse impacts associated with a variety of activities, including those associated with agricultural operations.

Below is a list of the most common permitted and regulated uses related to agricultural activities in wetlands and/or wetland buffers.

Permitted Uses:

- Construction of a structure that is associated with an agricultural use; or the reconstruction, remodeling, or maintenance of such structures in wetland buffers (subject to specific criteria)
- New agricultural activities, such as horticulture, grazing livestock, maintenance of agricultural drainage, farms ponds and fish ponds, livestock watering pond, and a farm field access drive may be permitted with some of the following actions: an approved farm plan, mitigation, compliance with wetland protection standards, wetland boundary buffer signs, aquatic habitat conservation area standards, or a wetland application and delineation report. These same activities, if in continuous existence, may also be allowed in aquatic areas, buffers and severe channel migration areas.

Regulated Uses:

- Removal, excavation, grading, or dredging of material of any kind, including the construction of ponds.
- Reconstruction, demolition, or expansion of any structure.
- Destruction or alteration of wetland vegetation through clearing, harvesting, shading, application of herbicides or pesticides, or planting of vegetation that would alter the character of a regulated wetland.

- Activities that would result in a significant change of physical or chemical characteristics of wetlands water sources including quantity.
- Agricultural activities adjacent to agricultural riparian areas.
- Introduction of pollutants.
- Animal husbandry.
- In Kitsap County, farm conservation plans or fencing may be required to avoid impacts to wetlands.
- Conversions of wetlands to agricultural use are subject to compensatory mitigation, including avoidance and minimization.

Several counties do not regulate all agricultural uses in wetlands. Instead, they address a specific agricultural activity that is known to be high-risk in a wetland critical area. Another approach jurisdictions use, rather than listing prohibited uses, is to provide a list of permitted activities in wetlands and buffers with the requirement for all reasonable measures to avoid adverse impacts be implemented.

The Washington State Department of Ecology's (Ecology) [Wetland Guidance for CAO Updates Document](#) acknowledges the broad exemption typically given to existing and ongoing agricultural activities. However, they caution that these activities should be clearly defined and should not include removing trees, diverting or impounding water, excavation, ditching, draining, culverting, filling, grading or employ similar activities that cause adverse impacts to wetlands or other aquatic resources. Additionally, Ecology's guidance document states that maintenance of agricultural ditches should be limited to removing sediment in existing ditches to a specified depth at a date of last maintenance. Lastly, they advise that conversion of wetlands to new agricultural use should be subject to the same regulations for new development.

[Skamania County](#) allows the following in wetland buffers:

- Structures under 120 sq. feet in area, which are exempt from building permits
- Existing structures already located within the watershed protection area buffers, ponds, lake buffers, streams, creeks, and rivers that expand 100% or less of their original footprint.

3.3 Fish and Wildlife Habitat Conservation Areas

Fish and wildlife habitat conservation areas provide habitats and species needed for the functional integrity of an ecosystem. Fish and wildlife habitat conservation areas include: areas where endangered, threatened or sensitive species are found, habitats and species of local importance, commercial and recreational shellfish areas, kelp and eelgrass beds and other forage fish spawning areas, naturally occurring ponds under twenty acres, lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity, and state natural area preserves, natural resource conservation areas and state wildlife areas ([WAC 365-190-130](#)). Fish and wildlife habitat conservation areas do not include irrigation delivery systems, irrigation infrastructure, irrigation canals or drainage ditches within the boundaries or maintained by a port or irrigation district or company ([RCW 36.70A.030\(5\)](#)).

Due to the important functions and values of fish and wildlife habitat conservation areas for key wildlife and their habitats, most county CAOs regulate agricultural activities within these critical areas. Additionally, compensatory mitigation may be required for all adverse impacts that cannot be avoided.

Below is a list of common permitted and regulated agricultural uses in fish and wildlife habitat conservation areas.

Permitted Uses:

- Existing and ongoing agricultural activities, such as: ditching, tilling, dredging, or grading if conducted to repair and/or maintain existing irrigation and drainage systems necessary for agriculture, existing structures.
- Construction of a structure that is associated with an agricultural use.
- Reconstruction, remodeling, or maintenance of such structures (subject to specific criteria).

Island County: Buffer provisions in fish and wildlife habitat conservation areas are not intended to require the establishment of natural buffers within the boundaries of existing and ongoing agricultural activity, unless it's related to mitigation for a development unrelated to the existing and ongoing agricultural activity.

- Existing and ongoing: horticultural activities, grazing livestock, construction of a farm field access drive, maintenance of livestock manure storage facilities, agricultural drainage, farm ponds, fish ponds, or livestock watering ponds may be allowed in wildlife habitat conservation areas and wildlife habitat networks, if they have been in continuous use. The same activities are allowed if they are new uses with an approved farm management plan.

Regulated Uses:

- Chemical application, the use of pesticides, herbicides, or fertilizers in fish and wildlife habitat conservation areas unless permitted through an approved farm plan or the United States Environmental Protection Agency.
- New cultivation.
- Chemical storage is not permitted within a fish and wildlife habitat conservation area or its buffer.
- Use of livestock in aquatic habitat conservation areas or their buffers, proposals to allow livestock access to aquatic habitat conservation areas, or alterations of these areas for the use of livestock may require impacts to be controlled through a mitigation plan.
- Alteration of aquatic habitat conservation areas.
- Fencing may be required in buffers when agricultural activity is introduced in fish and wildlife habitat conservation areas.

3.4 Frequently Flooded Areas

Frequently flooded areas are lands in the floodplain which have at least a 1 percent or greater chance of flooding in any given year, or are within areas that flood due to high groundwater. These areas can include: streams, rivers, lakes, coastal areas, wetlands,

[Pierce County's](#) allowed uses in floodways and flood fringe areas: Storage of agricultural chemicals, fertilizers, pesticides, and similar hazardous materials shall be permitted only where no other on-site storage alternative outside the floodplain exists and the building permit is accompanied by a written description of how on-site storage procedures will prevent the release of agricultural chemicals during a flood event. Agricultural accessory structures are also regulated in floodways and flood fringe areas with requirements for their design. Livestock flood sanctuaries are allowed in floodways if certain criteria are met, as required by [RCW 86.16.190](#).

and areas where high groundwater forms ponds on the ground surface [[WAC 365-190-030\(8\)](#) and [RCW 36.70A.030](#)]. Frequently flooded areas offer habitat that supports salmon and other species. Many jurisdictions regulate agricultural activities in floodplains, floodways and flood hazard zones to protect riparian habitats, endangered species and reduce flood risks.

Commonly permitted and regulated agricultural activities within frequently flooded areas are included below.

Permitted Uses:

- Agricultural activities in compliance with the USDA Natural Resources Conservation Service standards through an approved farm management plan may be permitted in flood hazard zones.
- Minor repairs of an existing structure within the same footprint may be approved in floodways.
- Repairs and reconstruction of non-residential agricultural structures on the farm site outside of the designated floodway may be permitted.
- With specific restrictions, storage and manufacturing of compost from on-site feedstock may be permitted outside Federal Emergency Management Agency (FEMA) mapped floodways in farm land.
- Import and application of compost for soil amendment (quantity regulated) on agricultural land may be permitted when on land outside FEMA floodways.
- With compliance of a farm conservation plan and best management practices, the construction of access roads in special flood hazard areas as designated by FEMA in agricultural zones may be permitted.
- Agricultural activities that do not require the installation of structures, do not require a building permit, and that do not have associated fill may be allowed in floodways.
- Repair, reconstruction, replacement and improvements to existing farmhouses within Agricultural Resource Land or Rural Farm zone may be allowed when in compliance with a list of special conditions in Pierce County.

Regulated Uses:

- Storage of agricultural chemicals, fertilizers, pesticides, and similar hazardous materials in agricultural accessory structures that may contaminate surface and groundwater in the event of a flood. This includes storage in agricultural accessory structures.
- [King County](#) regulates the construction or expansion of existing farm pads and existing livestock manure storage facilities in zero-rise flood fringe areas.

3.5 Critical Aquifer Recharge Areas

Critical aquifer recharge areas ordinances are vital to protect both the quality and quantity of a community's drinking water supply. The GMA defines critical aquifer recharge areas as areas with a critical recharging effect on aquifers used for potable water. The quality and quantity of groundwater in an aquifer is linked to its recharge area ([WAC 365-190-100](#)), making them vulnerable to contamination. Protecting critical aquifer recharge areas from contamination sources is very important. For this reason, many jurisdictions regulate agricultural activities that present the most risk to groundwater quality. Many counties use performance standards to protect critical areas from adverse impacts associated with a particular agricultural activity.

Benchmarks, monitoring and adaptive management for critical aquifer recharge areas are different from surface observable critical areas, because measurements of groundwater quality and quantity is from sampling or measuring wells, due to the expense associated with it and the difficulty of access to the sites. Groundwater monitoring at agricultural sites are done voluntarily because it requires permission from the property owner. Some jurisdictions state goals to improve groundwater quality or to maintain uncontaminated sources or may even have a groundwater monitoring program. Below is a list of commonly permitted and regulated agricultural uses in critical aquifer recharge areas.

Permitted Uses:

- New agricultural activities that do not involve hazardous substance handling or application may be allowed within an aquifer recharge wellhead protection area with a farm management plan prepared by an approved entity that certifies the water quality and quantity within the aquifer is maintained.

Regulated Uses:

- [Clallam County](#) New agriculture or hobby farms are required to implement best management practices for animal keeping, animal waste disposal, fertilizer use, pesticide use, waste water applications, and stream corridor management and seek the technical assistance of the conservation district or cooperative extension agent.
- New agriculture or hobby farms in Clallam County are required to use best management practices for animal keeping, animal waste disposal, fertilizer use, pesticide use, waste water applications, and stream corridor management.
- Animal feedlots, and large-scale storage or use of pesticides, insecticides, herbicides, or fertilizers used by commercial or agricultural operations are typically prohibited.

Chapter 4: Critical Area Categories Related to Agriculture

4.0 Critical Area Categories Related to Agriculture

This section includes a summary of agricultural-related categories commonly found in the CAOs reviewed for this report. Most counties specifically address nonconforming uses and structures, maintenance, repair, reconstruction and remodeling, and agricultural chemicals. An overview of policy recommendations and requirements related to incentives, outreach, monitoring, adaptive management, best management practices and best available science are outlined below.

4.1 Nonconforming Uses, Structures and Preexisting Structures

All jurisdictions address nonconforming and preexisting structures within CAOs. Some counties additionally distinguish between agricultural structures and other types of structures. Below is a list of regulations that apply to nonconforming structures and uses.

- Any building or structure that was on the premises prior to or on the effective date of the critical areas ordinance adoption may typically be continued.
- A nonconforming structure destroyed by fire, explosion, flood or other casualty may be restored or replaced if an alternative that would comply with the standards of the ordinance cannot be found.
- Reconstruction of the nonconforming structure is typically only permitted within a specified time period, often ranging from 12-18 months of the damage. The reconstruction cannot expand, enlarge or increase the structure.
- Any regulated development intended to alter, expand, replace, or reconstruct, or otherwise increase the nonconformity of a pre-existing use or structure that is located within a critical area or its buffer.
- If a nonconforming use is abandoned for a period of twelve months or more, the future use would be subject to the provisions of the ordinance. After twelve months, if a building permit is requested, removal of the nonconforming building and restoration of the critical area may be required to comply with the provisions in the ordinance.
- Expansion, alteration or intensification of nonconforming uses, buildings/structures (excluding normal maintenance).

4.2 Access Roads

Exemptions and regulations pertaining to access roads are typically located within the critical areas chapter of the CAO. [Whatcom County](#) allows access roads in landslide hazard areas if reasonable measures are taken to minimize risks and other adverse impacts. In [Wahkiakum County](#), access roads are exempt. The construction of access roads may be allowed in special flood hazard areas as designated by FEMA in agricultural zones, wetlands, and wildlife habitat conservation areas if in compliance with a farm conservation plan and best management practices.

4.3 Reconstruction and Remodeling

Reconstruction and remodeling of existing structures are exempt if they do not further encroach or serve to expand, enlarge or increase the structure into the critical area or its associated buffers. Reconstruction, restoration or repair of an existing legal structure is commonly permitted, so long as it meets the following criteria: it was damaged by fire,

[King County](#) allows new farm field access roads in wetlands and wildlife habitat conservation areas with an approved farm management plan.

explosion, flood, earthquake or other disaster or casualty. Typically, reconstruction, remodeling, repair or restoration must be conducted in a particular timeframe, generally between twelve months to three years. After that time period has elapsed, any reconstruction or repair would be subject to the conditions found in the development regulations. Structures in existence on the effective date of the ordinance that do not meet the setback or buffer requirements may be remodeled or reconstructed so long as that activity does not further intrude into the critical area or its buffer. [Pierce County](#)

allows repair, reconstruction, replacement and improvements to existing farmhouses within agricultural resource lands or rural farm zones in floodways when they are in compliance with the standards of their CAO and follow a list of very specific guidelines. They provide a similar list of standards to approve the construction of new and existing non-residential agricultural structures.

4.4 Maintenance and Repair

Normal maintenance and repair of existing legal structures is typically exempt if the maintenance or repair complies with all sections in the code. Normal and routine maintenance and repair, in some cases, is extended to preexisting farm ponds, manure lagoons, livestock

water ponds, fish ponds and irrigation and drainage ditches so long as the activity does not convert wetlands not currently being used for that activity.

4.5 Fencing and Signage

Some jurisdictions require fencing to protect wetlands and buffers from adverse impacts associated with livestock and to enhance water quality. For example, [King County](#) requires fencing setbacks for livestock. [Whatcom County](#) may exempt the maintenance and/or repair of existing infrastructure improvements to fences with written notification to the County technical administrator.

Kitsap County:
Introduction of agriculture in a fish and wildlife habitat conservation area shall include protection measures by installing fencing located not closer than the outer buffer

4.6 Agricultural Chemicals

County development regulations include restrictions on pesticides, fertilizers, insecticides and herbicides, in at least one of the five critical areas. Most commonly, regulations restrict or prohibit use or storage of agricultural chemicals in floodways, flood fringe areas, aquifer water recharge areas, fish and wildlife habitat conservation areas and their buffers. They may be exempt in certain areas with approval from the US Environmental Protection Agency or Washington State Department of Ecology and must be applied by an applicator licensed through the Washington State Department of Agriculture.

Chapter 5: Voluntary and Regulatory Approaches

5.0 Voluntary and Regulatory Approaches

An overview of policies and requirements commonly found for incentives, outreach, monitoring, adaptive management, best management practices and best available science were not fully outlined in all jurisdictions, but the categories below show additional approaches to encourage critical area protection through both voluntary and regulatory measures.

5.1 Incentives, Funding, Education and Outreach

Jurisdictions are encouraged to implement both regulatory and non-regulatory measures to ensure the protection of critical areas. Several jurisdictions use voluntary and incentive-based recommendations within their CAOs. These counties encourage stewardship of the land to provide benefits to fish and wildlife, often in partnership with the conservation district, federal NRCS and regional non-profit organizations.

[Jefferson County](#) provides general resource education and site-specific assistance to help landowners understand why it is important to improve their management practices in a way that benefits both the landowner and natural resources. The County assists and encourages landowners to participate in private, state and federally funded resource enhancement projects, while also seeking outside sources of grant funds to increase resource stewardship programs. Their countywide monitoring plan documents improved water quality as a result of voluntary landowner stewardship.

Many jurisdictions encourage agricultural land owners to complete farm management plans. The plans can be used to leverage and qualify for federal, state or local funding to implement techniques and strategies to improve agricultural operations.

[Clark County](#) contacts property owners potentially impacted by the critical areas ordinance to offer assistance and technical support in the development of individual stewardship plans. In collaboration with conservation and stewardship groups, the County also develops manuals to explain best management practices and offers seminars and presentations. Nonmonetary incentives are offered to property owners that implement projects that exceed mitigation requirements.

5.2 No Harm or Degradation Standard

Several counties reference the “no harm or degradation standard” in their CAO. The “no harm” standard depends on benchmarks and monitoring data, which may not be available for all critical areas, particularly critical aquifer recharge areas. Clallam County states that existing and ongoing agriculture must be conducted so as to not cause harm or degradation to the existing functions and values of aquatic habitat conservation areas, wetlands, or their associated buffers. A definition of the no harm standard is also included in their ordinance.

5.3 Right to Farm

Several counties refer to right to farm regulations within their CAO, emphasizing that any regulation must also be consistent with the policies set forth in [RCW 7.48.305](#).

5.4 Monitoring, Adaptive Management & Performance Standards

A successful monitoring and adaptive management program establishes baseline information and performance measures with the use of best available science. The GMA does not list a specific requirement for monitoring and adaptive management to assure critical areas protection. In [WAC Chapter 365-195](#), on best available science, jurisdictions are encouraged to monitor and evaluate their efforts in critical areas protection and to include new scientific information as it becomes available ([WAC 365-195-905](#)). In the absence of valid scientific information, cities and counties are recommended to use an adaptive management program in the interim ([WAC 365-195-920](#)). Monitoring of agricultural activities are required for participating counties within the VSP, including goals and benchmarks [\[RCW 36.70A.705\(5\)\]](#).

Farm plans are often subject to monitoring adaptive management to ensure plan goals, strategies and best management practices are effective in the protection of critical areas. Monitoring may include periodic site inspections or self-assessment by the farm operator. This applies to new and expanding agriculture and existing and ongoing farm operators that choose to develop a farm plan. Adaptive management and monitoring may be applied to individual farm plans to ensure stewardship goals are met for that property. In Whatcom County, a technical administrator, in partnership with the farm operator, shall monitor plan implementation with periodic site inspections and self-assessments by the farm operator. In King County, monitoring efforts evaluate the success of farm plans in a programmatic review. The county department of natural resources and parks and environmental review monitor and evaluate the effectiveness of all farm plans in the county in meeting the goals of their critical areas ordinance.

[Clallam County](#) conducts monitoring on farms participating in the alternate standards program. An annual report is issued by the administrator. The report includes the number and location of participants, the risk assessment worksheets, the change in aquatic habitat conservation areas, and wetland native vegetation cover adjacent to agricultural operations. If the report indicates that functions and values are being met, the reports will be conducted every five years.

Performance standards are used to determine the success of conservation plans and mitigation techniques. They are measurable and quantifiable indicators of performance and are often used to evaluate the effectiveness of objectives and goals. Many jurisdictions list specific performance standards within their CAO and in some cases, the performance standards are embedded within the farm plan. Performance standards are used to rate the risk of agricultural activities in critical areas. A risk assessment may be conducted using a series of performance standards to determine allowed uses. Monitoring methods are then used to assess the effectiveness of the performance standards. Whatcom County measures plan performance and implementation strategies by requiring that benchmark conditions be described and documented with photos and written reports within the farm conservation plan.

Performance standards vary depending on the critical area being protected and the type of activity proposed for the area. However, they typically include a timeline of when and what activities will occur, a list and description of what will be monitored, a timeline including implementation and

details of the long-term monitoring and maintenance plans. The length of time for monitoring and maintenance should be sufficient to determine if performance standards have been achieved. The performance standards are focused on maintaining, protecting and enhancing functions and values of the critical area.

5.5 Best Management Practices

CAOs commonly refer to the United States Department of Agriculture Natural Resources Conservation Service Field Office Technical Guide (FOTG) as the resource for best management practices. The technical guide is the primary scientific reference used by NRCS. It includes localized data for each county with detailed information on conservation techniques of soil, water, air, plants and animals in that geographic area.

Additionally, the following list of agencies is commonly referenced for expert guidelines on performance standards, techniques and technical information to inform the development of best management practices:

- Natural Resources Conservation Service, US Department of Agriculture
- County Conservation Districts
- Washington State Department of Ecology
- Washington Department of Fish and Wildlife
- US Fish and Wildlife Service
- Washington State Department of Agriculture
- Washington Department of Health

In most cases, for project approval, farm plans, stewardship plans, and other documents require a description of best management practices. The Washington State Department of Ecology encourages the use of BMPs in their [Wetland Guidance for CAO Updates document](#). It states that BMPs are intended to minimize the effects of ongoing agricultural activities on water quality, riparian ecology, salmonid populations, and wildlife habitat. While NRCS is the most common resource used to develop BMPs, some counties authorize other sources for the development of a farm management plan. For example, Whatcom County notes that alternatives to NRCS recommendations from a land grant college or a professional engineer with expertise in the area of farm conservation planning may also be used to develop appropriate methods and technologies in a farm conservation plan.

King County farm plans pertaining to livestock operations generally include the following best management practices: building stream or wetland buffers, manure management practices, water runoff management, pasture management and riparian revegetation.

5.6 Best Available Science

Counties and cities are required to include the best available science ([RCW 36.70A.172\(1\)](#)) when developing their critical areas regulations and must give special consideration to conservation and protection measures to preserve or enhance anadromous fisheries. The inclusion of best available science in development regulations is especially important to salmon recovery and to other threatened or endangered species and their habitats, [WAC 365-195-900](#). [WAC 365-195-905](#), describes the criteria for determining which information is the best available science.

The Washington Department of Ecology's (Ecology) publication, [State of the Science](#), provides guidance for protecting and managing wetlands at the local level. Additionally, Ecology staff is

dedicated to working with counties to aide in the development of effective regulations to protect wetlands, using the best available science.

Ecology also has a publication, [Critical Aquifer Recharge Areas Guidance Document](#), which provides guidance for best available science for the protection of the functions and values of critical aquifer recharge areas.

Chapter 6: Farm Conservation Plans

6.0 Farm Conservation Plans

The Voluntary Stewardship Program (VSP) incentivizes agricultural property owners to develop stewardship plans to protect and enhance critical areas and agricultural land. Many of the twelve counties that are not enrolled in VSP similarly utilize the benefits of farm management or conservation plans to ensure best management practices are well developed and implemented on agricultural land within critical areas. Depending on the critical area involved and the risk level associated with the agricultural activity, a farm plan may be required.

Farm management plans are intended to maintain productive and economically viable agricultural land, while protecting and enhancing critical areas and water quality through the use of best available science and effective mitigation measures. The plan typically addresses:

- Farm size
- Soil types
- Slope of the land
- Location of streams and water bodies
- Type of crops or livestock
- Machinery and farm buildings

With this information, the goals of the farm operator are incorporated to make a successful plan. Further, the plan will address any activities that have potential to affect water quality and to reduce impacts from farm activities on natural resources. Solutions to avoid or minimize adverse impacts with mitigation techniques are included. Examples include: manure management techniques, fencing, gutters and downspouts, weed management and pasture renovation.

Farm plans are not only intended for large, commercial operations. King County Conservation District will work with farms of all sizes to develop a unique farm plan. See their [farm plan factsheet](#).

Common farm plan contents:

- **Goals:** restore or enhance critical areas and hydrologic systems.
- **Inventory maps:** critical areas, designated habitat areas, existing and proposed structures, cleared and forested areas, utilities, roads, driveways, wetlands and property lines.
- **Planning Map, Scope and Timeline:** map and list proposed new agricultural activities, the scope of the agricultural activities, a timeline for their implementation, use of pesticides, fertilizers or other chemicals, and identification of existing habitat functions and values.
- **Implementation Plan:** description and implementation plan for performance standards, integrated pest management, mitigation measures and best management practices to be implemented for the maintenance, restoration and enhancement of critical areas and their buffers.
- **Future Plan:** changes to the site, including structures, land use conversion, and changes to the landscape.
- **Monitoring** to ensure the effectiveness of proposed strategies to protect critical areas. If monitoring shows the farm plan does not effectively protect critical areas a new farm plan may be required. Whatcom County farm plans are also subject to adaptive management.
- **Approval Process:** typically conducted by a NRCS, WDFW or conservation district certified agricultural technician, a qualified planning advisor or the county technical administrator. Approval is based on compliance with the BMPs of the NRCS field guide.
- **Compliance:** Once approved, the farm plan is considered in compliance with the County's critical areas provisions. Compliance is typically sought through education and voluntary measures, but an inspection may be required to confirm compliance. Refusal or inability to implement the farm plan effectively may result in the farm plan being revoked and then the property owner would be subject to provisions in the standard critical areas regulation. County planning advisors may provide suggestions to support compliance, but responsibility for compliance is typically with the farm operator. If compliance is not resolved, enforcement actions per the CAO may be applied.
- **Technical Assistance and Resources:** provided to the property owner through the county, conservation district, watershed improvement district or Washington State University agricultural extension office. This can include workshops, web-based information and manuals.
- **BMPs:** The most recent version of the [USDA NRCS Field Office Technical Guide \(FOTG\)](#) is often referenced for best management practices and standards within the plan.

[Clark County](#) utilizes agricultural/habitat protection plans when the expansion of existing and ongoing agricultural activities will impact riparian habitat areas. The plan includes specific standards for the riparian area and may include mitigation measures on land outside of the riparian area if it works to achieve the standard. A plan may be submitted by a group of landowners or neighbors if their properties are in close proximity. In this case, the standards would apply to all participants in a common plan.

- **Site Inspections:** evaluation, monitoring, compliance and enforcement of farm plan effectiveness are conducted by the County through scheduled site inspections and farm operator self-assessment.

6.1 Required Farm Plans

New agricultural activities in critical areas are often only permitted with an approved farm plan. However, a farm plan may not be required for new agricultural uses in all five critical areas. Commonly, farm plans are associated with uses in fish and wildlife conservation areas, wetlands and aquifer recharge areas to protect and enhance water quality. A farm plan may still be required in addition to a permit per the requirement of the development code. If a landowner's agricultural operation is found to be adversely impacting a critical area without appropriate mitigation, a farm plan may be required as a form of enforcement.

In [King County](#), previous farm plans remain valid for existing agricultural activities, but may require amendment if a landowner chooses to expand their agricultural operation.

Some jurisdictions offer two types of farm plans based on the impact of the agricultural activity. Standard

farm conservation plans are typically required for low-impact farm and livestock operations, and custom farm conservation plans are required for moderate and high-impact agricultural uses.

Farm plans may not authorize filling, draining, grading or clearing activities in critical areas or their buffers unless the activities are essential to the ongoing agricultural use, do not expand the boundaries, and the impacts are mitigated. A farm conservation plan does not typically authorize construction of new structures.

In some cases, ready-made agricultural/habitat plans are made available for typical agricultural properties and activities. Plan modifications may be requested by the property owner. The

modification will be subject to the same review and approval process. Rescission of the plan is possible if all agricultural activity has ceased or if a landowner opts to use the County default option.

Nearly all of the twelve counties reviewed for this report make reference to a farm plan within their CAO. Some jurisdictions provide very thorough descriptions of farm plan requirements and others only refer to farm plans for specific agricultural uses in a particular critical area.

Below is a list of the non-VSP counties that utilize farm plans for the protection of critical areas, including a brief description of the farm plan regulation.

- **Snohomish** – Normal agricultural activities are in compliance when a farm conservation plan is developed. The plan shall include provisions for monitoring and maintenance over time to ensure that performance standards are effective.
- **Whatcom** – Low-impact agricultural operations complete a standardized farm conservation plan and moderate or high risk operations are required to complete a custom farm conservation plan.
- **Island** – Existing agriculture may voluntarily comply with a standard or custom farm plan.
- **King** – Four different types of farm plans are available depending on type of agricultural use.
- **Kitsap** – Introduction of agricultural uses that may damage wetlands may be permitted with the implementation of a farm conservation plan. Farm plans are not referenced for other critical areas or agricultural uses.
- **Pierce** – New farm and agricultural activities may be permitted in wetlands and fish and wildlife habitat conservation areas with an approved farm management plan.
- **Clark** – Individual Stewardship plans are used to encourage education and voluntary conservation measures. Property owners with approved stewardship plans are exempt from regulations in the chapter. County staff contacts property owners potentially impacted by wildlife habitat area regulations to assist in the development of a plan.
- **Wahkiakum** – Applicants may be required to establish a farm plan to minimize adverse impacts to wetlands.
- **Jefferson** – Farm plans are required to approve chemical application or storage within fish and wildlife habitat conservation areas.
- **Clallam** – A farm plan is required to address any agricultural activity that receives a high-risk rating in their risk assessment criteria worksheet. The intent of the farm plan is to lower the risk assessment for the performance standards of concern.

Snohomish County states that any confidential or proprietary information contained in a farm conservation plan may be redacted prior to public disclosure.

6.2 Voluntary Farm Plans

Farm plans are typically required for new or expanding agriculture and only encouraged for existing agricultural operations. A farm plan may not be required if the farm owner chooses to meet the regulatory buffer standards in the CAO, they obtain a permit, or receive a reasonable use exception.

Clark County encourages voluntary and educational conservation with a proactive approach. The County contacts property owners potentially impacted by

wildlife habitat area regulations to assist in the development of individual stewardship plans. Approved stewardship plans provide property owners with exemptions from regulations for non-development proposals that are consistent with the plan.

6.3 Conservation Districts

The support of local conservation district staff is essential for technical assistance, the development of farm and stewardship plans, education and outreach materials, best management practices and adaptive management strategies. Conservation districts may also be responsible for support with compliance, monitoring and implementation strategies in collaboration with the farm operator and county planning department.

6.4 Proprietary Information

When partnering with conservation districts and local farm operators to develop farm plans, it is advised that the county CAO address how confidential and proprietary information will be handled. Summary information may be collected regarding the type of agricultural activity and best management practices implemented to serve as the basis for the approval of the plan.

In most instances, farm conservation plans are not open to public inspection unless required by law or court of competent jurisdiction. Financial, commercial and proprietary information in farm plans are typically exempt from disclosure unless permission is obtained from the landowner. Disclosure of farm plans for agricultural operations including dairies, animal feeding operations and concentrated animal feeding operations are addressed in [RCW 42.56.270\(17\)](#), [RCW 42.56.610](#), and [RCW 90.64.190](#). Upon request, a county may provide a sample conservation plan, exclusive of site or property specific information, to give general guidance on the development of a conservation plan.

Chapter 7: Critical Areas Ordinance Relationship to Other Regulations

7.0 Relationship to other Regulations

Critical areas contain diverse ecology and habitat types, some of which are subject to more than one regulation. If such a conflict is found, the regulation which provides the most protection to the critical areas shall apply. Approval of a permit does not remove the applicant's obligation to comply with the restrictions of the applicable local, state and federal regulations. Agricultural operations are subject to all applicable regulations within CAOs and other county, state and federal regulations relevant to the agricultural operation and its activities. These statutes and regulations may include the following:

[King County](#) clarifies that if a farm plan addresses property within shoreline jurisdiction, the farm plan must be consistent with the goals of the SMA and the policies of the county SMP. The plan must ensure that there is no net loss of shoreline ecological functions.

- Hydraulic Project Approval
- Livestock Management Ordinance
- WA State Dairy Nutrient Management Act
- WA Shoreline Management Act
- Water Pollution Control Act
- Water Quality Standards for Surface Water
- Water Quality Standards for Groundwater
- Endangered Species Act
- Federal Clean Water Act
- Federal Emergency Management Agency Laws
- National Flood Insurance Program

7.1 Agriculture and Shoreline Master Programs (SMP)

In 1971, the State Legislature passed the Washington Shoreline Management Act (SMA) ([RCW 90.58.065](#)), to plan for and foster all reasonable and appropriate use while preventing harm to the shoreline environments. The SMA requires cities and counties with "shorelines of the state" to prepare and adopt a Shoreline Master Program (SMP) based on the unique geographic, economic and ecological make-up of each jurisdiction.

The SMA was amended in 2002 to clarify that SMPs cannot modify or limit agricultural activities occurring on land where agricultural activities are conducted. If there are conflicts between

critical areas regulations and SMP policies, the SMP provisions prevail. New agricultural activities must comply with SMP requirements when land is being converted from another use to agriculture. Washington State Department of Ecology (Ecology) rules clarify that new development that doesn't meet the definition of "agricultural activity," such as building a new barn, must comply with the SMP standards. While many agricultural developments are exempt from permit requirements, they must comply with the standards.

After Ecology approves a comprehensively updated SMP, critical areas within shorelines of the state are protected by SMPs and are not subject to procedural or substantive requirements of the GMA. However, Ecology rules clarify that jurisdictions may rely on CAOs within shoreline jurisdiction provided they meet Ecology standards. Ecology's [Shoreline Master Program Handbook](#) describes options for local governments to incorporate relevant portions of CAOs into SMPs directly, or adopting critical area provisions by reference.

Appendices

Appendix A: Clallam County Risk Assessment Criteria

LOW RISK	MODERATE RISK	HIGH RISK ¹
RIVERS, STREAMS, LAKES, & MARINE WATERS (AHCA). Buffers are measured from Ordinary High Water Mark (OHWM).		
<p>1(a). A year-round 50-foot or greater fully-vegetated buffer² is maintained with no livestock access.</p> <p>2(a) Manure application at rates not exceeding the crop nutrient needs occurs only outside the minimum 50-foot buffer, and only during the growing season⁴.</p>	<p>1(b). A year-round 35-foot minimum well-vegetated buffer³ is maintained with no livestock access.</p> <p>2(b) Manure application at rates not exceeding the crop nutrient needs occurs only outside the minimum 35-foot buffer, and only during the growing season⁴.</p>	<p>1(c). Less than 35-foot wide well-vegetated buffer³ is maintained or livestock have access to the buffer.</p> <p>2(c). Manure is not applied at rates based on crop nutrient needs, occurs within 35 feet of the OHWM, or is applied outside growing season⁴.</p>
WETLANDS & OTHER WATER FEATURES⁵ Buffers are measured from edge of wetland or water feature.		
<p>3(a). A year-round 50-foot or greater fully-vegetated buffer² is maintained between wetlands/water features and livestock or cultivation.</p> <p>4(a) Manure application at rates not exceeding the crop nutrient needs occurs only outside the minimum 50-foot buffer, and only during the growing season⁴.</p>	<p>3(b). A 35-foot minimum well-vegetated buffer³ is maintained between wetlands/water features and livestock or cultivation, except as outlined in footnote 8.</p> <p>4(b) Manure application at rates not exceeding the crop nutrient needs occurs only outside the minimum 35-foot buffer, and only during the growing season⁴.</p>	<p>3(c). Conditions specified in Criterion 3(b) are not met.</p> <p>4(c). Manure application occurs within the 35-foot buffer, manure is not applied at rates based on crop nutrient needs, or is applied outside the growing season⁴.</p>
LIVESTOCK HEAVY USE AREAS⁶		
<p>5(a). Livestock heavy use area is located at least 200 feet from AHCAs, Wetlands or Water Features.</p> <p>AND</p> <p>There is a year-round, 50-foot or greater fully-vegetated buffer².</p>	<p>5(b). Livestock heavy use area is located at least 100 feet from AHCAs, Wetlands or Water Features.</p> <p>AND</p> <p>There is a year-round, well-vegetated 50-foot buffer³ upon any portion of the AHCA, Wetland or Water Feature that is within 200 feet of the heavy use area.</p>	<p>5(c). Livestock heavy use area is located less than 100 feet from AHCAs, Wetlands, or Water Features,</p> <p>OR</p> <p>There is less than a 50-foot year-round well-vegetated buffer³ at all locations where (5)(b) requires the presence of such a buffer.</p>
MANURE STORAGE⁷		
<p>6(a). Manure storage structure is covered with a roof or tarp and located at least 200 feet from AHCAs, Wetlands, or Water Features.</p> <p>AND</p> <p>There is a year-round, 50-foot or greater fully-vegetated buffer².</p>	<p>6(b). Manure storage structure is covered with a roof or tarp and located at least 100 feet from AHCAs, Wetlands, or Water Features.</p> <p>AND</p> <p>There is a year-round, 50-foot well-vegetated buffer³ upon any portion of the AHCA, Wetland or Water Feature within 200 feet of the manure storage structure.</p>	<p>6(c). Manure storage is covered but located less than 100 feet from AHCAs, Wetlands, or Water Features.</p> <p>OR</p> <p>Manure storage is uncovered but located less than 200 feet from AHCA, Wetlands, or Water Features.</p> <p>OR</p> <p>There is less than a 50-foot year-round well-vegetated buffer³ at all locations where 6(b) requires the presence of such a buffer.</p>

Footnotes:

1. A Farm Plan will be required to address any of the six Risk Assessment Criteria that receive a rating of HIGH RISK.
2. A fully-vegetated buffer is generally comprised of 1/3 herbaceous (non-woody) outer area, and 2/3 inner area comprised of native trees, shrubs, and/or herbaceous vegetation. The inner area is closest to the AHCA, Wetland or Water Feature. The outer area shall achieve a total cover of 100% herbaceous vegetation (non-woody) within 3 years and the inner area shall achieve a total cover of 25% native trees or shrubs and a total cover of 100 % for all vegetation types within 5 years.
3. A well-vegetated buffer should be comprised of herbaceous (non-woody) in the outer area along with native trees, shrubs, and/or herbaceous vegetation in the inner area. The entire area shall achieve a total cover of approximately 75% herbaceous vegetation (non-woody) within 3 years and should also include native trees or shrubs.
4. Growing season is generally April through October.
5. Water Features include ponds, irrigation ditches, and drainage ditches that are hydrologically connected to AHCA or wetlands.
6. Heavy Use Areas includes areas where livestock are confined or congregate, such as feeding locations and wet season pasture areas (sacrifice areas) where polluted runoff may pose a risk to water quality. Does not apply to barns and sheds.
7. Manure Storage Includes collected liquid manure, solid manure, and bedding.
8. Buffer may be utilized for harvesting of forage, including grazing, when the water feature is dry if minimum forage height of 3 inches is maintained.

Appendix B: King County Farm Plan Fact Sheet



FARM PLANNING OVERVIEW

A farm conservation plan is a document developed by your Conservation District and you, the farmer or land manager. It's a series of actions designed to meet a farmer's goals while protecting water quality and natural resources. Some of the things considered in a farm plan are farm size, soils type, slope of the land, proximity to water bodies, type of livestock or crops and finances available. The King Conservation District works with farms of all sizes, from backyard horse owners to dairy and crop operations!

All services provided by the King Conservation District are free and without obligation. We are a non-regulatory, non-enforcement agency.

How it Works



Before Farm Plan

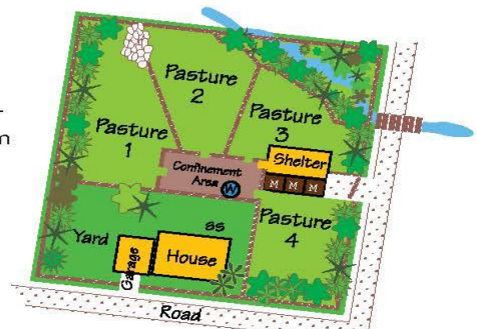
Planning starts with a site visit where a Conservation District farm planner listens to the farm goals and objectives and then walks the property with the manager to identify management challenges and natural resource concerns.

The planner then recommends possible actions such as rotational grazing, cover cropping, using manure as a fertilizer, targeted weed management, stream buffer planting and fencing, building a compost facility or establishing a heavy use paddock for livestock. The recommendations are reviewed by the farmer/ land manager and, with the help of a farm planner, a plan and schedule for actions is developed.

The final plan is a voluntary commitment. Once the farmer/land manager has decided on a course of action, a tentative implementation schedule is set and the farm plan is recorded. Revisions of the plan can be made as the goals and needs of the farm change.

In some cases, a farm plan can open the door to benefits such as financial assistance for projects, reduced farm development permit costs or eligibility for farm conservation tax reduction (PBRs). A farm plan may assist farmers in meeting the requirements of King County land management codes, including the Livestock Management Ordinance and the Critical Areas Ordinance.

If you would like help improving your stewardship of your farm, contact the Conservation District at 425-282-1900 and ask for farm planning assistance.



After Farm Plan

Appendix 5.B

Clallam County Risk Assessment Criteria

Clallam County Code

Chapter 27.12

(5) Existing, Ongoing Agriculture Risk Assessment Criteria.

(a) The success of farms and ranches in Clallam County depends in part on good quality soil, water, air and other natural resources. Agricultural activities that incorporate protection of the environment, including critical areas as defined by this chapter, are essential to achieving this goal. Agricultural activities are expected to be conducted in a manner that protects against harm or degradation to the existing functions and values of AHCA, wetlands, and their associated buffers.

(b) The Administrator shall utilize the low, moderate and high risk assessment criteria in Table 27.12.037(A) to evaluate existing, ongoing agriculture within and adjacent to AHCA's and wetlands. Existing, ongoing agricultural activities may have different risk assessment ratings based on the six performance standards and four risk assessment categories – river and streams, water features (wetlands, ponds, and irrigation/drainage ditches); livestock heavy use areas; and manure storage – in Table 27.12.037(A).

(c) The risk assessment criteria in Table 27.12.037(A) address agricultural activities located within AHCA's, wetlands, and their associated minimum standard buffers regulated under this chapter, and more intensive agricultural activities, i.e., manure storage, livestock heavy use, confinement areas, located within the 200-foot jurisdictional boundary of these critical areas. The risk assessment criteria in Table 27.12.037(A) also address nonregulated ponds and open irrigation/drainage ditches that are hydrologically connected to AHCA and wetlands, which may provide a means for pollution to cause harm and degradation to AHCA and wetlands.

(i) Low and Moderate Risk Agricultural Activities. Agricultural activities shall be deemed compliant with this section if they meet the low or moderate risk assessment criteria, unless it is determined by the Administrator that they are causing harm or degradation to the existing functions and values of AHCA's or wetlands located on real property owned, leased, or occupied by the person or entity completing the worksheet. If this occurs for one of the six performance standards, then the agricultural operation is required to develop a farm conservation plan to address activities causing harm or degradation. The intent of the farm conservation plan is, at a minimum, to lower the risk assessment for the specific performance standards of concern. The farm conservation plan shall be submitted to the Administrator for review and approval.

(ii) High Risk Agricultural Activities. Agricultural activities that receive a high risk assessment rating on any of the six performance standards are required to submit a farm conservation plan to address the high risk activities. The intent of a farm conservation plan is, at a minimum, to lower the risk assessment from high to moderate. The farm conservation plan shall be submitted to the Administrator for review and approval.

(iii) Farm Conservation Plans. Farm conservation plans under this section shall consider the USDA Natural Resources Conservation Service (NRCS) “Field Office Technical Guide” (FOTG) that contains a nonexclusive list of conservation practices (best management practices) to lower the risk from existing, ongoing agriculture to existing functions and values of AHCA and wetlands. The Clallam Conservation District may be available to provide assistance in the development of a farm conservation plan.

(iv) Existing Plans. Those portions of land upon which farm owners or operators have implemented a dairy nutrient management plan, a resource management system plan, or a conservation reserve enhancement program plan consistent with conservation practices and management standards that meet the FOTG quality criteria for each natural resource (soil, water, animals, plants, and air) and approved by the Clallam Conservation District or USDA Natural Resources Conservation Service are entitled to a presumption of compliance with the “no harm or degradation” standards described in subsection (4) of this section. This would be contingent on these plans not resulting in any high risk agricultural activities on any of the six risk assessment performance standards.

Table 27.12.037(A) Risk Assessment Criteria

(Ratings are based on lowest conditions)

LOW RISK	MODERATE RISK	HIGH RISK ¹
RIVERS, STREAMS, LAKES, & MARINE WATERS (AHCA) Buffers are measured from ordinary high water mark (OHWM)		
1(a). A year-round 50-foot or greater fully vegetated buffer ² is maintained with no livestock access. 2(a). Manure application at rates not exceeding the crop nutrient needs occurs only outside the minimum 50-foot buffer and only during the growing season ⁴ .	1(b). A year-round 35-foot minimum well vegetated buffer ³ is maintained with no livestock access. 2(b). Manure application at rates not exceeding the crop nutrient needs occurs only outside the minimum 35-foot buffer and only during the growing season ⁴ .	1(c). Less than 35-foot wide well vegetated buffer ³ is maintained or livestock have access to the buffer. 2(c). Manure is not applied at rates based on crop nutrient needs, occurs within 35-feet of the OHWM, or is applied outside growing season ⁴ .
WETLANDS & OTHER WATER FEATURES⁵ Buffers are measured from edge of wetland or water feature		
3(a). A year-round 50-foot or greater fully vegetated buffer ² is maintained between wetlands/water features and livestock or cultivation.	3(b). A 35-foot minimum well vegetated buffer ³ is maintained between wetlands/water features and livestock or cultivation except as outlined in footnote 8.	3(c). Conditions specified in criterion 3(b) are not met.

Table 27.12.037(A) Risk Assessment Criteria

(Ratings are based on lowest conditions)

LOW RISK	MODERATE RISK	HIGH RISK ¹
<p>4(a). Manure application at rates not exceeding the crop nutrient needs occurs only outside the minimum 50-foot buffer and only during growing season⁴.</p>	<p>4(b). Manure application at rates not exceeding the crop nutrient needs occurs only outside the minimum 35-foot buffer and only during the growing season⁴.</p>	<p>4(c). Manure application occurs within 35-foot buffer, manure is not applied at rates based on crop nutrient needs, or is applied outside the growing season⁴.</p>
<p>LIVESTOCK HEAVY USE AREAS⁶</p>		
<p>5(a). Livestock heavy use area is located at least 200 feet from AHCA, wetlands or water features.</p> <p>AND</p> <p>There is a year-round, 50-foot or greater fully vegetated buffer².</p>	<p>5(b). Livestock heavy use area is located at least 100 to 200 feet from AHCA, wetlands or water features.</p> <p>AND</p> <p>There is a year-round, well vegetated 50-foot buffer³ upon any portion of the AHCA, wetland or water feature that is within 200 feet of the heavy use area.</p>	<p>5(c). Livestock heavy use area is located less than 100 feet from AHCA, wetlands, or water features.</p> <p>OR</p> <p>There is less than a 50-foot year-round well vegetated buffer³ at all locations where 5(b) requires the presence of such a buffer.</p>
<p>MANURE STORAGE⁷</p>		
<p>6(a). Manure storage structure is covered with a roof or tarp and located at least 200 feet from AHCA, wetlands, or water features.</p> <p>AND</p> <p>There is a year-round, 50-foot or greater fully vegetated buffer².</p>	<p>6(b). Manure storage structure is covered with a roof or tarp and located at least 100 feet from AHCA, wetlands, or water features.</p> <p>AND</p> <p>There is a year-round, 50-foot well vegetated buffer³ upon any portion of the AHCA, wetland or water feature within 200 feet of the manure storage structure.</p>	<p>6(c). Manure storage is covered but located less than 100 feet from AHCA, wetlands, or water features.</p> <p>OR</p> <p>Manure storage is uncovered but located less than 200 feet from AHCA, wetland or water feature.</p> <p>OR</p> <p>There is less than a 50-foot year-round well vegetated buffer³ at all locations where</p>

Table 27.12.037(A) Risk Assessment Criteria

(Ratings are based on lowest conditions)

LOW RISK	MODERATE RISK	HIGH RISK ¹
		6(b) requires the presence of such a buffer.

Footnotes:

1. A farm plan will be required to address any of the six risk assessment criteria that receive a rating of "HIGH RISK."
2. A fully vegetated buffer is generally comprised of one-third herbaceous (non-woody) outer area, and two-thirds inner area comprised of native trees, shrubs, and/or herbaceous vegetation. The inner area is closest to the AHCA, wetland or water feature. The outer area shall achieve a total cover of 100 percent herbaceous vegetation (non-woody) within three years and the inner area shall achieve a total cover of 25 percent native trees or shrubs and a total cover of 100 percent for all vegetation types within five years.
3. A well vegetated buffer should be comprised of herbaceous vegetation (non-woody) in the outer area along with native trees, shrubs, and/or herbaceous vegetation in the inner area. The entire area shall achieve a total cover of approximately 75 percent herbaceous vegetation (non-woody) within three years and should also include native trees or shrubs.
4. Growing season is generally April through October.
5. Water features include ponds, irrigation ditches, and drainage ditches that are hydrologically connected to AHCA or wetlands.
6. Heavy use areas includes areas where livestock are confined or congregate, such as feeding locations and wet season pasture areas (sacrifice areas) where polluted runoff may pose a risk to water quality. Does not apply to barns and sheds.
7. Manure storage includes collected liquid manure, solid manure, and bedding.
8. Buffer may be utilized for harvesting of forage, including grazing, when the water feature is dry if minimum forage height of three inches is maintained.



Department of Commerce

Critical Areas Handbook

Chapter 6

Non-regulatory Incentive Programs: Opportunities for Critical Areas Protection and Restoration

June 2018
Brian Bonlender, Director

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Introduction

Regulations are just one tool to protect the many functions of critical areas. Along with regulations, there are many non-regulatory tools important to critical areas protection. These include voluntary stewardship actions taken by landowners, private groups, and the community; and market-based programs such as transfer of development rights. A complete critical areas program should educate and inform the public about the value of critical areas protection and help them understand best management practices on their property.

Protecting some critical areas may require both regulatory and non-regulatory measures. When impacts to critical areas are from development beyond jurisdictional control, counties and cities are encouraged to use regional approaches to protect functions and values. It is especially important to use a regional approach when giving special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. Conservation and protection measures may address land uses on any lands within a jurisdiction, and not only lands with designated critical areas.¹

Non-regulatory programs provide incentives for restoration, in addition to protection. The GMA requires local governments to adopt regulations to protect critical areas, but there is no duty on local governments to enhance critical areas.² Non-regulatory incentive programs allow local government to take advantage of opportunities for enhancement or restoration of critical areas. And they provide resources for landowners, private groups and the community to pursue restoration opportunities.

In pursuing the environmental protection and open space goals and requirements of the GMA, comprehensive plan policies should identify non-regulatory measures for protecting critical areas in addition to regulatory approaches. Non-regulatory measures include incentives, public education, public recognition, and innovative programs, such as transfer of development rights.³ This chapter addresses programs local government can adopt, state-provided programs available to landowners or local government, and federally-provided programs available to landowners or local government.

Local Government Non-regulatory Incentive Programs

Local governments have a variety of tools available to them for creating non-regulatory incentive programs to protect or restore critical areas. Local governments can determine which tools meet their needs.

Counties can adopt a Public Benefit Rating System Open Space Tax Program⁴ to allow property owners a tax incentive to protect open space and critical areas on their property. The county legislative authority

¹ WAC 365-196-830(7)

² *Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board*, 161 Wn.2d 415 (2007)

³ WAC 365-196-485(1)(f)

⁴ RCW 84.34.055

can direct the planning commission to set open space priorities and adopt an open space plan and public benefit rating system. Priority consideration must go to lands used for buffers that are planted with or primarily contain native vegetation. Qualifying property owners can then have their open space, farm and agricultural, and timber lands valued at their current use rather than at their highest and best use.⁵

Counties can also adopt a Conservation Futures property tax levy⁶ of 6.25 cents to secure funds for acquisition of right and interests in real property. Counties have used these funds to acquire property in fee or to acquire conservation easements to protect open space and habitat.

Local [conservation districts](#)⁷ offer a range of voluntary services, including help with erosion control, habitat restoration, manure management, wildfire prevention/mitigation, stormwater management, forest plans, irrigation efficiency, noxious weed control, fish barrier removals, livestock stream crossings, and more. The Washington State Conservation Commission web site provides a [conservation district map and directory](#)⁸.

Counties and cities are also encouraged to use innovative land use techniques, such transfer or purchase of development rights or other conservation easement programs to encourage retention of appropriate agriculture, resources and programs around Puget Sound on the [Regional Transfer of Development Rights web site](#).⁹

State Government Grant Programs

Grant programs for riparian habitat conservation and restoration projects on public and private lands are available through the [Recreation and Conservation Office](#)¹⁰ (RCO) and Salmon Recovery Funding Board. To access these funds, contact the Recreation and Conservation Office. Grant funds include:

- [Aquatic Lands Enhancement Account](#)¹¹ for the acquisition, improvement, or protection of aquatic lands for public purposes, or to provide or improve public access to the waterfront.
- [Washington Wildlife and Recreation Program](#)¹² for a broad range of land protection and outdoor recreation. Relevant funding categories are Riparian Protection, Critical Habitat, Natural Areas, and Urban Wildlife Habitat.
- [Salmon Recovery Grants](#)¹³ to protect and restore salmon habitat.
- [Estuary and Salmon Restoration Program](#)¹⁴ to protect and restore of the Puget Sound near-shore. WDFW created the program to support the emerging priority of the Puget Sound Nearshore Ecosystem Restoration Program.

⁵ For more information, see https://dor.wa.gov/sites/default/files/legacy/Docs/Pubs/Prop_Tax/OpenSpace.pdf.

⁶ RCW 84.34.230

⁷ http://scc.wa.gov/about_conservationdistricts/

⁸ <http://scc.wa.gov/conservation-district-map/>

⁹ <http://www.commerce.wa.gov/serving-communities/growth-management/growth-management-topics/development-rights/>

¹⁰ <https://www.rco.wa.gov/grants/index.shtml>

¹¹ <https://www.rco.wa.gov/grants/alea.shtml>

¹² <https://www.rco.wa.gov/grants/wwrp.shtml>

¹³ <https://www.rco.wa.gov/grants/salmon.shtml>

¹⁴ <https://www.rco.wa.gov/grants/esrp.shtml>

- [Land and Water Conservation Fund](#)¹⁵ to preserve and develop outdoor recreation resources, including parks, trails, and wildlife lands.
- [Puget Sound Acquisition and Restoration Fund](#)¹⁶ to support projects that recover salmon and protect and recover salmon habitat in Puget Sound.
- [Floodplains by Design](#)¹⁷ grants for projects in the floodplain that combine flood risk reduction, ecosystem restoration, agricultural viability, and other benefits.

State Technical Assistance Programs

Washington State Conservation Commission

- [Voluntary Stewardship Program for Counties](#)¹⁸ uses a watershed-based, incentive-based process to protect critical areas, promote viable agriculture, and encourage cooperation among diverse stakeholders.
- Technical assistance through other [programs and services](#)¹⁹.

State and Federal Landowner Programs

Agricultural Property Owner Programs

Agricultural property owners can take advantage of a host of financial incentives to expand and maintain critical areas. Property owners can contact their [local conservation district](#), the [Washington State Conservation Commission](#)²⁰ (SCC), or the [Recreation and Conservation Office](#)²¹. Programs include:

- [Conservation Reserve Enhancement Program](#)²², SCC and U.S. Department of Agriculture (USDA)
- [Natural Resource Investments](#)²³, SCC
- [Environmental Quality Incentives Program](#)²⁴, USDA
- [Conservation Stewardship Program](#)²⁵, USDA
- [Conservation Reserve Program](#) (CRP)²⁶, USDA

¹⁵ <https://www.rco.wa.gov/grants/lwcf.shtml>

¹⁶ <http://psp.wa.gov/PSAR.php>

¹⁷ <https://ecology.wa.gov/About-us/How-we-operate/Grants-loans/Find-a-grant-or-loan/Floodplains-by-design>

¹⁸ <http://scc.wa.gov/vsp/>

¹⁹ <http://scc.wa.gov/>

²⁰ <http://scc.wa.gov/>

²¹ <https://rco.wa.gov/>

²² <http://scc.wa.gov/crep/>

²³ <http://scc.wa.gov/nri/>

²⁴ <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/>

²⁵ <https://Conse/www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/csp/>

²⁶ <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/index>

- [CRP State Acres for Wildlife Enhancement](#)²⁷
- [Regional Conservation Partnership Program](#)²⁸, SCC and USDA
- [Agricultural Conservation Easement Program](#)²⁹, USDA
- [Washington Wildlife and Recreation Program, Farmland Preservation Grants](#)³⁰, RCO

Forest Landowner Programs

Forest landowners have four state programs available from the Washington Department of Natural Resources (DNR) and RCO, and two federal programs, for conserving forest land and health:

- [Forestry Riparian Easement Program](#)³¹, Washington Department of Natural Resources (DNR)
- [Rivers and Habitat Open Space Program](#)³², DNR
- [Family Forest Fish Passage Program](#)³³, DNR
- [Washington Wildlife and Recreation Program, Forestland Preservation Grant Program](#)³⁴, RCO
- [Forest Legacy](#)³⁵, U.S. Forest Service
- [Healthy Forests Reserve Program](#), USDA

Department of Defense Conservation Programs for Landowners

The Department of Defense provides two incentive programs to landowners to conserve open space, wilderness, and working lands (including agricultural and forest lands):

- The [Readiness and Environmental Protection Integration](#) (REPI)³⁶ Program works through partnerships with willing property owners to establish conservation easements to reduce the likelihood of ESA species retreating to military lands as a last refuge. Properties need not be near a base or active training area.
- The [Army Compatible Use Buffer](#) (ACUB) Program provides incentives for some areas near active bases or ranges, such as Joint Base Lewis-McChord and the Yakima Training Center.

²⁷ https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/FactSheets/archived-fact-sheets/safe2015_jul2015.pdf

²⁸ <http://scc.wa.gov/rcpp-in-wa/>

²⁹ <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/>

³⁰ <https://rco.wa.gov/grants/farmland.shtml>

³¹ <https://www.dnr.wa.gov/programs-and-services/forest-practices/small-forest-landowners/forestry-riparian-easement-program>

³² <https://www.dnr.wa.gov/programs-and-services/forest-practices/small-forest-landowners/rivers-and-habitat-open-space>

³³ <https://www.dnr.wa.gov/fffpp>

³⁴ <https://www.rco.wa.gov/grants/ForestlandPreservation.shtml>

³⁵ <https://www.fs.fed.us/managing-land/private-land/forest-legacy>

³⁶ [Readiness and Environmental Protection Integration \(REPI\) Program](#)

Non-governmental Programs

[Local land trusts](#)³⁷ can also help landowners conserve their property, often leveraging funds from foundations and other non-government sources.

³⁷ <https://walandtrusts.org/>



Department of Commerce

Critical Areas Handbook

Chapter 7

Monitoring and Adaptive Management of Critical Areas Regulations

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Brian Bonlender, Director

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Introduction: Why Monitoring and Adaptive Management?

All counties and cities in the state have adopted critical areas regulations and permitting procedures under the Growth Management Act and the Shoreline Management Act, respectively. They have adopted these regulations to facilitate protection of critical areas. But, a local government has no way of knowing if they are achieving that goal without looking at the permit process and the on-the-ground results of critical areas regulation. They need a feedback loop to help determine whether goals are being met, and if the goals are not being met, how to improve the process.

This chapter provides a suggested process for starting a permit monitoring program that can help local governments begin to address that gap in knowledge, and to improve permit implementation to protect critical areas. The chapter also provides a number of case studies of counties and cities (and state and federal agencies) that have adopted and are implementing monitoring programs – why they set up a program, what they are monitoring, and what changes they are making in response to the information they have gathered.

Increasing Fairness, Transparency, Accountability and Ecological Outcomes

Adaptive Management, for purposes of this handbook, is a systematic process for continually improving management policies and practices by learning from the outcomes of implementation.

All interest groups have a common interest in a critical areas regulatory process that is fair, effective and efficient. Residents want to know that regulations are achieving their goals for the community. Developers and consultants want to improve the quality and speed of the permit process. Advocacy groups, whether environmental or private property rights, want transparency in the process. Tribes seeking to assert their treaty rights want to reduce risk from land use impacts.

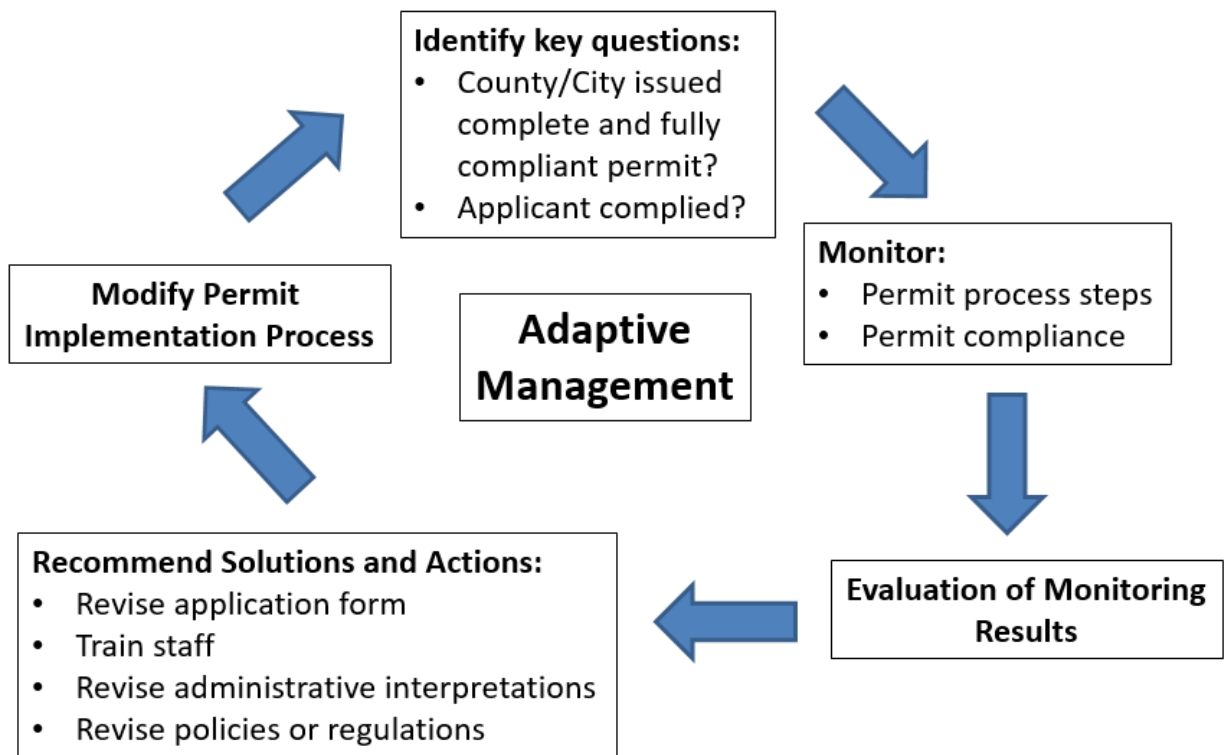
The goals of a monitoring and adaptive management program are increased fairness, transparency, accountability and improved ecological outcomes from regulations for critical areas protection. Monitoring tracks whether application requirements are being applied consistent with the regulations. This ensures applicants are being treated consistently and therefore fairly. Monitoring allows a local government to track the implementation of the permit system and to produce regular status reports for the public to review. It provides accountability to the public and applicants when they see that all applicants are being treated fairly and consistently in compliance with the regulations. Effectiveness monitoring determines if the intended outcomes or goals of fairness, transparency and accountability are being achieved over time.

Adaptive management is a commitment by a local government to respond to monitoring and effectiveness results by changing approaches for protecting and managing critical areas, and to redirect resources as warranted by new information. A willingness to make improvements to address issues identified through this process is important.

Monitoring and adaptive management are often low on the list of priorities for local jurisdictions. Lack of funding, staff capacity, and technical issues can make developing and implementing a program difficult. It can also expose perceived failures in the permit system, and may require changes that are difficult or unpopular. However, the benefits of a successful critical areas monitoring and adaptive management program can be substantial, and even a modest program can be worthwhile.

Assessing permit implementation and effectiveness of critical areas regulations under the Growth Management Act (GMA) and the Shoreline Management Act (SMA) can help counties and cities determine if their permit system is reaching desired outcomes for protecting critical areas and accommodating appropriate uses.

Monitoring and adaptive management can improve the delivery of government services around critical areas protection. The focus of a monitoring and adaptive management program is to evaluate the effectiveness of solutions identified to protect critical areas and actions taken, and to make changes as needed. The process is iterative as shown in the figure below. Such a program can result in recommended process improvements in implementing the critical areas regulations.



Conceptual representation of how implementation monitoring can be used to improve the permit process

This chapter describes different levels of monitoring, outlines the components of a monitoring program, and provides local and state examples of permit monitoring programs. Permit monitoring for purposes of this guidance means any version of review that includes application of regulations to development regardless of whether a separate permit for shoreline or critical areas is required under the development regulations.

Regulatory Context

For monitoring purposes, no distinction is made in this document between critical areas regulations adopted under the Growth Management Act versus the Shoreline Management Act. Critical areas protection is required by both acts, and many jurisdictions have adopted their critical areas ordinance by reference in their Shoreline Master Program (SMP).¹ The information gathered from monitoring should inform critical areas protection regardless of where critical areas are located. For example, the lessons learned from wetlands mitigation monitoring is beneficial, regardless of whether wetlands are in shoreline jurisdiction. The rules for both of these closely related statutes recognize the importance of monitoring as described below.

Counties and cities may choose to adaptively manage critical areas or shoreline programs under either the GMA or the SMA as part of their periodic reviews, though there is no requirement to follow that schedule, and no reason to wait for scheduled reviews to improve permit processes.

Growth Management Procedural Criteria

Critical areas protections adopted under the Growth Management Act have been in place in most jurisdictions for decades. Most jurisdictions have reviewed and updated, where needed, their regulations at least once. Monitoring and adaptive management can help to ensure these regulations achieve no net loss of critical areas functions and values. Commerce recognizes the importance of no net loss in the protection of functions and values in the Procedural Criteria:

Although counties and cities may protect critical areas in different ways or may allow some localized impacts to critical areas, or even the potential loss of some critical areas, development regulations must preserve the existing functions and values of critical areas. If development regulations allow harm to critical areas, they must require compensatory mitigation of the harm. Development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas.²

The Department of Commerce's Best Available Science rules help local governments determine which information is the "best available science." The rule encourages counties and cities to monitor and evaluate their efforts in critical areas protection and incorporate new scientific information, as it becomes available.³ Where there is an absence of valid scientific information, or incomplete scientific

¹ RCW 36.70A.480; RCW 90.58.610

² WAC 365-196-830(4)

³ WAC 365-195-905(6)

information, the rule recommends using a “precautionary approach,” or an effective adaptive management program as an interim approach.⁴

No court decisions have held that local governments are required to adopt a monitoring and adaptive management program. However, the Supreme Court found that if Skagit County were to rely on monitoring and adaptive management to protect critical areas in agricultural lands, it needed to establish benchmarks for monitoring.⁵ The Growth Management Hearings Boards have addressed the value of a monitoring and adaptive management program, and required it in certain circumstances as follows:

- Jefferson County was required to adopt a monitoring strategy that includes stricter development regulations that will be implemented at once if less stringent protection standards prove to be inadequate to protect against seawater intrusion. The County adopted less stringent protection standards that balance the need for protection of potable water supplies against the chilling effect of regulation against development after considering the best available science.⁶
- When Skagit County chose a less-than-precautionary approach for protection, the Board found that approach requires an effective monitoring and adaptive management program that relies on scientific methods to evaluate how well regulatory and non-regulatory actions the County adopted to achieve their objectives.⁷
- San Juan County was required to adopt an adaptive management program recommended by an advisory group because limitations in its ground water model and the data assembled to date did not conclusively show that increased densities in the urban growth area would not result in saltwater intrusion into the water supply.⁸

Voluntary Stewardship Program

Many counties have opted in to the Voluntary Stewardship Program (VSP) to protect critical areas from existing and ongoing agricultural activities. The VSP requires local watershed groups to develop a work plan to protect critical areas while maintaining the viability of agriculture in designated priority watersheds.⁹ The work plan must include a monitoring and adaptive management program with goals and benchmarks for the protection and enhancement of critical areas. The Voluntary Stewardship Program is a non-regulatory alternative that does not rely on permits, but the principles of monitoring are the same and could be modified for VSP. Also, VSP monitoring is not the level of monitoring that is most of the focus of this chapter. This chapter encourages permit implementation monitoring, and VSP requires a form of validation monitoring. See Levels of Monitoring below for a description of each type of monitoring. For more information about the Voluntary Stewardship Program see Chapter 5.

⁴ WAC 365-195-920.

⁵ *Swinomish Indian Tribal Community. v. W. Washington Growth Management Hearings Board*, 161 Wn.2d 415 (2007)

⁶ *Olympic Environmental Council, et al. v. Jefferson County*, 01-2-0015 (Compliance Order, 12-4-02).

⁷ *Swinomish Indian Tribal Community et al. v. Skagit County*; 2-2-0012c (Compliance Order, 12-8-03).

⁸ *Stephen F. Ludwig v. San Juan County*, Case No. 05-2-0019c (FDO, Compliance Order, April 19, 2006).

⁹ RCW 36.70A.720

Shoreline Management Rules

In approving a comprehensive SMP update, Ecology formally concludes that the SMP will result in “no net loss of ecological functions necessary to sustain shoreline natural resources.”¹⁰ Monitoring can help a local government determine whether implementation of their Shoreline Master Program is achieving no net loss requirements, as well as the policy goal to plan for and foster reasonable and appropriate uses. Monitoring can do this by demonstrating that permits are being issued consistent with the approved SMP requirements.

Ecology shoreline rules call on local governments to “monitor actions taken to implement the master program and shoreline conditions to facilitate appropriate updates of master program provisions to improve shoreline management over time.” The key “actions and conditions” are those associated with authorized developments. The shoreline rule also directs local governments to identify a process for periodically evaluating the cumulative effects of authorized development on shoreline conditions, which could involve a joint effort by local governments, state resource agencies, affected Indian tribes, and other parties.¹¹ An example of a joint effort would be a local government working with Ecology and WDFW to employ High Resolution Change Detection data to track cumulative land use changes over time. The rules pledge that Ecology will “compile information concerning the effectiveness and efficiency of the guidelines and SMPs” and this may inform future updates to state rules.¹²

Levels of Monitoring

Monitoring does not have to be complicated. Simply choosing to monitor permit implementation can provide key information for permit process improvement. Generally speaking, there are three levels of monitoring discussed in this chapter:

Permit implementation monitoring asks: (1) whether the local government issued a permit consistent with the regulations; and (2) whether the projects as built comply with all of the conditions noted in the permit. Data is about individual permits.

Effectiveness monitoring continues to ask the two permit implementation monitoring questions noted above over a longer period of time – are permits being issued that are consistent with all regulatory requirements and are projects continuing to meet permit requirements. Effectiveness monitoring can also address procedural improvements to improve efficiency of the permit system. The data is not about the individual permit, but whether and how to adaptively manage the system.

Validation monitoring asks general ecosystem questions about whether critical areas functions and values are being protected, and whether we are achieving no net loss of the ecosystem. Another term

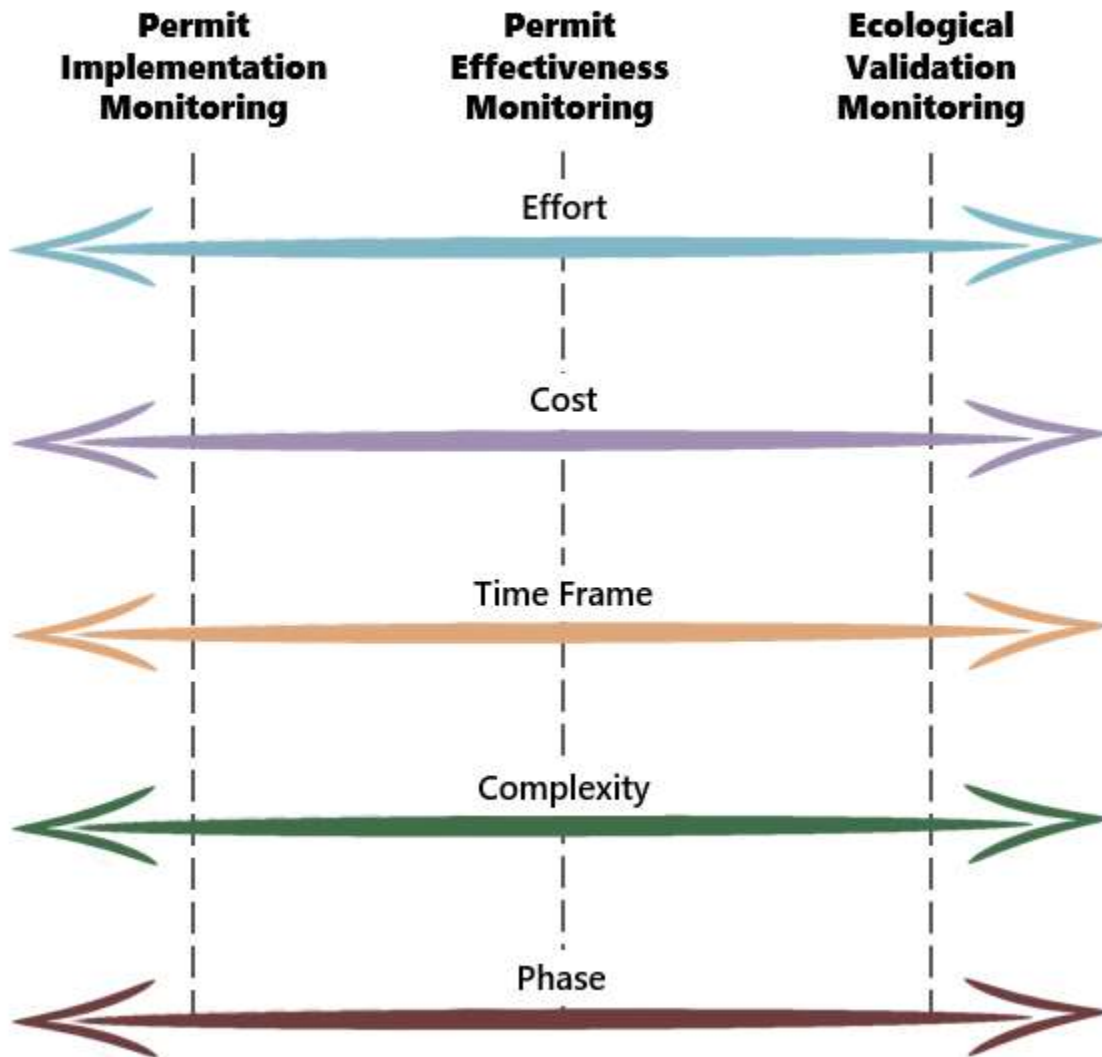
Monitoring does not have to be complicated. Simply choosing to monitor permit implementation can provide key information for permit process improvement.

¹⁰ WAC 173-26-18 6(8)

¹¹WAC 173-26-201(2)(b); WAC 173-26-191(2)(a)(iii)(D)

¹² WAC 173-26-171(3)(d) and WAC 173-26-201(2)(b)

for this type of monitoring is status and trends monitoring. Validation monitoring requires extensive scientific research that is probably beyond the resources of most local governments.¹³



Levels of Monitoring

It is easiest to think of levels of monitoring as a continuum. Implementation monitoring is easier, can be done in a short time frame, and can eventually lead to effectiveness monitoring. This document focuses primarily on these first two levels, because there is not always a bright line between implementation and effectiveness monitoring. Many jurisdictions do them together.

This chapter does not focus on validation monitoring, which is typically conducted regionally or as part of a particular scientific study. One example is the Puget Sound Ecosystem Monitoring Program (PSEMP). PSEMP is a collaboration of state, federal, tribal, local government agencies, non-

¹³ As noted above, the Voluntary Stewardship Program relies on a form of validation monitoring. Participation in the program is dependent upon funding, which is currently being provided by the state.

governmental organizations, watershed groups, business, academic researchers, local integrating organizations, and other private and volunteer groups and organizations. PSEMP has a number of work groups that monitor various populations and environmental conditions in Puget Sound, such as birds, mammals, salmon, and freshwater and marine waters. Over time, monitoring results should eventually be able to link observed changes in natural resources more closely with regulatory systems.

Steps in Developing a Monitoring and Adaptive Management Program

Step 1. Determine the Reasons for Monitoring

Clarify the reasons for monitoring and how monitoring results will provide feedback for adaptively managing permit implementation. A decision to develop a monitoring program should start with a review of core plans or policy documents. Has the local government adopted specific direction to conduct certain kinds of monitoring? If not, determine the area of focus by addressing community concerns. Reasons for monitoring could include:

- Are there specific critical areas that the jurisdiction is concerned are not adequately protected or that appear to have a high level of unpermitted activity?
- Are there complaints from the community that compliance or enforcement is not adequate or is perceived as unfair?
- Is there a desire to improve permit transparency, accountability and speed of permit processing?

Step 2. Establish Key Objectives and Study Questions

To be effective, a local government needs to establish clear objectives for the monitoring and adaptive management program, and develop questions that address those objectives. Is the objective to determine whether permits are being correctly issued in compliance with the regulations, and to refine the process if that objective is not being met? If so, an example of a clear objective might look like “permit provisions will be applied consistently and in compliance with the shoreline regulations;” or “applicants are complying with permit requirements.” The objectives will help determine which level of monitoring is required.

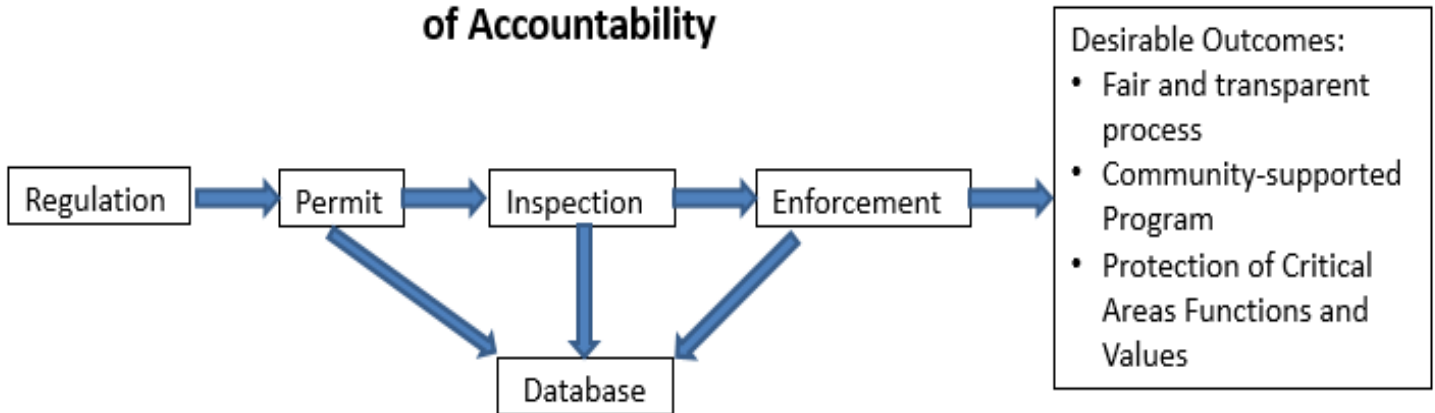
A local government should choose to monitor permit implementation if process improvement is the objective. Two entities are involved in implementation of a development permit, the local government and the applicant. The success or failure of permit implementation depends on the performance of both entities. Permit implementation monitoring collects information that improve the performance of the local government and the actions of the applicant.

The success or failure of permit implementation depends on the performance of both the local government and the applicant.

Effectiveness monitoring looks at permit implementation over time. Monitoring the outcome of permitting and enforcement of critical areas regulations over time begins to answer the question of whether regulations are applied accurately and consistently, and whether permit conditions are maintained.

Monitoring of any of the stages of the permit process - permit, inspection, or enforcement of permit conditions and requirements - can help evaluate implementation and effectiveness of a critical areas regulatory program, depending on identified goals and resources. A database for gathering information on each stage is a critical tool for creating a complete system of accountability. Each stage is worth evaluating.

A Complete System of Accountability



For each stage of the permit process, some basic questions are recommended. The questions would be the same for all critical areas that require protection (versus critical areas that require risk management, e.g., landslide hazard areas).

Stage in Critical Areas Permit/Review Process	Key study questions to evaluate permit implementation
Permit	Did the local government issue a complete and fully compliant permit: <ol style="list-style-type: none"> 1. Does the permit identify the critical area and what needs to be protected? 2. Does the permit follow the code? 3. If a variance has been granted, is the reason for the variance clearly stated? 4. Does the permit provide all the specific information necessary for the applicant to be in compliance? 5. Does the permit clearly state and quantify the work being authorized? Does the permit clearly state and quantify any critical areas impacts authorized by the permit decision?
Inspection	<ol style="list-style-type: none"> 1. Pre Visit: Were all of the required technical reports, documentation, and information submitted? 2. Post-Visit: Did the applicant comply with the permit? This may require field measurements of permit provisions or requirements. If the permit requires quantifiable measures and the permit provisions are not measurable (quantitative), then the local government issued an incomplete permit.
Enforcement	<ol style="list-style-type: none"> 1. Are enforcement actions resulting in compliance with the permit and/or the regulations?

An example of the types of questions that might be asked for monitoring of frequently flooded areas based on this framework might include the following.

Permit: Are permits being properly documented per the building code?

- Were buildings required to be elevated properly?
- Has development been required to be properly flood vented?
- Were the utilities required to be properly elevated or flood proofed?
- For development in the Puget Sound Region, was compliance with the Puget Sound Biological Opinion for the NFIP documented in the permit via a Habitat Assessment or other means?

Inspection: Did the applicant comply with the permit?

- Have buildings been elevated properly?
- Has development been properly flood vented?
- Were the utilities properly elevated or flood proofed?
- For development in the Puget Sound Region, were Habitat Assessment requirements in permits followed?

Snohomish County permit tracking database

Sample size: Is the sample size large enough to be of value to monitor? Some jurisdictions issue a very limited number of permits for some activities. Knowing that you improperly issued 50 percent of a given type of permit doesn't help much if only two were issued during the monitoring period.

Random sample selection: If a jurisdiction issues a large number of permits each year, the monitoring question can be answered by reviewing some subset of the total number of permits for consistency in application of and compliance with the regulations. Implementation and effectiveness monitoring programs generally do not sample all permits, and in fact sampling all units may be inefficient unless only a small number of permits are issued each year.¹⁴ Most permit monitoring programs focus on sampling a limited number of permits in order to make inference to all permits. To say something about all permits (those that you can sample and those you cannot), you need to employ some type of random selection process of all permits. A random selection of permits avoids bias. Randomization can be achieved by adding a random element to the selection process. The cardinal rule is to make inference to all permits - each individual permit must have an equal chance of being chosen to review.

An approach to choosing the sample permits you want to monitor could involve the following:

- What is the specific question you want answered?
- How are you defining your study population - i.e., how are you defining all permits? For example, all permits issued in 2014? Or, all building permits between 2010 and 2015?
- If you have large numbers of different development permit types, you may want to consider sampling by permit type – e.g., agriculture, forest practices, or single-family residence versus commercial or subdivision. (See the Snohomish County case study for an example of this.)
- How will you add a randomization element to the sample of permits that you choose from all permits? For example, will you choose the first permit issued each month over the last 5 years?
- Which permit stages are to be monitored – permit, inspection or enforcement?
- What types and sources of data are to be collected? Of all the things that could be measured, what exactly will be measured? For example, permit conditions for land cover, water quality, shoreline conditions, etc.
- What sampling methodology will be used? What defined criteria will be used to review each permit type?
- Determine if there is baseline monitoring that can be used to measure results against. What will the jurisdiction compare ongoing results against? This is not always applicable to all monitoring types - it may not be applicable to permit implementation. But to understand progress, establishing a baseline and monitoring over time will be helpful.

Selection bias/access to information: Are there provisions in the program to allow equal access to sampling results? For example, if the program relies on landowners willing to grant access to their property to perform follow up inspections it may not produce reliable results. Unless post-permit monitoring inspections are required by binding permit conditions or code requirements to compel access, the results will be biased toward access by willing landowners.

¹⁴ This is in the context of monitoring for permit implementation or effectiveness. If a jurisdiction is monitoring for mitigation compliance, prioritization of permits and/or monitoring of all permits will be more effective. See the Wetlands Compliance Mitigation and USACE Compliance Mitigation examples on pages 47 and 48.

Step 4. Determine the Monitoring Time Frame

In some cases, a monitoring and evaluation program is an ongoing effort, though there should be specific periods for reporting. If a monitoring effort has a defined period, the number of years before a report is generated should be informed by the scope of the monitoring questions. To have sample sizes big enough to summarize, several years at a minimum should be monitored prior to reporting. A county or city may want to prepare a report on a priority area every eight years to inform their periodic reviews under the Growth Management or Shoreline Management Acts.

Step 5. Evaluate Results and Make Recommendations

Local governments using a monitoring program should produce periodic reports that clearly answer the questions and objectives identified at the start of the program. The report should also identify any weaknesses in the program that could affect the quality of the results.

Examples of the kinds of results a monitoring effort can identify:

- i) Are accurate, complete and clear permits being issued?
- ii) Are critical area requirements being applied consistently in permits?
- iii) How are data summarized to provide useful feedback to interested stakeholders?

Results from a monitoring study should include recommendations for revising or adaptively managing the permit process to increase critical areas protection effectiveness or compliance with the regulatory requirements.

Local and State Case Studies of Implementation and Effectiveness Monitoring

A number of counties and state agencies have conducted monitoring of their critical areas programs. For many of them, the focus of monitoring was on both implementation and effectiveness. Implementation and effectiveness monitoring are very closely related, and often overlap. The case studies presented here provide some ideas for what a local government might choose to monitor, and the types of process improvement recommendations that could result from monitoring.

Snohomish County Monitoring and Adaptive Management Program

1. Determine the Reasons for Monitoring

The County adopted a critical area protection program in 2007 consisting of three principal tools: regulations, non-regulatory environmental programs, and a monitoring and adaptive management

program. The monitoring plan outlined an approach for measuring indicators of critical area functions and values (for wetlands and fish and wildlife habitat conservation areas), evaluating changes, and informing adaptive management decision-making regarding what adjustments may be needed to regulations or other County programs to protect critical area functions and values.

Snohomish County chose to include a monitoring element as a precautionary approach, taking into consideration growth management hearing board rulings regarding critical area protection and monitoring in other counties. The County developed an adaptive management approach for sections of their critical areas regulations. This effort began in 2008 in accordance with the requirements contained in the Monitoring and Adaptive Management provisions of Part 700 of Snohomish County Code,¹⁵ the “no net loss” policies contained in the County’s comprehensive plan,¹⁶ and the Growth Management Act. The monitoring program was primarily intended to monitor wetlands and fish and wildlife habitat conservation areas.

The second phase¹⁷ of the Monitoring and Adaptive Management Plan analyzed the effectiveness and implementation of permits and enforcement in protecting certain critical areas and their buffers ([Critical Areas Monitoring Report: Analysis of the Effectiveness and Implementation of Permitting and Enforcement to Protect Critical Areas in Snohomish County](#), December 2014¹⁸). The study was to provide data on whether the County was meeting its no net loss goals, and to provide recommendations for improving the permit process to meet those goals. This case study focuses on this second phase of the program.

2. Establish Key Objectives and Study Questions

Snohomish County was interested in understanding how well its critical areas regulations were being implemented. The County uses a Critical Areas Site Plan (CASP) to identify all critical areas, buffers and restricted areas occurring in close proximity to the development area. The County’s study looked at properties with a number of permit types subject to the critical areas regulations and clearing, grading and building enforcement cases.

Two of the key questions that the County asked were:

- What were the land cover change gains or losses in wetlands, fish and wildlife habitat conservation areas and their buffers?
- If loss is occurring, what adaptive management adjustment are needed to protect functions and values in fish and wildlife habitat conservation areas, wetlands, and their buffers?

The guiding principles for the monitoring and adaptive management plan are:

- Develop and implement the monitoring program using peer-reviewed best available science.

¹⁵ Part 700 of Chapter 30.62A of Snohomish County Code.

¹⁶ Natural Environment Policies: NE 3.B.10, NE 5.A.7© and NE 7.B.1.

¹⁷ The first phase investigated changes in land cover, shoreline conditions along major rivers and lakes at a countywide scale that occurred between 2007 and 2009; and an assessment of select ecological indicators to evaluate the effectiveness of code provisions in protecting aquatic environments. The results were published in the [“Critical Areas and Shorelines Monitoring Status Report”](#) (SWM, March 2012). That report did not analyze the effectiveness or implementation of permitting or enforcement in any depth.

¹⁸ <https://snohomishcountywa.gov/DocumentCenter/View/22692/2014-CAR-Monitoring-Report>

- Focus the program on the functions of fish and wildlife habitat conservations areas, wetlands, and their buffers.
- Test hypotheses with indicators.
- Use random sampling.
- Adaptively manage the monitoring program.

3. Design the Monitoring Program

For this phase of Snohomish County’s program, the emphasis was on analyzing the effectiveness and implementation of permitting and enforcement using high-resolution aerial photography at a parcel scale. Specific tasks were developed and investigated pertaining to the study questions:

- Evaluate land cover changes in critical areas and buffers on a random sample of 335 of the 839 properties with permits subject to the County’s critical area regulations that have critical areas site plans (CASPs).
- Evaluate land cover changes in critical areas and buffers on all 900 of the clearing, grading and building code enforcement properties subject to the County’s critical area regulations.
- Evaluate land cover changes in critical areas and buffers on all 49 of the properties with Class IV forest practices permits subject to the County’s critical area regulations.
- Evaluate land cover changes in critical areas and buffers on a random sample of 300 of the 797 properties with permits subject to the County’s critical area regulations that did not have critical areas that were documented.
- Evaluate the implementation and effectiveness of the monitoring procedures in the County’s permit tracking system (AMANDA) used to track the presence and impacts of critical areas. Buffer and wetland area alteration options were used 485 times on 642 permit properties that had critical areas or buffers documented.

Adaptive Management Triggers

Indicator	Threshold 1 (increase outreach, enforcement, mitigation)	Threshold 2 (Add programmatic adjustments)	Threshold 3 (Add code revisions)	Change detection and adjustment of time frame
Wetland Area	<5% change* in one watershed	5-10% change* in 2+ watersheds	>10% change* countywide	4 years
Riparian forest quantity/quality index	<3% change* in one watershed	3-5% change* in 2+ watersheds	>5% change* countywide	2 years
*Change is measures relative to baseline				

The County established a series of adaptive management triggers for each indicator based on local values. Without science upon which to base them, they selected targets that seemed appropriate. These triggers may need to be adjusted.

The County used land cover data from aerial photography to map critical areas as part of the permit process. It then used subsequent land cover data to determine whether applicants met critical area site plan requirements with respect to the area of critical area and buffer requirements.

The County also evaluated its permit process through its permit tracking system (AMANDA). Most critical areas reviews are documented in one or more AMANDA process lines that must be filled out or deleted before a permit can be issued. The County used AMANDA process line information to determine whether or not a permit review occurred, and why. This information was also used to determine whether critical areas reviews were being done consistently.

4. Determine the Monitoring Time Frame

The time frame for the study was November 2007 through April 2013. The County has adopted an eight-year ongoing monitoring cycle consistent with the statutory review schedule under GMA. The next report will be completed one year prior to the next review deadline in 2023.

5. Evaluate Results and Make Recommendations

Some specific conclusions and recommendations related to the permit process for this report were:

- Critical area site plan (CASP) documentation was generally poor. There were problems with the accuracy of the scale, dimensions, structure locations, and locations of critical areas that create difficulties with the interpretation and application of CASP requirements by permittees.

Recommendations

- Provide clear written CASP document instructions for staff and applicants.
 - Develop aerial photo template with parcel boundaries to help staff and applicants.
 - Develop consistent method of documenting recording CASPs in AMANDA.
- Apparent misunderstandings of the applicability and exemptions in the critical areas regulations and other development codes have led to inconsistencies – e.g., cases where critical areas and buffers were present that should have been identified and recorded on CASPs, and others where the critical areas or buffers have been impacted without any reviews by the Department of Planning and Development Services (PDS).

Recommendations

- Provide additional critical areas regulations training to staff on development permit thresholds, exemptions and applicability.
- Inconsistent and poor documentation in AMANDA made it difficult to draw conclusions why many of the permits were not reviewed for critical areas, or what transpired in the reviews that did occur.

Recommendations

- Improve documentation in AMANDA of critical areas regulation review; e.g., consistent use of process lines, vesting dates.

- Critical areas regulation monitoring data collected in AMANDA documenting impacts and mitigation was inconsistently provided. Missing data and misunderstandings of how to input the data created unreliable information on critical area and buffer impacts that could not be used to summarize impact trends over time.

Recommendations

- Provide additional staff training to assure permit technicians, planners, engineers and environmental reviewers understand the data needs for critical areas regulation monitoring.
- Review and refine data monitoring fields in AMANDA.

Douglas County Shoreline Critical Areas Monitoring and Adaptive Management

1. Determine the Reasons for Monitoring

Douglas County does not have a lot of upland critical areas, but it does have a lot of shoreline along the Columbia River. While monitoring is not required under GMA or SMA, enforcement is required under the SMA¹⁹. Douglas County adopted a monitoring and adaptive management program in its SMP in 2009. The 2009 SMP²⁰ defines “monitoring” as:

[E]valuating the impacts of development proposals over time on the biological, hydrological, pedological, and geological elements of such systems and/or assessing the performance of required mitigation measures throughout the collection and analysis of data by various methods for the purpose of understanding and documenting changes in natural ecosystems and features, and includes gathering baseline data

[Appendix H](#)²¹ to the County SMP contains the County Shoreline Critical Areas Regulations. Section 4, Chapter 1, 1.060 and 070 require monitoring and adaptive management. Performance standards and specifics for monitoring wetlands are in Chapter 3, Section 2.035, and fish and wildlife habitat conservation areas are in Chapter 4, Section 3.037.

2. Establish Key Objectives and Study Questions

The key objective of the program is no net loss of ecological functions and values under the SMP.

3. Design the Monitoring Program

Douglas County has set up a problem solving process designed to achieve no net loss. County staff created a “child” permit in their permitting software that they call a “performance assurance permit” to ensure compliance. The performance assurance permit is the same as a performance bond used by public works. The financial “set-aside” is 125 percent of the project mitigation cost. It is a very specific document that is financially vested. It provides an incentive for compliance. The County prefers that people post a bond to assure no net loss, rather than requiring them to pay a fine for violations.

¹⁹ RCW 90.58.210

²⁰ [Douglas County Shoreline Master Program](http://www.douglascountywa.net/docs/default-source/tls/planning/growth-management/smp/chapter_1-9_final_8-27-09.pdf?sfvrsn=6), page 133. http://www.douglascountywa.net/docs/default-source/tls/planning/growth-management/smp/chapter_1-9_final_8-27-09.pdf?sfvrsn=6

²¹ http://www.douglascountywa.net/docs/default-source/tls/planning/growth-management/smp/appendix_a-h_final_8-27-09.pdf?sfvrsn=6, start on page 161 of the PDF.

All shoreline development permits require a performance assurance and a monitoring process (see citation in paragraph 1 above). Staff track shoreline development permits through a software system. Staff tracks Performance Assurances (PERFs) through the same software system using “child” permits.

Mitigation site monitoring reports must be created and submitted by a qualified biologist of record. As stages of compliance are achieved, funds are release sequentially from the financial set-aside. Shoreline development permits may be revoked if improvements are not executed. If monitoring reveals that installation and monitoring of mitigation improvements has been completed as required, remaining amounts of the financial surety are released.

A portion of permit fees fund the monitoring program. It is mostly an unfunded requirement code enforcement absorbed (partially funded by county solid waste fees).

The monitoring program also encompasses investigations of complaints, as well as joint river patrols with other state and local agencies. When the County identifies critical areas violations such as conducting work without the required permit and mitigation plan, it requires that the resolution be memorialized through the Shoreline Development Permit and PERF permit process, rounding out the process of ensuring no net loss.

4. Determine the Monitoring Time Frame

The 2009 SMP requires a five-year monitoring period for permits, with biologist monitoring reports submitted in years one, three and five.. The monitoring reports must be prepared and submitted by a qualified professional biologist. This ensures that a professional who is trained in the local area Best Available Science is certifying there is no net loss of ecological functions and values. (SMP [Appendix H](#)²², Section 2.035.J and Section 3.037.I)

5. Evaluate Results and Make Recommendations

The County generates a report to track the submittal and verification of the biologist’s monitoring reports. Staff looks at the biologist’s assurance of no net loss versus the potential net loss under the Shoreline Development Permit.

If the biologist’s report reflects a failure of the mitigation plantings to meet the conditions required by the SMP or the specific permit, the monitoring period is extended. Once all of the reports reflect the site meets the mitigation requirements, the PERF is closed and the monies are released. A closed PERF corresponding to a completed Shoreline Development Permit means “no net loss” is validated.

The County is evaluating when to execute the PERF during the permit process. Staff are evaluating whether five years is long enough to monitor, or too long. Staff are also looking at how to enforce non-compliant PERFs – whether they should revoke the permit or enter the property and complete the improvements.

²² http://www.douglascountywa.net/docs/default-source/tls/planning/growth-management/smp/appendix_a-h_final_8-27-09.pdf?sfvrsn=6

The County is continuing routine monitoring and identifying difficulties. For example, staff are looking at how to maintain a fire-adapted community and protect critical areas. They are also looking at the issue of how to provide code-compliant accessibility in shorelines of significance.

San Juan County Initiative

San Juan County looked at the effectiveness of its shoreline permit process. The San Juan Initiative, a partnership of the Puget Sound Partnership, Surfrider Foundation, and San Juan County formed in 2006 to determine what was working and what was not in protecting sensitive shoreline resources (See Amy H. Windrope, Timothy Quinn, Kurt L. Fresh, Andrea J. MacLennan & Joseph K. Gaydos (2016): [Marine Shoreline Management – A 35-Year Evaluation of Outcomes in San Juan County, Washington](#), US, Coastal Management²³). The goal of the Initiative was to provide a scientifically defensible, community-based process to evaluate and improve shoreline protection through citizen-supported changes to local and state policy.

1. Determine the Reasons for Monitoring

The Initiative conducted this study to determine whether shoreline management requirements were adequately protecting feeder bluffs, shoreline vegetation and forage fish beaches.

2. Establish Key Objectives and Study Questions

The study had two components: shoreline characterization and policy/permit review. The shoreline characterization asked the following questions:

- What construction had occurred along the shoreline that would likely have impacted shoreline vegetation, feeder bluffs or forage fish beaches?
- Was there a difference in on-the-ground outcomes from permitted or non-permitted structures and was there a difference in the impact of structures over time as shoreline regulations became more protective?

The evaluators also reviewed County permit databases for all records of overwater and shore armor permits after 1977. County permit review asked four questions:

- Was there a permit for the activity?
- Were sensitive resources identified (i.e., eelgrass beds, feeder bluffs, or forage fish beach spawning habitat) that could be negatively impacted by the activities?
- Did permits contain provisions to protect those sensitive resources?
- Did dimensions of field-measured armor and overwater structures comply with permit conditions?

3. Design the Monitoring Program

The study describes how state and local policies were implemented in San Juan County, particularly how ecological outcomes relate to implementation challenges. Because counties must comply with the

²³ <https://www.tandfonline.com/doi/full/10.1080/08920753.2017.1237242>

Growth Management Act and the Shoreline Management Act, the Initiative did not differentiate between the requirements of the two acts. Five elements of the initiative were reported on:

- Characterization of shoreline construction during three time periods reflecting three different regulatory regimes;
- Review of policy, regulations, and permitting processes;
- Evaluation of the affected publics' perceptions on shoreline protection;
- Documentation of actions taken by the San Juan County Council in 2008 in response to Initiative findings; and
- Measuring of changes in shoreline management in 2012 after implementation of Initiative recommendations in 2008.

4. Determine the Monitoring Time Frame

The evaluators reviewed the County permit databases for all records of overwater and shore armor permits in three time periods: pre-SMA, post-SMA and post- 1993 which reflected post –GMA changes. These time periods were chosen because they reflected significant changes in shoreline regulations.

5. Evaluate Results and Make Recommendations

Among other findings, the study found issues with county implementation under the Shoreline Management Act (SMA), and with permit tracking. Permit process findings included:

- The county lacked basic maps showing the location of sensitive resources;
- Permit information was stored in three separate databases and was not easily searchable, and more recent permits were recorded on note cards; and
- Permits lacked essential information necessary to determine compliance.
- There was no significant difference between permitted and non-permitted shoreline structures impact (size, location)
- The permitting rate for shoreline armor, after 1977, was less than 10 percent (meaning that greater than 90 percent of the armor did not have a permit record) and for docks it was 78 percent.
- There was no enforcement mechanism nor inspections.
- Many community members believed the permitting and enforcement system to be arbitrary and unfair.

Recommendations at the local government and state levels:

- Establish clear and unambiguous decision criteria;
- Develop effective tracking databases and inspection programs; and
- Monitor for compliance and effectiveness.

Another critical component of adaptive management is adequate community engagement. The San Juan Initiative actively engaged shoreline property owners with neighborhood meetings. They also held lunches several times a year for builders, landscapers and contractors who work along the shoreline to understand their concerns and to develop solutions through collaboration.

Jefferson County Shoreline Permitting

1. Determine the Reasons for Monitoring

Jefferson County received an EPA grant through Clallam County. The purpose of the overall grant to Clallam and Jefferson Counties was to enhance shoreline protection through shoreline permitting. Under this grant, Clallam County developed policies and regulations pertaining to no net loss of shoreline functions during its Shoreline Master Program (SMP) update process, while Jefferson County assessed implementation of policies and regulations intended to achieve no net loss that had been incorporated into the updated SMP. And, Jefferson County wanted to develop indicators of shoreline function to determine whether it was achieving no net loss.

This case study is based on the Jefferson County work to develop tools for implementing and monitoring the County's SMP. The grant allowed the County Department of Community Development (DCD) to evaluate permit activity under the County's updated SMP for use in future decision-making, and provided an opportunity to determine whether the County's SMP implementation was achieving no net loss of shoreline functions. Work completed under this grant also allowed the County to identify ways to improve permitting outcomes through adaptive management.

2. Establish Key Objectives and Study Questions

The overall goal of the grant was to develop tools for implementing and monitoring adopted SMPs. The objectives were:

- Identify and monitor indicators of shoreline function;
- Develop tools to help planners review shoreline applications;
- Develop a database to track shoreline permitting applications, permitting decisions, and monitoring results;
- Prepare a standardized shoreline monitoring field form;
- Conduct monitoring site visits to verify compliance with shoreline permit conditions and the approved site plan, as well as post development conditions for no net loss indicators;
- Prepare written guidance and templates for applying no net loss indicators that could be used by other local jurisdictions; and
- Provide technical assistance to property owners and some local professionals, including realtors, contractors, and consultants.

The study asked two basic questions:

- Are shoreline application proposals complying with the SMP policies and regulations?
- Are shoreline permittees complying with the shoreline permit requirements?

The study was based on two assumptions:

- The monitoring program should be designed for use in showing compliance during periodic review and update of the SMP.
- Permits issued in compliance with the SMP should result in no net loss of natural shoreline functions and values.

3. Design the Monitoring Program

Technical Assistance: Jefferson County DCD used the grant to improve its technical assistance to shoreline property owners through guidance and outreach. To identify the most effective outreach strategy, DCD and the consulting team made 24 monitoring site visits during summer 2015. Monitoring site visits evaluated permit compliance with permit conditions and assessed no net loss indicators of shoreline function on a Shoreline Development Field Form. The 24 monitoring site visits represented approximately 50 percent of the shoreline applications that had been approved at that time, and the information collected from these site visits were then used to target outreach activities in the County.

Compliance Monitoring/Enforcement: To ensure that shoreline applications were consistent with all applicable shoreline regulations, DCD prepared a No Net Loss Checklist for use in planner review.²⁴ Checklists prepared for each application recorded the application number, application information, project information, and shoreline permitting information. The planner reviewing the shoreline application used the checklist to confirm that all supporting information was submitted and that the proposal complied with all applicable SMP regulations. Completed checklists were entered into a database that tracked all shoreline permits issued under the updated SMP.

Monitoring site visits were made to properties in which the permitted work had either started or had recently been completed. As noted above, monitoring information was recorded on a Shoreline Development Field Form. This form evaluated the pre-development conditions and the post-development conditions for each applicable indicator of shoreline function. The results of this assessment would indicate whether or not permitted projects were affecting shoreline functions. The form was also used to record whether or not the implemented project was consistent with approved plans. The data collected during monitoring site visits were also entered into a database that tracked the following for each shoreline permit:

- No Net Loss Checklist Information: application number, landowner name, project address, parcel number, type of land ownership, development type, development summary description, shore type, waterbody name, shoreline reach, and shoreline designation;
- No Net Loss Indicators: identified each indicator by shore type, pre-development conditions, and post-development conditions;
- Monitoring Site Visit Information: describe any variations from permit, describe mitigation (if required), identify whether or not application was for restoration, describe development implications for no net loss, and general comments.

Shoreline Permit Review: Shoreline applications received by DCD and compiled in the database were also used to track shoreline permitting and no net loss indicators, and to evaluate this activity relative to future shoreline permitting decisions in Jefferson County.

4. Determine the Monitoring Time Frame

The updated Jefferson County SMP went into effect in February 2014, and all shoreline permits issued between the SMP effective date and December 2016 (grant end date) were tracked in a database. During this timeframe, Jefferson County received 142 shoreline applications. County planners completed 118 No Net Loss Checklists, issued 105 shoreline permits, and monitored 64 projects for compliance with permit conditions and the approved site plan.

²⁴ See Appendix 7.A.

5. Evaluate Results and Make Recommendations

A compilation of the monitoring results of permitted shoreline projects showed that planners generally reviewed proposals consistent with the SMP, and that the majority of the applicants complied with permit conditions. The indicators of shoreline function used by the county suggest that permitted projects are not likely to negatively affect shoreline ecological processes. These results indicate that county permitting is generally effective at maintaining baseline shoreline conditions. There were a few cases where there was (1) insufficient or inadequate information submitted by the applicant, (2) insufficient or inadequate review of the application by the project planner, or (3) lack of compliance with permit condition by the applicant (or hired workers).

Monitoring showed that, for the most part, the no net loss provisions of the SMP are being met and that the indicators evaluated demonstrate that baseline shoreline ecological conditions are not being negatively affected by permitting activities. That said, monitoring did indicate that additional or better enforcement may be needed in some cases to achieve full compliance with SMP requirements. A list of key issues below identifies some actions that the county could take to improve the permit review process and achieve better permit compliance during project implementation.

- Issue: Shoreline approval for repair of existing modifications/uses where repair to original condition results in impacts to ecological functions.
Potential options:
 - Encourage planners to carefully review maintenance and repair exemptions relative to the exemption requirements.
 - Encourage planners to pull old files (when available) from archiving to better compare what was previously approved with the current proposal.
 - Encourage planners to make more site visits to review existing site conditions relative to the proposed work shown on submitted site plans.
- Issue: Unauthorized expansion of existing modifications/uses that commonly occur through maintenance/repair requires shoreline exemption approval.
Potential options:
 - Actions to address this key issue are similar to those listed above.
 - New mapper tool with better imagery may help planners review on-site conditions.
- Issue: Loss of canopy cover and vegetation beyond approved clearing limits.
Potential options:
 - Require all site plans to show limits of clearing.
 - Require all site plans to show trees to be removed during construction.
 - Require submittal of a stormwater worksheet that states how much clearing is proposed with each shoreline application. Require all applications to include photographs of project area.
 - Encourage better communication between DCD planner and Jefferson County Environmental Health sanitarian (who ultimately issues septic permits).
 - Add permit conditions requiring applicants to install orange construction barrier fencing at clearing limits and require a site visit to review the location of the fencing prior to beginning any earthwork.
 - Provide additional training to septic designers and septic installers (to increase consistency between county-approved plan sheets and site development activities).

- Consider using performance bonds for permitted projects to encourage greater compliance with permit conditions.
- Issue: Mitigation approved without maintenance/monitoring requirements.
Potential options:
 - Encourage planners and staff biologist to review mitigation plans more thoroughly.
 - During next SMP update, provide regulatory requirements for preparing “No Net Loss” reports; add specific reporting criteria that must be addressed to show that the proposal complies with all regulatory requirements and ensure that no net loss of shoreline ecological functions is met for all permitted projects.
- Issue: Permitted building setbacks and other allowed modifications adjacent to coastal geologically hazardous areas, with immediate or future risk to shoreline ecological functions. DCD does not have geologists on staff and the department currently relies on information in geotechnical reports prepared by geologists (or engineers) with a state stamp to make permitting decisions. Work completed during the course of this grant indicates that, in some cases, the reports may need further evaluation by an independent third-party expert prior to issuing a shoreline permit.
Potential options:
 - Send reports out for third-party review, as needed (mapper tool guidance provided by the consulting team will help DCD determine if third-party review may be appropriate).
 - Encourage DCD planners to provide handouts pertaining to slope stability and vegetation retention to property owners to increase understanding of potential hazards to human health and safety as well as the shoreline environment.

Thurston County/WDFW Shoreline Master Program

In 2015, Thurston County Long Range Planning and Washington Department of Fish and Wildlife (WDFW) used a National Estuary Program (NEP) grant to quantify shoreline vegetation and land cover change and evaluate land use permit compliance within Thurston County’s shoreline regulatory jurisdiction. Thurston County has over 400 miles of shoreline.

Thurston County measures and monitors no net loss based on existing conditions remaining the same as when the SMP was implemented. Protection and restoration are needed to offset new development. The County finds both function and acreage are important.

1. Determine the Reasons for Monitoring

Thurston County partnered with WDFW and Ecology to pilot use WDFW’s High Resolution Change Detection (HRCD) data²⁵ to monitor compliance and effectiveness within the County’s Shoreline Master Program (SMP) jurisdiction. This project developed a protocol manual for using HRCD that could be used by any jurisdiction within the Puget Sound region.²⁶

²⁵ See more about WDFW’s [High Resolution Change Detection](#) on page 51.

²⁶ See Appendix 7.B: Recommendations for Applying the HRCD Data Set to Track Land Cover Change.

2. Establish Key Objectives and Study Questions

The project was designed as a pilot to answer several related sets of questions for both Thurston County and WDFW.

For Thurston County, key questions were:

- What land cover change is happening within designated marine SMP areas? What change is happening throughout the Deschutes River watershed (WRIA 13)?
- How does the change known by Thurston County permit records compare with detected changes by the HRCD? I.e., is change that occurred permitted and appropriate?
- Can the County use HRCD to monitor no net loss?
- What changes, if any, can be made to the land use permits or process that could increase the relevancy or effectiveness in using the HRCD in compliance monitoring?

For WDFW, the questions were:

- How well can the HRCD detect changes relative to land use permit records?
- Using Thurston County's marine SMP area as an example test area, what land cover changes are happening not captured by the HRCD?
- With the development of a HRCD user manual, can other entities use the HRCD effectively in the absence of further assistance by WDFW?

3. Design the Monitoring Program

The exercise was designed to quantify the increase in impervious surfaces and decrease in canopy within Thurston County's marine SMP area. The project consisted of five phases:

Phase 1: Initial SMP Change Analysis: WDFW Habitat program staff and Thurston County's long-range planning staff intersected the HRCD dataset with Thurston County's marine SMP area and parcel data for the three time periods of HRCD available (2006 to 2009, 2009 to 2011, and 2011 to 2013) within ArcGIS. With known areas of change found, those locations were compared with land use permit records from Thurston County. The intent was to find locations of observed change via HRCD without any permit record. This wasn't meant to be a direct means of enforcement, but an initial analysis of undocumented change that could provide a pared-down set of locations for further investigation. This phase would also produce land cover change statistics, including area of change and counts of land cover change events, by SMP designation and parcel.

Phase 2: Learning What the HRCD Misses: Using the SMP marine area in Thurston County, WDFW staff manually looked for land cover changes not captured by the HRCD. This was intended to help WDFW understand rates of omission in the HRCD using an area under some developmental pressure with relatively small changes. This was done by manually finding and digitizing changes using the (National Agriculture Imagery Program) NAIP²⁷ imagery that were not captured by the HRCD dataset.

Phase 3: Developing a Standardized Method for Utilizing the HRCD: A major goal of this project was to develop support materials for others to utilize the HRCD to answer their land use management questions in the absence of in-person WDFW staff assistance. Using the lessons learned in Phases 1 and 2, WDFW and Thurston County cooperated on composing a manual for a recommended method to

²⁷ <https://www.fsa.usda.gov/programs-and-services/aerial-photography/imagery-programs/naip-imagery/>

apply the HRCD to a specific land use management question. This phase also included the development of a web-based service for users to download the HRCD dataset, detail the methodology of HRCD construction, find contact information, and more. This is located at www.pshrcd.com.

Phase 4: Testing the Manual through Remaining SMP Analysis in WRIA 13: Using only the HRCD dataset and the manual produced in Phase 3, Thurston County planning staff developed an application and utilized the HRCD successfully. For their application, they examined the land cover change within the remaining SMP areas within WRIA 13 for the three time periods of HRCD data available.

Phase 5: Training and Outreach: With the lessons learned and products derived from Phases 1 through 4 of the project, WDFW and Thurston County staff, working in conjunction with the Coastal Training Program, developed a workshop for planning staff with other state agencies, local governments, and some non-governmental organizations. WDFW also used this opportunity to train internal staff on the benefits, limitations, and uses of HRCD.

4. Determine the Monitoring Time Frame

The evaluators analyzed land cover change within Thurston County's SMP area between 2006 and 2013. At the time of the project (2015), three iterations of the HRCD dataset were available for analysis for the study area, 2006 to 2009, 2009 to 2011, and 2011 to 2013. Permit records that corresponded to these timeframes were pulled.

5. Evaluate Results and Make Recommendations

Currently, the only way the County has knowledge of unpermitted activity is through public complaints (i.e., neighbor complaining about the construction of something). This is an unreliable way to assess compliance. The county found that HRCD data, while not perfect, can be used to assess compliance and find above-ground unpermitted activity.

HRCD-identified change by environment designation

Environment Designation	Sum of Total Change*	Sum of Canopy Loss	Sum of Impervious Gain	Sum of Semi-Impervious Gain
Rural	7.2 acres	4.3 acres	2.7 acres	0.5 acres
Conservancy	4.3 acres	3.4 acres	0.8 acres	0.3 acres
Natural	0.02 acres	0.02 acres	0.02 acres	0 acres
Grand Total	11.5 acres	7.8 acres	3.5 acres	0.8 acres

Source: Thurston County, WDFW

- * With restoration acreage from the Nisqually Restoration Project removed, which includes:
- 22.85 acres from 2006-2009
 - 2.69 acres from 2009-2011

Overall, the data showed that less than half of one percent (0.39%) of the marine SMP area had change identified by HRCD from 2006 to 2013.²⁸ Approximately two-thirds of this was due to canopy loss, with one-third due to new impervious surfaces. The project did not find any developments that were out of compliance, though it did find unpermitted events in each of the time periods (e.g., tree removal).

The Thurston HRCD project demonstrated the utility of the HRCD in analyzing the patterns of land cover change in a specific geographic area of concern. However, Thurston County found that measuring compliance with HRCD data was “tedious and difficult” because of the capacity of the county’s current AMANDA database. In many cases land use permits did not include enough information to determine conclusively that a parcel with observed change via HRCD was out of compliance or determine that the parcel had a permit record during the study’s timeframe in question.

Improvements in methods of development permit tracking could improve the capacity to use HRCD data in pairing with permitting to track compliance. This result was not entirely unexpected, as the HRCD can serve as a starting point and help local governments find otherwise unknown changes, understand patterns, and investigate unexpected changes more closely. Furthermore, the HRCD proved to be a relatively simple dataset to use. With the development of standard application methods, Thurston County was able to complete an analysis of its remaining SMP area without any further help from WDFW.

²⁸ The land use change excludes over 25 acres of change occurring in the Billy Frank Jr Nisqually National Wildlife Refuge, because the loss of vegetation there was due to a saltmarsh restoration project.

Island County Critical Areas Permit Implementation and Effectiveness Monitoring

1. Determine the Reasons for Monitoring

Island County chose to monitor critical areas permit implementation and effectiveness because it often imposes strict conditions of approval on permits that impact critical areas or the shoreline. They also impose requirements for applicants to address critical areas violations.

2. Establish Key Objectives and Study Questions

Two of the key questions the County asks are:

- How do we ensure that these conditions are implemented? (Permit Implementation Monitoring)
- How do we know if performance standards are met over time? (Permit Effectiveness Monitoring)

The County sees these two questions as dependent on each other – without one, you don't have the other.

3. Design the Monitoring Program

Permit Implementation Monitoring

The County monitors all critical areas permits that are issued. It is time consuming to monitor every permit. Common conditions or requirements that are monitored include:

- Notice to title
- Conservation easements
- Protective buffers
- Buffer averaging
- Restoration
 - Includes performance standards
 - Takes time
- Mitigation
 - Includes performance standards
 - Takes time

The County uses separate denotations for wetlands projects, shoreline projects, and code violations. The denotations allow staff to track each type of permit separately. This allows the County to track each project separately. And, it allows staff to easily sort through the various projects.

The County uses the permit database, “parent” and “child” permit conditions²⁹, installation inspections, and as-built reports to conduct implementation monitoring. They have created child permits in the database to track implementation and effectiveness of parent conditions. Using the County’s SmartGov database, they generate automatic alerts for inspections, monitoring reports, document submittals, etc.

A typical child permit condition that is generated for parent mitigation requirements states:

The Critical Areas Planner shall be notified within seven days of mitigation installation to schedule an installation inspection. This inspection is required prior to final building inspection of the building permit.

This child permit condition puts the project on the County’s radar. It creates the necessary physical files associated with the project, and adds the project to the database. It ensures that mitigation is implemented by sending an email notices that triggers an installation inspection.

Once an inspection is requested, county staff visit the site for conformance with the approved mitigation plan. The planner then issues a field inspection report. Once the project has passed inspection, the County requires the applicant to submit an “As-Built” report that gives the County a baseline document for comparison with future monitoring reports.

An As-Built report typically includes:

- A short narrative of the project and the goals;
- A species list and number of plants that were installed;
- The date the planting was complete; and
- Photo documentation.

Once an As-Built report is submitted and approved, staff starts the “monitoring clock”.

Permit Effectiveness Monitoring

A typical mitigation project has a five-year monitoring period. Island County uses a number of tools for monitoring. For example, permit conditions include annual reporting requirements. A typical condition with mitigation associated permits states “Annual monitoring reports shall be submitted to Island County Planning and Community Development by October 31st for a period of five years”.

Staff use monitoring reports and periodic inspections to compare current conditions with the As-Built report, determine if projects are meeting their performance standards, and trigger periodic permit inspections. The County then uses information gathered from these activities to adaptively manage projects that aren’t meeting their performance standards by working with the landowner, and/or enforcing permit conditions when necessary.

Final inspections are similar in scope to installation inspections. Staff use them to verify that performance standards have been met. If standards have not been met, the inspection is used to identify problems, implement revisions, and continue to monitor, if needed.

²⁹ Planners create a “child” permit to generate notices for monitoring implementation after the “parent” permit with conditions has been issued and closed out.

Funding

Mitigation implementation and effectiveness monitoring is mostly funded through the permit fee system. When someone submits for a Reasonable Use Determination Permit (RUD) they have to pay not only the base permit fee(s), but also \$100 for each year of monitoring that is required for the mitigation project. Projects typically span five years. Therefore, applicants are required to pay \$500 (sometimes more if the project needs additional years).

4. Determine the Monitoring Time Frame

Staff monitoring and adaptive management of permit implementation and effectiveness is ongoing. No reports have been generated to date.

5. Evaluate Results and Make Recommendations

The County has not been monitoring long enough to have comprehensive results for evaluation. However, early results have revealed difficulties with implementation of planning requirements, and plant mortality. Challenges with the database have also been identified.

Island County Wetland Monitoring and Adaptive Management Program

1. Determine the Reasons for Monitoring

Island County adopted the Wetland Monitoring and Adaptive Management Program (WMP) in 2008 as part of its critical areas ordinance update.³⁰ The program assesses and monitors changes in wetland “health” to evaluate the effectiveness of the critical areas regulations in protecting wetlands health. It requires compliance assessment when thresholds of decline in wetland health are met. It is used to resolve non-compliant uses or initiate legislative changes to the critical areas ordinance.

The Island County Code specifically states:

Purpose. The primary purpose of the county's wetland monitoring program will be to determine the overall health of a wetland. To do so, the county will track both chemical indicators through measuring water quality and biological indicators by sampling wetland vegetation. These measures will be used to evaluate the effectiveness of county regulations.³¹

³⁰ ICC 17.02A

³¹ ICC 17.02A.080.A

2. Establish Key Objectives and Study Questions

The County has identified three key study questions and objectives for the program:

- Question: What is the status of wetland health in Island County?
 - Objective: Determine wetland health through baseline sampling
- Question: Is wetland health changing?
 - Objective: Track wetland health through monitoring.
- Question: Is Island County’s critical areas ordinance effectively protecting wetlands?
 - Objective: Evaluate the effectiveness of critical area regulations through compliance assessment where declines are found.

3. Design the Monitoring Program

The program was designed as follows:

- Conduct baseline monitoring from 2008 - 2012.
- Conduct monitoring to assess change from 2013 - 2017.
- Initiate adaptive management actions where thresholds of decline are met.

Contributing Area Category	Dominant Land Use in Contributing Area	Buffer Width and Degree of Intrusion
1	Forested	>100 feet forested
2	Forested	Slight buffer intrusion (75-100 feet)
3	Forested	Moderate to intense intrusion (0-75 feet forested buffer)
4	Ag or Developed	> 100 feet
5	Ag or Developed	75-100 feet
6	Ag or Developed	Moderate to intense intrusion (0-75 feet forested buffer)

Wetlands Sampling Selection

The County chose a sample size of approximately 60 wetlands with approximately 15 wetlands sampled annually. Wetlands were selected to represent a range of contributing areas, buffer widths, and levels of intrusion.

The parameters for sampling vegetation (herbaceous) were percent cover of non-native species, percent cover of native species, and species richness (diversity of species). The water quality parameters were dissolved oxygen, fecal coliform, nitrate, pH, phosphorus, temperature, turbidity, conductivity, and hardness.

4. Determine the Monitoring Time Frame

As previously noted, the county monitored baseline conditions for four years, then conducted monitoring over the next four years to assess change. Change is analyzed at five-year intervals.

The code requires the County to produce reports, including all baseline monitoring data, summary statistics, an assessment of the accuracy and completeness of the data, and a description of data collection issues, if any, identified during the reporting period as well as the following additional information:

- A description of any identified trends and all compliance assessments and source identification actions taken during the reporting period.
- A description of educational outreach actions as well as enforcement actions taken during the reporting period.
- A discussion of wetland monitoring priorities for the next reporting period.
- A description of enforcement actions relating to wetlands.
- A summary characterization of wetland health and the effectiveness of CAO regulations in implementing comprehensive plan goals and policies for wetlands.³²

The County completed four years' worth of baseline data collection and four years' worth of monitoring, concluded in 2017.

5. Evaluate Results and Make Recommendations

The thresholds for adaptive management are set out in the code:

- Greater than 10 percent increase in percentage cover of non-native species
- Greater than 10 percent increase in percentage change in species richness
- "Significant elevation of water quality contaminants"³³

Adaptive management actions identified as a result of exceeding these thresholds are:

- Compliance assessment/Source identification
- Education/Voluntary compliance
- Enforcement
- Modification of critical area regulations

While the County has completed five years of baseline data collection and five years of monitoring, adaptive management actions are on hold while the County assesses the need for revisions to the WMP. The County has identified a number of challenges to implementation of the program. These include staff turnover, inconsistencies in data collection, and inconsistent access to monitoring sites that require willing landowners.

The County has also had challenges with environmental conditions. Seasonally dry wetlands are difficult for conducting water quality sampling. Some wetlands have little herbaceous vegetation. There have been changes in hydrology. And there have been issues with distinguishing between natural change

³² ICC 17.02A.080.G

³³ ICC 17.02I080.B.5

versus change resulting from land use practices. Finally, this has been a time and resource-intensive program with limited staff and resources to devote.

Future recommendations for modifying the WMP include:

- Taking a watershed approach to monitoring instead of analyzing individual wetlands. This would be less time intensive, would allow the county to analyze larger tracts of land, and would provide more holistic data representative of larger ecosystems;
- Focusing on the Surface Water Management Plan and incorporating wetland compliance in priority watersheds; and
- Using High Resolution Change Detection to monitor vegetation loss remotely instead of on the ground.

Island County Surface Water Quality Monitoring

1. Determine the Reasons for Monitoring

Island County's impetus for monitoring surface water quality is to determine whether exemptions to the critical areas regulations (e.g., existing and ongoing agriculture) and permitted uses are adversely affecting critical areas.³⁴

The Island County Code specifically states:

Purpose. The primary focus of the county's water quality monitoring program is to detect and respond to potential sources of contamination of surface water that are adversely affecting critical areas. The sources of concern are primarily non-point source contaminants from uses allowed in the rural area of the county.³⁵

The Island County surface water quality monitoring program establishes baseline water quality and trends. The County uses the program to detect water quality impairments, and to initiate compliance assessment, source identification, and other adaptive management actions to address water quality impairments.

2. Establish Key Objectives and Study Questions

The County's surface water quality monitoring program establishes the following questions:

- Are permitted and exempt uses (e.g., agriculture) adversely affecting critical areas?
- Are water quality standards being exceeded?
- What are the sources of surface water contamination?
- Are exceedances attributable to non-compliance with the critical areas ordinance?
- Are site-specific modifications to Best Management Practices (BMPs) or legislative changes to the critical areas ordinance needed to address water quality impairments?

³⁴ ICC 17.02.040.L

³⁵ ICC 17.02.040.L.1

3. Design the Monitoring Program

The County has established a baseline for water quality monitoring, and it has initiated adaptive management actions where water quality exceedances are identified. The County has established sampling the following parameters with standards and thresholds, and is tracking them for trends:

- Dissolved oxygen
- Fecal coliform
- Nitrate
- pH
- Phosphorus
- Temperature
- Turbidity

4. Determine the Monitoring Time Frame

Island County began monitoring surface water quality in 2006. The program is ongoing.

5. Evaluate Results and Make Recommendations

The results of baseline water quality monitoring are used to prioritize watersheds for future monitoring and adaptive management actions in an effort to resolve water quality exceedances.

The County has the ability to initiate a number of adaptive management actions based on water quality data. They include:

- Compliance assessment and source identification
- Education
- Enforcement
- Site specific changes to BMPs for existing and ongoing agriculture
- Modification of the critical areas ordinance

King County

King County has also done monitoring of their critical areas ordinance under GMA and Puget Sound shoreline under SMA. For more information, see [Critical Areas Ordinance Monitoring](https://www.kingcounty.gov/depts/dnrp/wlr/sections-programs/science-section/critical-areas.aspx)³⁶, [WRIA 9 Marine Shoreline Monitoring and Compliance Pilot Project](https://www.kingcounty.gov/services/environment/watersheds/central-puget-sound/nearshore-environments/shoreline-monitoring.aspx)³⁷, and [Improving Environmental Outcome: An Evaluation of Compliance and Recommendations for Improvement](http://www.govlink.org/watersheds/8/committees/1003/KCPermitComplianceMasterReport-COMLETE.pdf)³⁸. Commerce hopes to add more detailed case studies on King County's work in future iterations of this chapter.

³⁶ <https://www.kingcounty.gov/depts/dnrp/wlr/sections-programs/science-section/critical-areas.aspx>

³⁷ <https://www.kingcounty.gov/services/environment/watersheds/central-puget-sound/nearshore-environments/shoreline-monitoring.aspx>

³⁸ <http://www.govlink.org/watersheds/8/committees/1003/KCPermitComplianceMasterReport-COMLETE.pdf>

City of Kirkland Shoreline Tracking

The City of Kirkland tracks shoreline permits and exemptions, building permits, and enhancement projects to ensure compliance with Shoreline Master Program permit conditions and maintain an ongoing record of shoreline changes.

1. Determine the Reasons for Monitoring

Kirkland adopted a new Shoreline Master Program (SMP) in August 2010 that covers approximately 10 miles of Lake Washington shoreline. The City wanted to track how the program is achieving “no net loss of ecological functions.” The City also wanted to develop useable data to track successes and failures, as well as meet Ecology periodic review requirements.

2. Establish Key Objectives and Study Questions

Key study objectives and questions are:

- Data collection: What are all the values, figures, and other possible data the City may want to collect?
- Goals: What are the short-term and long-term goals the SMP codes are intended to achieve?
- Purpose and Intent: Do the figures being collected capture the required information to show whether or not the City is maintaining ecological function and following the purpose and intent of the SMP?
- Administration: Can code administrators apply the code and collect the data without being unnecessarily burdened?
- Build consensus: Will the data be useful in future discussions with citizens, council, or commission members?

3. Design the Monitoring Program

The key question is how SMP requirements are being met. The city maintains checklists for key indicators of ecological function. For example:

- Shoreline stabilization: How many linear feet of hard shoreline have been added, removed, repaired, or altered? Was a geotechnical report and needs assessment required. How much “soft stabilization” was added, removed, or used to replace hard structures?
- Shore setbacks: How many square feet of structures have been removed from shore setbacks through mitigation?
- Overwater structures: How many new piers or docks were added? How much new grating has been installed?
- Vegetation: How many trees were removed, retained, planted for mitigation? How many square feet of lawn have been replaced with native plants?
- In-water enhancement projects: Are spawning gravels added? Have structures been removed?

The City fills in simple Excel spreadsheets³⁹ for each indicator area through the permit review process. The City confirms final project numbers at final inspection, reviews “as-built” plans, and ensures any recorded agreements are placed on title. City staff also have permit software (EnerGov) for tracking:

- Developed reviews and holds for specific project types.
- Long-term data collection.
- Reporting.
- Fee, security, inspection, and plan tracking.

4. Determine the Monitoring Time Frame

The City maintains a programmatic on-going permit monitoring system that began in August 2010 with adoption of the City’s new SMP. Reports are required every eight years, with interim internal check-ins.

5. Evaluate Results and Make Recommendations

The City’s interim tracking over the last seven years has revealed overall improvements in function accompanying development and redevelopment.⁴⁰ An example of measurable results generated from tracking spreadsheets for 2010 -2016:

- In water:
 - Approximately half an acre of solid decking removed.
 - 50 old piles removed.
 - Over 6000 square feet of in-water enhancement established
- In the riparian area:
 - 230 feet of bulkhead removed and replaced with soft shorelines.
 - 10,300 square feet of structures removed from the shoreline setback.
 - 149 native trees planted.
 - Over half an acre of native vegetation planted.



³⁹ Template for [Kirkland SMP Tracking Sheet](#).

⁴⁰ The City of Kirkland uses landowner recording agreements for shoreline improvements. See Appendix 7.C for Kirkland’s landowner agreement templates.

Annual evaluations of the interim tracking results have been used to make sure project data has been properly entered and checked on accuracy. For example:

- Individuals entering data have helped in clarifying the fields in the Excel spreadsheet.
- Inclusion of data in the EnerGov software tracking system.
- Modification of the spreadsheet at varying intervals to make sure data is clear and measurable.

The final eight-year results in 2019 will generate a work program, and long-range and current planning coordination. Recommendations for adaptive management will address:

- Review of code administration – administrative recommendations based on internal staff review include:
 - Are we achieving the key objectives and study questions?
 - What internal steps are working or could be improved to maximize compliance with the purpose and intent the SMP and SMA?
 - Have we installed any roadblocks to educating the public on the benefits of a healthy shoreline?
 - Are there any ways to incentivize additional shoreline enhancements? Are there any roadblocks to homeowners to propose voluntary shoreline enhancement plans?
- Update of tracking system. Are our permit processes helping or hindering the recording of this data?
- Possible code amendments.
- Report results.

One key to the City’s success with this program is that the planner who led the 2010 SMP update developed the monitoring and adaptive management program.

City of Bainbridge Island Shoreline Monitoring Program

1. Determine the Reasons for Monitoring

Both Bainbridge Island elected officials and community members had an interest in monitoring efforts to collect recent, local, and scientifically appropriate data with which to review and assess the effectiveness of the City’s SMP. Planning staff developed an SMP monitoring program based on City Council direction in April 2015. While there has been little implementation of the program to date due to lack of staff time and funding, lessons learned will be useful for the critical areas ordinance update. This case study focuses on how the SMP monitoring program was envisioned and planned to work. The primary goals of the SMP monitoring program include:

- Meet regulatory requirements.
- Document compliance with SMP regulations.
- Quantify and characterize environmental change in the shoreline.
- Expand knowledge and understanding of SMP goals, policies, and regulations.
- Establish a common understanding of shoreline resources and regulatory framework.
- Provide feedback for the next SMP update.

2. Establish Key Objectives and Study Questions

The monitoring program was designed to help answer several key questions:

- Is effective compliance with SMP regulations being achieved?
- Are gains or losses of ecological functions and processes occurring in the shoreline environment?
- If losses are occurring, what are the drivers?
- What are the programmatic and/or regulatory adjustments needed to achieve no net loss of shoreline functions and processes?

3. Design the Monitoring Program

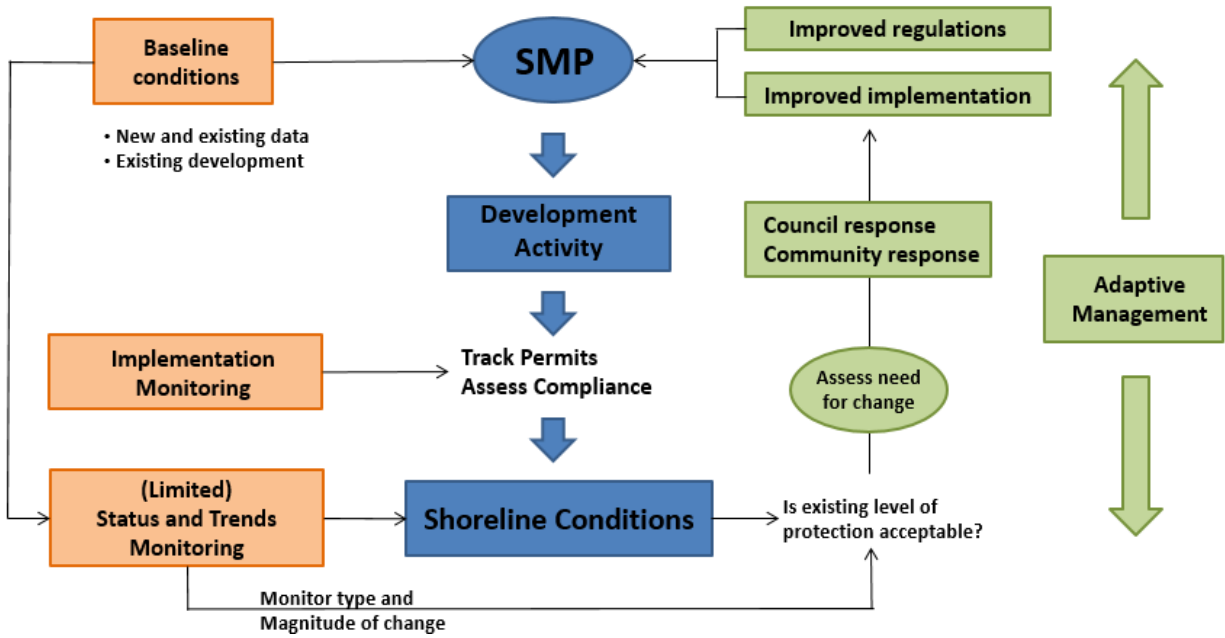
The monitoring program was designed based upon a series of general steps:

- Conduct extensive research and discussion by the City's Environmental Technical Advisory Committee and others.
- Convene a peer workshop with shoreline research and regulatory professionals for review and refinement.
- Gather input from shoreline, monitoring and outreach experts.
- Develop a specific monitoring strategy.
- Gain Council acceptance.
- Develop a first-year program.

The monitoring program is designed to measure a number of shoreline functions, including:

- Eelgrass and kelp - Monitoring important nearshore subtidal habitats.
- Intertidal beach sediment supply, sediment distribution, and shoreline position - monitoring critical habitat for juvenile salmonids, forage fish, shellfish and eelgrass, including changes to major shoreline features.
- Marine riparian vegetation – monitoring shading, and food supply to the nearshore.
- Water quality – Monitoring for adequate water quality for fish and nearshore resources.
- Estuarine emerging vegetation (salt marsh) – monitoring for changes in critical salt marsh habitats.

The monitoring program includes two types of monitoring that will provide data to inform adaptive management actions. In general, implementation monitoring is intended to (a) capture and track permit activity; and (b) ensure compliance with permit-level mitigation measures and performance standards. Status and trend monitoring is intended to monitor change in established ecological parameters.



Monitoring Approach

Monitoring results will inform an adaptive management process aimed at improving both regulations and program implementation as needed.

4. Determine the Monitoring Time Frame

The monitoring program was initiated in 2015, and was planned to extend through the City’s next SMP update in 2020. Year 1 was to conclude at the end of 2015. Monitoring results were to inform the City’s next SMP update, due in 2020.

The first year of funding was anticipated to include only allocation/dedication of current planning staff. Subsequent years would require additional funding dependent on the results of Year 1 and recommendations for adaptive management and program growth.

5. Evaluate Results and Make Recommendations

As of early 2018, some activity has occurred. LiDAR data and air photos had been collected and converted to land use/land cover data through a WDFW grant. A DNR eelgrass monitoring effort has expanded the scope of data collection to include the south shore of the island. The City is exploring a potential partnership with the Western Washington University Huxley College of the Environment in Poulsbo.

The City is developing a permit tracking framework to capture project data consistent with typical impacts as outlined in its Single Family Residence Shoreline Mitigation Manual: vegetation removal, new impervious surface area, placement of fill, and new overwater structure coverage.

Bainbridge Island has learned a number of lessons from this effort:

- Motivation and funding is limited when there is no mandate.
- Scientists and planners need to collaborate on the feasibility of data collection and database management.
- It is important to look for all available resources (e.g., other ongoing monitoring efforts, and grant and partnership opportunities).
- It is difficult to develop a permit tracking system “after the fact”.
- It is important to consider how permit tracking will occur when writing code.
- Permit tracking expectations for staff at “onboarding” need to be developed.
- It may be more effective to have dedicated staff for compliance monitoring.

The effort informed the City’s update of its critical areas regulations. It has created a minor critical area permit for tracking/monitoring purposes. Previously, many activities within critical areas were not captured. There was no review, or review in conjunction with clearing or building permits. There is no fee or intake appointment required, and it often can be approved at the counter.

In addition, the City is setting up a permit database to begin tracking as of the effective date of its newly updated critical areas ordinance. Planning has added a new critical areas review workflow step, attaching it to the “parent permit” where possible to streamline the process while still being able to track the permit. The planner must enter critical area project details (e.g., area of wetland buffer reduction, area of buffer mitigation) before a permit can be closed out of the system, which allows the City to generate reports on permitted activities within critical areas.

Bellingham Critical Areas Permit Implementation and Effectiveness Monitoring

1. Determine the Reasons for Monitoring

The City of Bellingham monitors critical areas through permits but also for its own restoration projects in critical areas and shorelines because Bellingham places a high value on the environment. The City has not only adopted a critical areas ordinance (CAO) but has adopted goals and policies aimed specifically at protecting and restoring critical areas. These goals and policies are part of the Environment Chapter (Bellingham Comprehensive Plan) and are also reflected in Bellingham’s “Legacies”, the long-term goals adopted by the City Council in 2009. Together these form the foundation that supports the monitoring, protection, and restoration of critical areas. Two of the key Legacy goals are: protect and improve the health of lakes, streams and Salish Sea; and protect and restore ecological functions and habitat

Monitoring Program



The regulatory protections embodied in the CAO are the foundation of critical area permit conditions, and they sprout from the purpose section of the CAO. One such purpose: *Prevent cumulative adverse environmental impacts to water quality, wetlands, and fish and wildlife habitat, and the overall net loss of wetlands, frequently flooded areas, and habitat conservation areas.*⁴¹

2. Establish Key Objectives and Study Questions

The City regularly monitors critical areas permits (shoreline permits are not discussed here specifically but monitoring is similar). The key objective of monitoring is to determine if the mitigation is meeting goals, objectives, and performance standards that are based on code requirements (i.e. should result in no net loss of functions and values). The required annual monitoring report indicates if maintenance has occurred and lists the deficiencies so that the City can require corrections before any financial surety is released annually.

In addition, monitoring provides new evidence for adaptive management. For mitigation, it tells staff what is working and not working with regard to plants, techniques, timing, etc. For general monitoring, it can help prioritize restoration actions or determine when restoration will not yield ecological lift.

3. Design the Monitoring Program

The City has mapped and characterized many of its critical areas, and this GIS mapping (called “CityIQ”) greatly enables monitoring. GIS staff map each wetland delineation received as part of a development application and these are layered on top of past citywide wetland inventories giving the public and staff a good planning tool. Knowing where critical areas are is essential to being able to monitor them. A

⁴¹ BMC 16.55.010D(4)

good example of the City’s mapping and characterization is the 2015 Habitat Restoration Technical Assessment in which four habitat types—wetlands, forest, meadows, streams—were assessed for ecological function and rated for restoration potential.

These “road maps” enhance monitoring done for a variety of reasons and from a variety of funding sources. Some monitoring is done because of adopted total maximum daily loads (TMDLs), some because of strong community interest, and others because it is a piece of a robust stream and marine restoration program. The city also monitors on a systematic level all critical area and shoreline permits.

Permit-based monitoring starts with critical area permits written with a list of legal “findings and conclusions” on which the permit conditions are based. One of the standard conditions requires a minimum of five consecutive years of monitoring and maintenance.

In addition to monitoring (and maintenance) the applicant is required to submit a financial surety based on a line-item estimate of all mitigation costs multiplied by 150 percent. The financial surety is held for a minimum of five years and released annually only when the performance standards for mitigation are met as described in the annual monitoring report. All critical areas remaining onsite, such as wetlands, streams, and their buffers, are protected in perpetuity through a recorded conservation easement that is added to the City’s GIS layer.

Tracking permits and permit conditions is done through TRAKiT, the City’s permit software program. Staff also uses an Excel spreadsheet to track monitoring status for each monitoring year for all critical area and shoreline permits.

The city monitors its own restoration projects, such as the “Whatcom Creek Red Tail Reach”, a major stream channel improvement project. Monitoring this restoration project will use high-resolution change detection in order to monitor the ecological changes after restoration. The City also has access to drone technology for such projects.

Monitoring permittee mitigation is part of the permit staff’s job, so permit fees fund the work in part. Funding for city-sponsored restoration projects comes from a variety of sources, including grants and a settlement fund from the 19999 Whatcom Creek fire.

4. Determine the Monitoring Time Frame

The City has monitored critical area permit mitigation requirements since adopting the first wetland regulations in 1992. However, both tracking and mitigation results have improved with updated permit software tracking, consistent permit writing, improved mitigation plans and implementation, and regulatory tools aimed at mitigation success. Each critical area permit has a monitoring period of five years, or later if the performance standards are not being met.

Non-permitted monitoring carried out by the City is ongoing, and in many cases long term. Some examples of annual monitoring are:

- Urban Streams Monitoring Program Report since 1989
- Lake Whatcom Monitoring Project Report for decades
- Great Blue Heron Colony Annual Reports since 2000

5. Evaluate Results and Make Recommendations

The City's non-permit related monitoring projects have resulted in a broad spectrum of adaptive management. Urban streams monitoring helps prioritize restoration projects aimed at lowering stream temperature. Lake Whatcom monitoring has resulted in new regulations, land acquisition, and major stormwater retrofits because the lake is the City's sole water supply. A major construction project adjacent to the heron colony was managed to avoid the most vulnerable periods in the nesting season.

Permit-related monitoring also results in adaptive management. In updates to the City's CAO, a number of protection measures have been codified, including the requirement for financial surety for each mitigation project. Adaptive management was put into place when the City started requiring in permits that mitigation plants be installed by specialists, after witnessing failures due to lack of expertise. A small industry of ecological restoration specialists is now established because there is a market for their expertise.

A local "wetland study group" composed of wetland biologists and agency staff hold periodic meetings focused on an identified topic. The problem solving and communication have gone a long way to help all who participate in some way with the evaluating and the protecting of critical areas.

Tacoma Critical Area and Shoreline Monitoring Program

1. Determine the Reasons for Monitoring

The Growth Management Act and the City of Tacoma's critical area preservation ordinance require "no net loss" to preserve the existing functions and values of critical areas. The City's Shoreline Master Program (SMP) policy requires "no net loss" and an overall "net gain" of ecological function, as well as preservation of existing functions and values. The City's use preferences have a requirement that non-preferential uses maintain vegetated buffers to address net gain. The City's use preferences require redevelopment or development for uses other than a water-dependent use to maintain a vegetated marine buffer even in areas where the buffer is currently not vegetated.

2. Establish Key Objectives and Study Questions

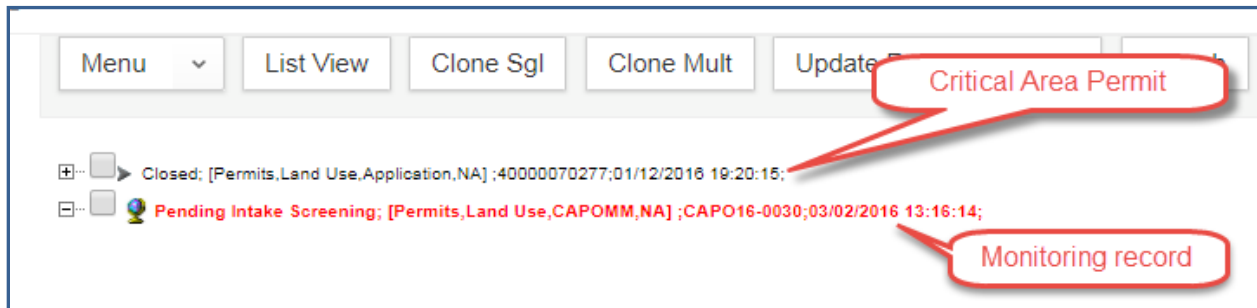
The objectives for permit implementation monitoring are to track compliance with the goals of the CAPO and SMP for each approval. The two permit implementation questions are:

- Does the permit provide clear conditions to ensure compliance?
- Is the project consistent with the regulations?

Permit compliance questions are:

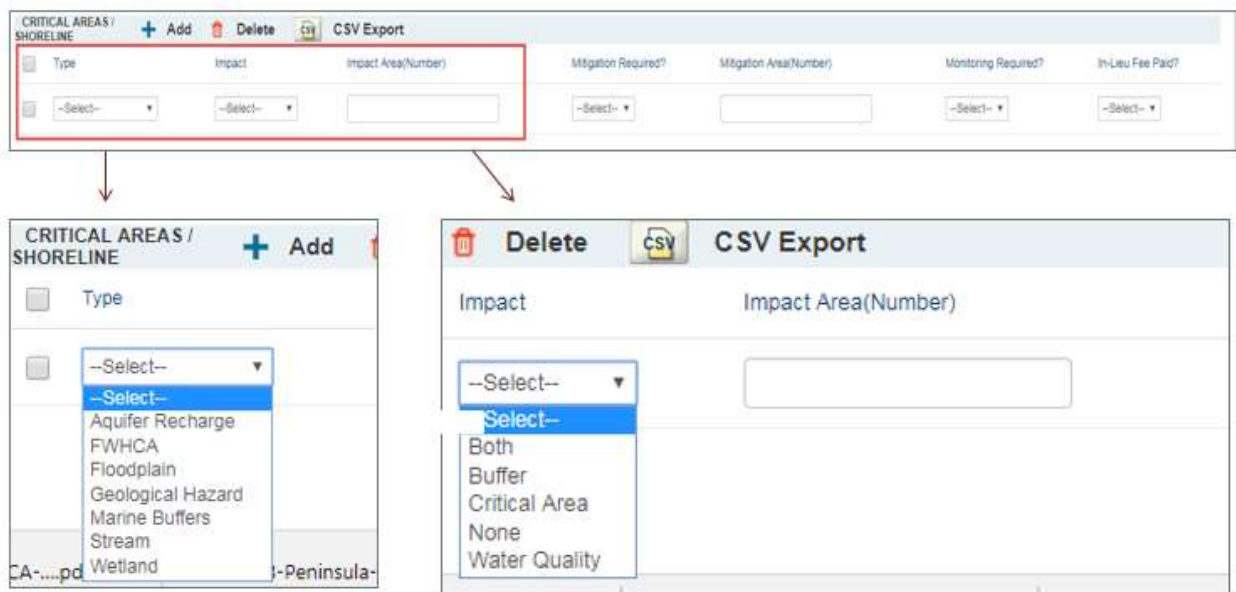
- Was the project constructed consistent with the permit? A site visit is conducted to verify construction is in compliance with the permit. Staff look at whether BMPs are installed to minimize impacts, fencing and signage are installed, and notice is recorded on the title.
- Was the required mitigation installed? Bonding is required to ensure compliance. Site visits are conducted to verify planting installation complies with As-Built requirements. Site visits are also used to verify annual monitoring reports regarding the percent of plant survival, and to measure and report on compliance with goals and performance standards.

3. Design the Monitoring Program

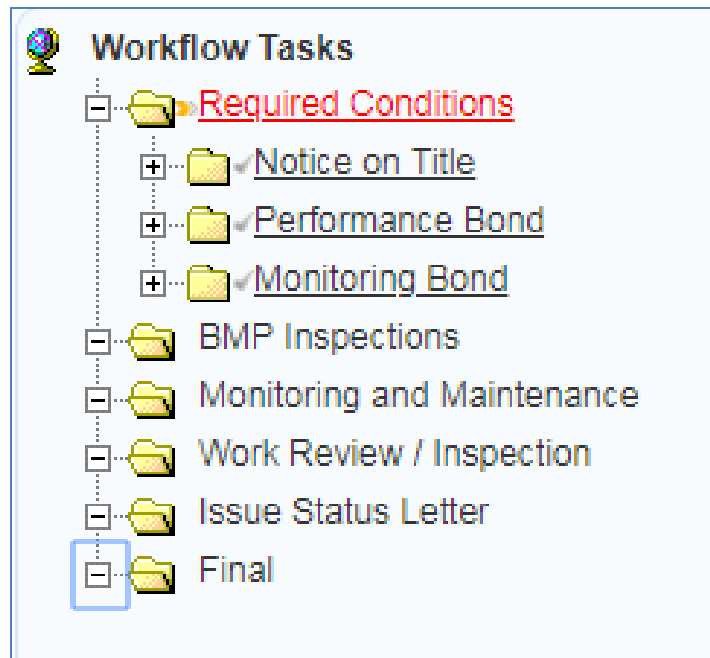


Tacoma uses the Accela permitting database for permits and monitoring. The City keeps separate records for each permit approval and for long term monitoring.

Parent Permit -Metrics for Impacts and Mitigation.



Staff use the parent permit to establish the metrics for monitoring impacts and mitigation. They use a child permit to create a separate critical areas monitoring record.



General Schematic for Monitoring Record

The City has unique compensatory mitigation conditions that are monitored separately. This includes the long-term monitoring of the overall success of vegetation and mitigation performance standards.

4. Determine the Monitoring Time Frame

The City monitors on an ongoing basis. Reports can be produced for any time period. However, the City is not currently issuing reports on a regular basis.

5. Evaluate Results and Make Recommendations

The City is always monitoring projects to ensure they meet permit requirements. They look at whether mitigation sites are meeting performance standards as required by the permit. If requirements are not being met, staff review whether critical area code requirements are sufficient to ensure protection. Staff also look at whether better enforcement or financial sureties are needed.

Washington State Department of Fish and Wildlife Hydraulic Project Approvals

The Washington State Department of Fish and Wildlife (WDFW) is monitoring its hydraulic project approval (HPA) program. WDFW's [Year-One Progress Report: Implementation and Effectiveness](#)

[Monitoring of Hydraulic Projects](#)⁴², February 2015, addresses implementation monitoring for process improvement and effectiveness monitoring for desired habitat conditions.

1. Determine the Reasons for Monitoring

WDFW is monitoring its HPA program to help ensure that hydraulic projects are compliant with current rules, and that current rules effectively protect fish habitats. The main purpose of monitoring is to provide information that, over time, helps the department improve both implementation of the hydraulic code rules and the effectiveness of those rules at protecting fish life.

2. Establish Key Objectives and Study Questions

The focus of WDFW's implementation monitoring is on improvement of the performance of both WDFW as the permittor, and permittees (applicants). In 2013 WDFW limited the scope of its monitoring to new and replacement culverts on fish-bearing streams in western Washington and new and replacement marine shoreline armoring in Puget Sound. The study asked four key questions:

- Did the permittor issue a complete permit, that is, one that contains provisions and/or project plans for all critical structural dimensions?
- Did the permit or application materials contain the information needed to determine consistency with Chapter 220-660 WAC?
- Did the permittee comply with the permit?
- Does the completed hydraulic project comply with the hydraulic code rules?

3. Design the Monitoring Program

In 2013 WDFW conducted implementation monitoring on 54 culverts in Western Washington. Implementation monitoring focused on four critical structural dimensions: culvert width at streambed, culvert slope, countersunk depth at outlet, and culvert length. The department also estimated bankfull width at each site. The 2013 monitoring attempted to answer two questions about the HPA permitting process: 1) Did permittees comply with their HPA permits; and 2) Did hydraulic structures comply with hydraulic code rules?

4. Determine Monitoring Time Frame

The monitoring study is ongoing. The one-year progress report was issued in February 2015, and results from 2014 and 2015 will be available in July 2017.

5. Evaluate Results and Make Recommendations

Key findings from monitoring culverts were:

- The most important parameter for culvert design is channel width. Yet, it appears that many permittees do not know what they should be measuring or how they should be measuring it.
- A significant proportion of HPA permits lacked information necessary to determine whether the culvert's dimensions will be consistent with rules and/or design guidelines.
- Basic information essential to the HPA process was difficult to find in the permit, plans, Joint Aquatic Resources Permit Application (JARPA), and other materials submitted by the applicant.

⁴² <https://wdfw.wa.gov/publications/01746/>

- The permittee compliance rate for the four critical structural dimensions was 76 percent.
- The permit accordance rate – number of permits that are in accordance with the hydraulic code rules – varied greatly and was found to be unreliable. The lack of a widely accepted, standard procedure for measuring channel width is the likely cause of the variance. There was a discrepancy between the rate of permittee compliance with the HPA permit (76 percent) and the permit accordance rate (50 percent). Accordance with the rules is the responsibility of the permittor issuing the permit. The size of this discrepancy may be largely due to different methods for estimating channel width as noted above.

Recommendations and follow up from the report:

- Language referring to stream channel width should be identical in hydraulic code rules, permit provisions, and culvert design guidelines.
- Standard procedures for estimating mean bankfull width and channel slope should be developed by WDFW and widely distributed for use by HPA applicants. The WDFW Habitat Program Science Division is currently developing these procedures.
- Key information – such as bankfull width, channel slope, culvert design type, and culvert dimensions – should be reported and easy to find. We recommend a mandatory form for all HPA applications to be completed by the applicant. Standard permit provisions effective July 1, 2015, now require this information.
- WDFW or some other credible organization should check bankfull width measurements submitted by HPA applicants. Habitat biologists are now encouraged to confirm all information contained in the plans for fish passage culverts.
- For no-slope culverts, WDFW or some other credible organization should check channel slope submitted by HPA applicants. Habitat biologists are now encouraged to confirm channel information contained in the plans for fish passage culverts.
- Standard permit provisions for culverts used by WDFW habitat biologists should be reviewed for consistency with hydraulic code rules and design guidelines. Standard permit provisions effective July 1, 2015, were reviewed for consistency with Chapter 220-660 WAC.

State and Federal Mitigation Monitoring Programs

If local governments are also interested in compliance monitoring, two examples from Ecology and the U.S. Army Corps of Engineers are provided.

Washington State Department of Ecology Wetland Regulatory Effectiveness Program

The Washington State Department of Ecology (Ecology) performs compliance reviews of compensatory wetland mitigation projects (i.e., when wetlands are replaced to mitigate for unavoidable fill) to ensure compliance with wetland permit conditions.⁴³

1. Reasons for Monitoring Compliance

The goal of compliance is to improve the success rate of wetland mitigation projects, ensure that wetland mitigation is implemented according to permit conditions, and to work collaboratively with applicants to achieve compliance and success at individual sites. At each site, the goal is to identify problems with wetland mitigation sites early, and determine corrective actions and adaptive management necessary to ensure a successful mitigation site.

The compliance program was developed after a series of evaluations between 2001 and 2003 found mitigation projects were not consistently replacing wetland acreage and functions, and compliance tracking and follow-up was incomplete and sporadic.

2. Key Program Questions/Objectives

The wetland mitigation compliance program's priority is wetland mitigation projects where Ecology issued a Section 401 Water Quality Certification or Administrative Order for wetland impacts. Key questions include:

- Are compensatory mitigation sites meeting goals, objectives and performance standards?
- Are sites being maintained? Are site conditions improving over time after initial construction?
- Are sites meeting acreage requirements for wetland and buffer?

3. Monitoring Program Design

The program is ongoing. From 2004 – 2016, the program tracked 220 projects with permittee-responsible mitigation requirements, and 60 projects using alternative mitigation such as mitigation bank credits, advance mitigation, or in-lieu fees.

Ecology provides recommendations in formal follow-up letters from site inspections; reviews reports (as-built and monitoring reports), tracks deadlines, and ensures reports have complete information per Ecology's Order.

⁴³ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Mitigation/Compliance>

The program includes site inspections at several stages: “As-built” stage, after the mitigation project is first completed; midway through the monitoring period; and at project closeout (typically 10 years). At closeout, the site inspection informs whether the site has met its goals, objectives, and performance standards.

4. Monitoring Program Time Frame

This is an on-going program that began in 2006. Ecology prepared reports to the Washington State Office of Financial Management on two basic performance measures:

- Within 2 years of permit issuance, determine the status of 100 percent of wetland mitigation projects.
- For at least 75 percent of wetland mitigation projects, conduct a site inspection within 18 months of receipt of the “as-built” report (i.e., a site visit should be conducted soon after the project is complete).

5. Evaluation of Results and Recommendations

The wetland mitigation compliance team has identified numerous benefits to date, including:

- Ecology finds an increase in voluntary compliance because applicants know there is oversight (less time needed checking up on every project)
- Key to the improvements is the ability to work with applicants early to address issues that would result in site failure. It is essential to have the consultant or applicant on-site during site reviews. Early follow-up is important.
- Mitigation plans need to have well thought-out goals, objectives, performance standards, monitoring, and contingency plans to begin with. However, evaluations must also be flexible and acknowledge that sites are not always going to turn out as planned.
- Coordination between regulatory agencies including the U.S. Army Corps of Engineers and local governments is vital.
- The evaluation program created a feedback loop to improve permitting decisions – lessons learned during site visits can be applied to review of current mitigation proposals. The results of the compliance program have improved consistency and predictability through better standardized requirements (401 conditions, requirements for plans)
- The program has helped target improvements needed in guidance and training.

U.S. Army Corps of Engineers Mitigation Compliance Program

1. Reasons for Monitoring Compliance

There are multiple goals for this program, including

- Protect human health and safety by ensuring permit conditions are being met.
- To work toward no net loss of aquatic function, wetland acreage, or river/stream miles.
- To level the playing field by ensuring that everyone complies with their respective permit conditions equally.
- To improve the permitting process by closing the feedback loop between what impacts and mitigation are permitted and how effective and efficient that mitigation is over time at replacing lost functions and values.

2. Key Program Questions/Objectives

Compensatory mitigation for Section 10 permits might include riparian planting, bulkhead removal, pocket beach creation, removal of old pilings, other structures, or debris, and more. Compensatory mitigation for Section 404 permits includes wetland or stream creation, restoration, enhancement, and/or preservation. This program looks at permittee-responsible mitigation. Compliance for mitigation banks and in-lieu fee programs is handled separately. The three key questions are:

- Was the mitigation installed according to the approved drawings and plans?
- Is the mitigation meeting performance standards? If not, what contingency actions must occur to bring the site into compliance with performance standards?
- Has the required documentation been submitted, such as proof of site protection mechanisms?

3. Compliance Monitoring Program Design

With hundreds of projects permitted each year that require compensatory mitigation, Corps staff prioritizes projects for compliance reviews. Various factors go into prioritization, including project size, complexity, location, and history, the rareness of the resource impacted, and others. Corps staff coordinates with the Washington State Department of Ecology Wetland Regulatory Effectiveness Program staff, as time allows, to share information and avoid overlap of efforts. Corps staff reviews and approves compliance documents such as as-built reports, monitoring reports, and proof of site protection mechanisms such as deed recordings and protective easements. Corps staff also conducts compliance inspection site visits. Recommendations are provided in emails and letters following reviews and inspections.

4. Monitoring Program Time Frame

Compliance has been ongoing since the inception of the Regulatory Program. However, wetland and stream mitigation started in the mid-1980s, and in 2008. With the implementation of the Federal Mitigation Rule, compliance efforts have increased.

5. Evaluation of Results and Recommendations

The Corps' compliance program has varied over the years. The Corps has hired contractors or term staff to complete compliance reviews but its compliance program mainly is the responsibility of project managers. The Corps does not have a permanent compliance team that evaluates the compliance program's effectiveness or develops recommendations. Instead, as workload allows, project managers meet together and discuss compliance issues, failures, and successes, and internal protocols are developed to improve the effectiveness of the compliance program.

Washington Department of Fish and Wildlife High Resolution Change Detection

WDFW has produced a spatial dataset (GIS layer), High Resolution Change Detection, that shows where change has occurred over a two-year period.



WDFW High Resolution Change Detection

The minimum size of change is 0.05 acres. The data has been developed for Puget Sound as follows:

- 2006 – 2009
- 2009 – 2011
- 2011 – 2013

WDFW is currently seeking funding for 2013 – 2015. For more information, go to WDFW's web site at [High Resolution Aerial Imagery Change Detection](#).

Washington Department of Natural Resources LiDAR

The Washington State Legislature mandated that the Department of Natural Resources (DNR), Washington Geological Survey collect, analyze, and publicly distribute detailed information about our state's geology using the best available technology, Light Detection and Ranging (LiDAR). The main focus of this new push for LiDAR collection is to map landslides, but there are innumerable additional benefits and applications of these data both inside and outside of the field of geology. For more information about DNR's LiDAR program, go to the [LiDAR web site](#).

Department of Ecology Wetland Change Analysis

Ecology's Wetland Change Analysis project developed a method for more accurately mapping wetlands. The resulting wetland maps will be used as a wetlands status and trends inventory to help determine if the goal of No Net Loss of wetlands is being achieved in Washington State. For more information on wetlands change analysis and the Wetland Inventory Map, go to [Ecology's Wetland Change Analysis web site](#).

Department of Ecology Environmental Information Management

Ecology maintains an Environmental Information Management (EIM) database. The database contains data collected by Ecology and affiliates such as local governments and cleanup sites. Users can submit and access discrete and time-series environmental data for air, water, soil, sediment, aquatic animals, and plants at the [EIM web site](#).

Ecology and Federal Emergency Management Agency Risk MAP

Ecology partners with the Federal Emergency Management Agency (FEMA) to run the Risk Mapping, Assessment and Planning (Risk MAP) program in Washington. This program delivers high-quality data, risk assessment tools and mitigation expertise to communities, tribes, and State and local agencies in their efforts to reduce the risks from natural hazards including floods, earthquakes, wildfire and landslides. Washington information can be accessed at the Ecology [Risk MAP web site](#).

Critical Areas Monitoring and Adaptive Management Workshops

Commerce, Ecology and WDFW conducted a series of workshops around the state in early 2018 to provide tools for and get feedback from counties and cities on how to build local and state monitoring and adaptive management programs for protecting critical areas. Over 230 people have participated, with positive reviews. The local government and other presentations generated rich conversations around the barriers and solutions to developing and implementing effective monitoring programs. Many of the local government presentations are included in the case studies in this chapter.

Benefits of Monitoring

Participants identified many benefits to monitoring and adaptive management of critical areas regulations. Monitoring provides certainty by ensuring regulations are being implemented consistently.

It provides data rather than anecdotes. Monitoring data educates the public, applicants, and elected officials about efforts to protect critical areas. It provides area-wide trend data about progress on no net loss.

Monitoring the permit process and tracking performance standards and mitigation identifies areas for improvement. Monitoring provides information to update the critical areas inventory and status. It creates consistent application of the regulations over time, and can lead to code clarifications and improvements. The results inform the inter-relatedness of regulations and cross-team improvements.

Challenges of Monitoring

Conversations about barriers identified common concerns such as lack of staff resources and funding. Changes in leadership and staff contribute to inconsistent application of the regulations. Balancing diverse community interests such as jobs and the environment, as well a lack of political will, creates implementation challenges for staff. Changing state mandates make it difficult to keep the code updated.

Many expressed a general frustration with database challenges of sorting, monitoring, and transferring information. Baseline data is lacking, and there are delays in acquiring data from other departments or agencies. Other challenges were the loss of institutional knowledge, concerns with private property rights, and discrepancies between jurisdictions.

Problem Solving – Peer Consultation

Participants discussed challenges they are facing or might face in starting a monitoring program, and discussed with their peers on how they might address those challenges. With respect to staff and resource issues people discussed:

- Copying another jurisdiction's system;
- Conducting collective monitoring for an area;
- Working with Ecology on enforcement issues;
- Time investment in a monitoring program with state grants;
- Having the state provide technical training and support;
- Taking advantage of state tools like HRCD;
- State provision of one-stop shops for guidance and data to educate planners;
- Charging for monitoring and use performance bonding;
- Partnering with conservation districts to leverage resources.

Some ideas for addressing issues of political will included:

- Communicate the economic functions and values of critical areas, such as fisheries, tourism;
- Use monitoring to reduce lawsuits and liability;
- Develop partnerships with the state, federal agencies, and tribes to provide political support and help communicate the message.

Conclusions

Monitoring and adaptive management is a logical next step to critical areas protection after years of developing and implementing critical areas and shoreline regulations. All interest groups have a common interest in critical areas permit processes that are transparent, fair and effective. Permit applicants want to be treated fairly. Advocacy groups, whether from an environmental or private property rights perspective, want to know if the process is being applied consistently. Consultants want the opportunity to improve the quality and speed of permits. Tribes that have asserted their treaty rights are at risk from inadequate land use management want to know if the permits are being applied effectively.

We can know if we are achieving no net loss only through examining implementation over time. We should proceed with humility, recognizing that there is always uncertainty in the face of the complexity of both natural science and human nature. Curiosity should be our guide – we should be open to trying different approaches. We should respect the perspectives of all involved. The natural resources that we manage have many layers, so we must make sure to build partnerships to take advantage of our different roles and expertise.

A feedback loop provides the information a local government needs to determine whether permit requirements are being written consistent with regulations, whether process improvement is needed, or whether staff need training. We hope the information provided in this chapter will help local and state efforts to assess and improve critical areas and shoreline protection permit processes.

APPENDIX 7.A

JEFFERSON COUNTY NO NET LOSS CHECKLIST



JEFFERSON COUNTY

DEPARTMENT OF COMMUNITY DEVELOPMENT

Jefferson County No Net Loss Checklist

The purpose of completing this checklist is to show consistency between the policies and regulations in the Jefferson County Shoreline Master Program and the implications for shoreline ecological functions, as it pertains to the no net loss (NNL) requirement. This checklist is to be completed by the Planner reviewing the proposal for all development and use applications within shoreline jurisdiction.

Is the proposal within shoreline jurisdiction? ____ **Yes (Complete this form)** _____ **No (Form not required)**

Planner _____ Date _____

Application Information

MLA # _____ SDP # _____ or Case # _____
(If case number is used, has the 'Special Conditions tab/Shorelines' been checked in Tidemark? Yes _____ No _____)

Applicant Information

Landowner Name _____

Applicant (if different from landowner) _____

Representative _____

Project Information

Project Address _____

Parcel Number _____ Type of Ownership (if other than Private) _____

Proposed Project Description _____

Shoreline Information

Shoreline Type: Marine _____ River _____ Lake _____

Waterbody Name _____ Shoreline Reach _____

Shoreline Use (based on Table 18.25.220) _____

Environmental Designations: Priority Aquatic _____ Aquatic _____ No in-water components _____

Natural _____ Conservancy _____ Shoreline Residential _____ High Intensity _____

Type of shoreline approval: Shoreline Exemption _____ Shoreline Substantial Development _____

Conditional administrative _____ Conditional discretionary _____ Variance _____

PRELIMINARY NNL REVIEW

Answer all Preliminary NNL Review questions on this page. For any 'Yes' responses, also complete the Detailed NNL Review questions (with the corresponding number 1 through 13) on the following pages.

GENERAL SHORELINE MASTER PROGRAM (SMP) REGULATIONS:

1. Will the proposed project be constructed within a standard shoreline buffer and setback (JCC 18.25.270(4)(e) and 18.25.300(2)(a)) for conforming lots or exceed the provisions of JCC 18.25.270(5) for non-conforming lots?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 3)
2. Will any portion of the proposed project be constructed in a geologically hazardous area, a landslide hazard area buffer, or a setback for a landslide hazard area or a high-risk channel migration zone (Article V, Chapter 18.22 JCC.)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 4)
3. Will any portion of the proposed project be constructed in a fish and wildlife habitat conservation area, buffer, or setback (Article VI, Chapter 18.22 JCC)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 5)
4. Will any portion of the proposed project be constructed in a wetland or wetland buffer (Article VII, Chapter 18.22 JCC)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 6)
5. Will any portion of the proposed project be constructed in a frequently flooded area (Article IV, Chapter 15.15 JCC)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 7)

SHORELINE MODIFICATION REGULATIONS:

6. Does the proposal include Beach Access Structures (JCC 18.25.340)?
No _____ Yes _____ (if yes, answer Detailed Review questions on pages 8-9)
7. Does the proposal include Boating Facilities (JCC 18.25.350)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 10-11)
8. Does the proposal include Dredging or Disposal of Dredged Materials (JCC 18.25.360)?
No _____ Yes _____ If yes, answer Detailed Review questions on page 12)
9. Does the proposal include Filling and/or Excavation (JCC 18.25.370)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 13)
10. Does the proposal include Flood Control Structures (JCC 18.25.380)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 14)
11. Does the proposal include In-stream Structures (JCC 18.25.390)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 15)
12. Does the proposal include Restoration (JCC 18.25.400)?
No _____ Yes _____ (If yes, answer Detailed Review questions on page 16)
13. Does the proposal include Structural Shoreline Armoring and/or Shoreline Stabilization (JCC 18.25.410)?
No _____ Yes _____ (If yes, answer Detailed Review question on pages 17-19)

If the answer is 'No' to all of the above, the likelihood of the project negatively affecting shoreline ecological functions is minimal and it is assumed that the 'No Net Loss' requirement is met. Sign page 20.

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 1.

1. *The proposed project will be constructed within a shoreline buffer (and 10-foot building setback) for conforming lots or will not meet the modest home provisions for non-conforming lots.*

a. How much impervious surface will be created? _____ square feet

b. How much ground disturbance will occur? _____ square feet

c. Does the proposal avoid removal of forest habitats? Yes _____ No _____

If no, how much forest cover will be removed? _____ square feet

If no, describe the mitigation measures proposed to minimize impacts to the forest canopy within shoreline jurisdiction. _____

d. Does the site plan show the area of "active use" within the shoreline buffer meeting the threshold of either 20 percent of the required buffer area or at least 15 linear feet of water frontage?
Yes No

If no, describe how the shoreline protection requirements of JCC 18.25.310(2)(c)(ii) are met. _____

d. Describe the potential impacts to shoreline functions and processes and corresponding mitigation to show NNL of shoreline functions (based on special reports and agency comments).

Any additional comments relevant to shoreline buffer requirements and NNL for this proposal: _____

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 2.

2. ***The proposed project will be located partially or entirely within a geologically hazardous area, a landslide hazard area buffer, or a setback for a landslide hazard area or a high-risk channel migration zone (Article V, Chapter 18.22 JCC).***

e. If the proposed project will be constructed within a geologically hazardous area, describe the existing conditions, such as dominant plant community (forest, shrub, herbaceous, unvegetated), percent vegetated, and native or non-native plant species present (dominant species). If proposal will not be constructed within a geologically hazardous area, fill in 'N/A'. _____

f. If the proposed project will be constructed within a landslide hazard area buffer or setback (35 feet for landslide hazard area or 5 feet for high-risk channel migration zone, unless indicated otherwise in the geotechnical report), describe the existing conditions, such as dominant plant community (forest, shrub, herbaceous, unvegetated), percent vegetated, and native or non-native plant species present (dominant species). _____

g. Provide the name of the professional who prepared the report and the date of the report. _____

h. Describe measures proposed to minimize impacts to shoreline functions based on development location, project design, construction methods, ongoing uses, and maintenance activities (JCC 18.25.270(2)). _____

i. Describe any impacts to shoreline stability and natural processes that may occur due to permitting of the proposed use or development. _____

Any additional comments relevant to geologically hazardous area requirements and NNL for this proposal: _____

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 3.

3. *The proposed project will be located partially or entirely within a fish and wildlife habitat conservation area (FWHCA), buffer, or setback (Article VI, Chapter 18.22 JCC).*

a. If the proposed project will be constructed within a FWHCA, describe the existing conditions, such as habitat type (e.g., sandy/gravelly intertidal zone, freshwater lake, mature forest), dominant plant community cover type (forest, shrub, herbaceous, unvegetated), percent vegetated, and dominant native or non-native plant species present. If proposal will not be constructed within a FWHCA, fill in 'N/A'.

b. If the proposed project will be constructed within a FWHCA buffer or setback, describe the existing conditions, such as dominant plant community (forest, shrub, herbaceous, unvegetated), percent vegetated, and native or non-native plant species present (dominant species). _____

j. Describe any existing structures or other modifications currently existing on the parcel. _____

k. Summarize the measures proposed by the applicant to minimize impacts to shoreline functions based on development location, project design, construction methods, ongoing uses, and maintenance activities (JCC 18.25.270(2)). _____

l. Describe any impacts to shoreline habitats and functions that may occur due to permitting of the proposed use or development. _____

Any additional comments relevant to FWHCA requirements and NNL for this proposal:

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 4.

4. *The proposed project will be located partially or entirely within a wetland or wetland buffer (Article VII, Chapter 18.22 JCC).*

a. If the proposed project will be constructed within a wetland, describe the existing conditions, such as dominant plant community (forest, shrub, herbaceous, unvegetated), percent vegetated, and dominant native or non-native plant species present. If the proposal is entirely outside of the wetland boundary, enter 'N/A'. _____

c. If the proposed project will be constructed within a wetland buffer, describe the existing conditions, such as dominant plant community (forest, shrub, herbaceous, unvegetated), percent vegetated, and dominant native or non-native plant species present. _____

m. Describe any existing structures or other modifications currently existing on the parcel. _____

n. Describe measures proposed to minimize impacts shoreline functions based on development location, project design, construction methods, ongoing uses, and maintenance activities (JCC 18.25.270(2)). _____

o. Describe any impacts to shoreline habitats and functions that may occur due to permitting of the proposed use or development. _____

Any additional comments relevant to wetland requirements and NNL for this proposal: _____

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 5.

5. *The proposed project will be located partially or entirely within a frequently flooded area (Chapter 15.15 JCC).*

p. Does the proposal comply with Chapter 15.15 JCC? Yes _____ No _____

If no, explain: _____

q. Has the applicant submitted a Habitat Assessment or documents submitted to the U.S. Army Corps of Engineers (such as Biological Evaluation or Biological Assessment)? Yes _____ No _____

If no, explain: _____

r. Describe the measures proposed by the applicant to minimize impacts to shoreline functions and habitats potentially used by federally-listed threatened and endangered species. _____

s. Identify the species for each 'Effects Determination':

No effect:

May affect, ~~not likely to adversely affect~~: _____

Likely to adversely affect: _____

For any 'Likely to Adversely Affect' determination, have the Federal Services been contacted?

Yes _____ No _____

If yes, who was contacted and when: _____

If no, explain: _____

t. Describe any impacts to shoreline functions and processes that may occur due to permitting of the proposed use or development. _____

Any additional comments relevant to frequently flooded area requirements and NNL for this proposal: _____

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 6.

6. *The proposal includes Beach Access Structures.*

a. Will any beach access structure be constructed on a feeder bluff? Yes _____ No _____

If yes, explain how proposal complies with JCC 18.25.340(2). _____

b. Will the beach access structure be a private or public use? Private _____ Public _____

If public, was the proposal reviewed against regulations in JCC 18.25.290 and was the access restriction in JCC 18.25.340(4)(h) added to the plat? Yes _____ No _____

If no, explain: _____

a. Will the proposed project meet the requirements of JCC 18.25.340(4)(e), (4)(f), and (4)(g)?

Yes No

If no, explain: _____

b. Was any information received during the course of the review indicating that the proposal should be prohibited (JCC 18.25.340(4)(j))? Yes _____ No _____

If yes, was the permit denied? Yes _____ No _____

If the permit was not denied, describe how the NNL requirement will be met. _____

c. Summarize information from the Special Reports submitted by the applicant that shows compliance with JCC 18.25.340(4)(k):

i (existing conditions) _____

ii (potential slope stability effects) _____

iii (shoreline processes) _____

iv (potential future stabilization) _____

CONTINUED 4 4

v (long-term slope stability measures) _____

f. Summarize measures to be implemented that are intended to result in NNL of shoreline functions.

d. Describe anything in the case file that indicates that bank stabilization or shore defense work would be needed in the future to protect this proposal. _____

Any additional comments relevant to beach access structures and NNL for this proposal:

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 7.

7. The proposal includes Boating Facilities.

a. The proposed project includes:

- public boat launches _____ (answer questions a.1, and b through f)
- private boat launches _____ (answer questions a.2, and b through f)
- non-residential docks, piers, and floats (answer questions a.3, and b through f)
- residential (accessory) docks, piers, floats, lifts, float plane moorage _____ (answer questions a.4, a.5, and b through f)
- marinas _____ (answer questions a.6, a.7, and b through f)
- mooring buoys _____ (answer questions b through f)

a.1 Has the applicant for a **public boat launch** submitted documentation to show that JCC 18.25.350(3)(a), (3)(b), and (3)(c) are met? Yes _____ No _____

If no, describe how proposal meets the NNL requirement. _____

a.2 Describe the documents submitted by the applicant for a **private boat launch** that show compliance with JCC 18.25.350(4)(b). _____

a.3 Has the applicant for a **non-residential dock, pier, and/or float** submitted documentation to show that JCC 18.25.350(5)(a), (5)(d), (5)(e), and (5)(f)? Yes _____ No _____

If no, describe how the proposal meets the NNL requirement. _____

a.4 Describe the documents submitted by the applicant for a **dock, pier, float, and/or lift accessory to residential development** that show compliance with JCC 18.25.350(6)(d). _____

a.5 Does the proposal for a **dock, pier, float, and/or lift accessory to residential development** include dredging to construct or maintain? Yes _____ No _____

If yes, describe how proposal complies with JCC 18.25.350(6)(n). _____

CONTINUED 4 4

a.6 Describe the information submitted by the applicant for a **marina** that shows compliance with JCC 18.25.350(7)(a). _____

a.7 Summarize the avoidance and minimization measures proposed by the applicant to construct a **marina**.

c. Is the proposal to construct an entirely new structure or an expansion of an existing structure?
Describe: _____

e. Will any existing man-made overwater structures be removed (and not replaced) as part of the proposal? Yes _____ No _____
If yes, how much (provided dimensions and square footage): _____

f. Identify all Special Reports prepared for this proposal: _____

g. Summarize measure to be implemented that are intended to result in NNL of shoreline functions (include mitigation measures from Special Reports). _____

h. Describe anything in the case file that indicates that bank stabilization or shore defense work would be needed in the future to protect this proposal.

Any additional comments relevant to boating facilities and NNL for this proposal:

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 8.

8. The proposal includes dredging or dredge material disposal in shoreline jurisdiction.

u. Is there any feasible alternative to the proposal? Yes _____ No _____

If yes, state how proposal complies with JCC 18.25.360(3)(b) and 18.25.360(4)(a). _____

v. If dredging is proposed, describe how the proposal minimizes the need for new dredging and/or maintenance dredging (JCC 18.25.360(3)(a)). _____

w. If dredging is proposed, identify the use or development in JCC 18.25.360(3)(c) that the proposal meets (proposal must meet use or development i. through x., specify which one is met): _____

x. If dredging is proposed for flood management purposes, identify which of the criteria in JCC 18.25.360(3)(d) applies: i (comp plan requirement) _____ ii (long-term ecological benefit) _____

y. If dredging is proposed, will the primary purpose of obtaining the materials be for use in landfill, upland construction, or beach nourishment? Yes _____ No _____

If yes, state how proposal complies with JCC 18.25.360(3)(f). _____

z. If disposal of dredged materials is proposed, indicate which reason meets JCC 18.25.360(4)(d):
i (restore) _____ ii (reestablish) _____ iii (nourish) _____ iv (remediate) _____

aa. If disposal of dredge materials is proposed, has the applicant met all three requirements of JCC 18.25.360(4)(e)? Yes _____ No _____

If no, describe how the NNL requirement is met. _____

bb. Summarize measure to be implemented that are intended to result in NNL of shoreline functions (include mitigation measures from Special Reports). _____

Any additional comments relevant to dredging or disposing of dredged materials and NNL for this proposal:

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 9.

9. *The proposal involves filling and/or excavation in shoreline jurisdiction.*

cc. Does the proposal meet all three requirements of JCC 18.25.370(3)(c)?

Yes _____ No _____

If no, describe how the NNL requirement is met. _____

dd. Describe the source of the fill materials and how the applicant is ensuring that contaminated materials will not be used (JCC 18.25.370(3)(d)). _____

ee. Does the proposal comply with Flood Damage Prevention regulations (Title 15.15 JCC, including the FEMA BiOp requirements)? Yes _____ No _____

If no, describe how the requirement in JCC 18.25.370(3)(f) is met. _____

ff. Has the applicant fully addressed all eight requirements in JCC 18.25.370(3)(g)?

Yes No

If no, describe how the NNL requirement is met. _____

gg. Summarize measure to be implemented that are intended to result in NNL of shoreline functions (include mitigation measures from Special Reports). _____

Any additional comments relevant to fill or excavation and NNL for this proposal:

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 10.

10. *The proposal includes Flood Control Structures in shoreline jurisdiction.*

a. Does the proposal meet all four requirements in JCC 18.25.380(3)(a)? Yes _____ No _____

If no, describe how the NNL requirement is met. _____

d. Does the proposal meet all six requirements in JCC 18.25.380(3)(b)?

Yes _____ No _____

If no, describe how the NNL requirement is met. _____

hh. Will the proposal be constructed in an estuary, embayment, point bar, channel bar, or in salmonid spawning areas (JCC 18.25.380(3)(d))? Yes _____ No _____

If yes, describe how the NNL requirement is met. _____

ii. Has any information from federal or state fish and wildlife agencies, tribes, or other qualified professionals been received indicating that fish and wildlife resources may be damaged or that high stages and velocities have the potential to occur as a result of the proposal? Yes _____ No _____

If yes, describe how the JCC 18.25.380(3)(e) requirement is met. _____

jj. List the technical reports that were submitted to comply with JCC 18.25.380(3)(k). _____

kk. Describe the mitigation measures to be implemented for meeting the NNL requirement. _____

Any additional comments relevant to flood control structures and NNL for this proposal: _____

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 11.

11. The proposal includes in-stream structures.

ll. Does the proposal include construction of a dam or associated power generating facilities?
Yes _____ No _____

If yes, describe how the proposal meets JCC 18.25.390(3)(a). _____

mm. Summarize information submitted by the applicant that shows how JCC 18.25.390(3)(c) is met.

nn. Describe the measures the applicant is proposing to address natural transport of bedload materials (JCC 18.25.390(3)(d)). _____

oo. Describe the measure the applicant is proposing to address fish migration (JCC 18.25.390(3)(e)). _____

pp. Name and firm for project engineer: _____

qq. Summarize how the applicant complies with JCC 18.25.390(3)(i): _____

i (site suitability analysis) _____

ii (engineered hydraulic analysis) _____

iii (biological reports) _____

iv (hydropower, if proposed) _____

v (public access/on-site recreation) _____

vi (mitigation) _____

vii (construction debris) _____

Any additional comments relevant to in-stream structures and NNL for this proposal: _____

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 12.

12. *The proposal includes Restoration.*

a. Summarize the restoration work proposed in the restoration plan. _____

d. Does the proposal comply with all other SMP policies and regulations? Yes _____ No _____
If no, describe how the proposal complies with JCC 18.25.400(3). _____

i. Is the proposed development or use part of an approved plan? Yes _____ No _____
If yes, name of document: _____

Any additional comments relevant to restoration and NNL for this proposal:

DETAILED NNL REVIEW

Complete the questions below if the answer is 'Yes' to Preliminary NNL Review Question 13.

13. *The proposal includes shoreline armoring and/or shoreline stabilization.*

a. If armoring is proposed, has the applicant submitted documentation (including environmental assessments) showing that non-structural alternatives are infeasible (JCC 18.25.410(10)(c) and 18.25.410(1)(b))? Yes _____ No _____

If no, explain how the policies and regulations of JCC 18.25.410 are met. _____

e. Indicate the person or firm that prepared biological inventory and resource document (JCC 18.25.410(10)(f)): _____

j. Is the proposal in-kind replacement of existing shoreline armoring (no expansion)?
Yes _____ (complete question below, then proceed to question f) No _____ (proceed to question d)

What information was submitted to show compliance with JCC 18.25.410(3)(a) and (3)(b)? _____

k. Is the proposal is for a subdivision or an existing lot without any structures?
Yes _____ (complete question below, then proceed to question f) No _____ (proceed to question e)

What information was submitted to show compliance with JCC 18.25.410(4)(a) through (4)(c)? _____

l. The proposal is for new or expanded shoreline armoring. Complete the three bulleted items below, then proceed to question f.

- Identify the waterbody, indicate the shore form type, and specify whether or not this shore form type is prohibited in JCC 18.25.410(5)(a): _____

- Based on permitting criteria specified in JCC 18.25.410(5)(b), check all that apply (the proposal must meet one or more of the following):
i _____ ii _____ iii _____ iv _____

CONTINUED 4 4

- Summarize how the criteria in JCC 18.25.410(5)(c) are met:
 - i (erosion) _____
 - ii (alternatives) _____
 - iii (flood damage) _____
 - iv (mitigation) _____
 - v (alternatives evaluated) _____

g. Has the proposal been designed to meet U.S. Army Corps of Engineers requirements and/or Washington State Department of Fish and Wildlife Aquatic Habitat Guidelines? Yes _____ No _____

If no, indicate how JCC 18.25.410(6)(a) requirements are met: _____

m. Summarize the measures the applicant will be implementing to prevent degradation of water quality. _____

n. Are gabions proposed? Yes _____ No _____

If yes, indicate how the NNL requirement in JCC 18.25.410(6)(g) will be met. _____

o. Are bulkheads proposed?
Yes _____ No _____

If yes, describe the bank toe protection proposed (JCC 18.25.410(7)(b)(i)). _____

p. If a revetment is proposed, will it be located in a wetland, point or channel bar, or in a salmonid spawning areas?

Yes _____ No _____ Revetments are not proposed _____

If yes, describe how the requirements of JCC 18.25.410(8)(b) are met. _____

CONTINUED 4 4

k. If a breakwater, jetty, or seawall is proposed, indicate which of the three criteria from JCC 18.25.410(9)(b) applies:

i _____ ii _____ iii _____ Breakwaters, jetties, and seawalls are not proposed _____

I. Summarize the information submitted by the applicant to address the following requirements in JCC 18.25.410(10), as it pertains to NNL:

c (alternative and environmental impacts) _____

d (revegetation) _____

e (hydraulic analysis) _____

f (biologist report) _____

h (materials disposal) _____

Any additional comments relevant to shoreline armoring/stabilization and NNL for this proposal:

SUMMARY

Applicant:

I agree with the responses to the completed sections of this 'No Net Loss' form.

Signature _____ Date: _____

County Reviewer (signs after applicant has returned form with his/her signature):

Based on available information, the project is not expected to result in a net loss of shoreline ecological functions. Yes _____ No _____

Signature _____ Date: _____

APPENDIX 7.B

**THURSTON COUNTY SMP-HRCD PROJECT
RECOMMENDATIONS FOR APPLYING THE HRCD DATA SET TO TRACK LAND COVER CHANGE**

Thurston SMP-HRCD Project

Recommendations for Applying the HRCD Data Set to Track Land Cover Change

Background

Land cover is a vital element to environmental management in both science and land-use planning. Land cover, which is what is covering the land (e.g., forest, impervious surface, grassland), is distinct from land use, which is how the land is used (e.g., residential, forestry, row crops). Landscape ecologists often use land cover as a coarse filter evaluation of habitat quantity, quality, and configuration.

Most current land cover products are derived from Landsat satellite data that lack resolution to capture land cover elements smaller than ~2 hectares. Human dominated landscapes, like those of the Puget Sound region, change through many small events over time that are not effectively observed by Landsat. Standard 30-meter resolution Landsat data is useful for large extents of homogenous landscapes. With more than 30 years of data available, Landsat data still remains an important source of land cover information, yet its low resolution limits applicability to heterogeneous landscapes.

Overview of the HRCD Data

Funded by multiple grants from EPA (2012, 2013), WA Dept. of Ecology (2010), and the Salmon Recovery Funding Board (2009), the HRCD dataset is based on a process that compares high-resolution (1 m) National Agriculture Imagery Program (NAIP) aerial photography between two time periods. NAIP imagery was first available for Washington statewide in 2006 serving as the baseline for the dataset. Once the next set of imagery was available in 2009, comparisons between the two could then be made. The procedure, developed by Dr. Ken Pierce (WDFW), of generating the land cover changes has two primary phases: a set of automated processes meant to assign the segmented landscape with a prescribed chance of change and a manual process that confirms the change event and assigns attributes.

What the computer does

The automated phase of generating the HRCD data is complex and it is beyond the scope of this report to describe the process in detail. To summarize, through a process known as segmentation, the computer divides the georeferenced imagery into polygons by homogenous pixels. The computer takes these segmented polygons and assesses the probability that the images are different (i.e. the area experienced a land cover change event). The polygons with a probability of change higher than the prescribed minimum probability threshold for change are then sent to an analyst to verify if the area has indeed changed.

What the WDFW Staff does

The segmented polygons that are identified as likely to have changed are checked by an analyst to confirm that the area has indeed changed. This is done by visually inspecting each polygon through a custom built viewer that loads the potential change event to compare with its baseline image. The

analyst also assigns attributes to each confirmed change event including the amount of the change within the polygon (0, 25, 50, 75, or 100%), the initial land class, and likely change agent (Table 1).

Table 1. List of initial land classes (left) and change agents (right) in the HRCD dataset.

Initial Land Class	Change Agents
Built Impervious (>90%)	Development
Bare Ground (>90%)	Forestry
Mixed built (<25% or >25% tree cover)	Tree Removal
Mixed Non-built (including natural rock)	Stream/Hydrologic change
Tree/Shrub (>90%)	Redevelopment
Grass/Herb (>90%)	Retention Pond
	Other – Natural
	Other – Non-Natural

What the data do

The completed HRCD dataset quantifies land cover change through time in Puget Sound. Specifically, the HRCD quantifies total land cover change, including canopy loss, impervious surface increase and semi-pervious increase. Currently, the data does not quantify tree growth or identify restoration events. The extent is the entire Puget Sound Watershed separated by Watershed Resource Inventory Areas (WRIAs) 1 through 19 in Washington State. There are currently two iterations of the HRCD data available for distribution, 2006 to 2009 and 2009 to 2011 with 2011 to 2013 available late 2015. The data can be readily manipulated in ArcGIS and intersected with other spatial data.

HRCD Limitations

HRCD error assessment

There are two types of error associated with HRCD, commission error (locations mapped as change that did not actually change) and omission error (locations that actually changed but not mapped as change). Commission error is virtually eliminated by the analyst visually inspecting each location predicted to be change based on the prescribed minimum probability threshold in the computer model. Omission error rates are estimated by sampling and manually interpreting a large number of polygons below the minimum probability threshold. Lowering the minimum probability threshold will push more error into the commission side and increase accuracy. Lowering the probability threshold however exponentially increases the number of polygons reviewed by analysts and therefore has a point of diminishing returns.

For a more detailed look at the HRCD generation process, definitions for land class, change agents, change types, error assessment:

Final Report on High Resolution Change Detection Project (2011):

<http://wdfw.wa.gov/publications/01454/wdfw01454.pdf>

Quality Assurance Project Plan: Puget Sound High Resolution Change Detection (2013):

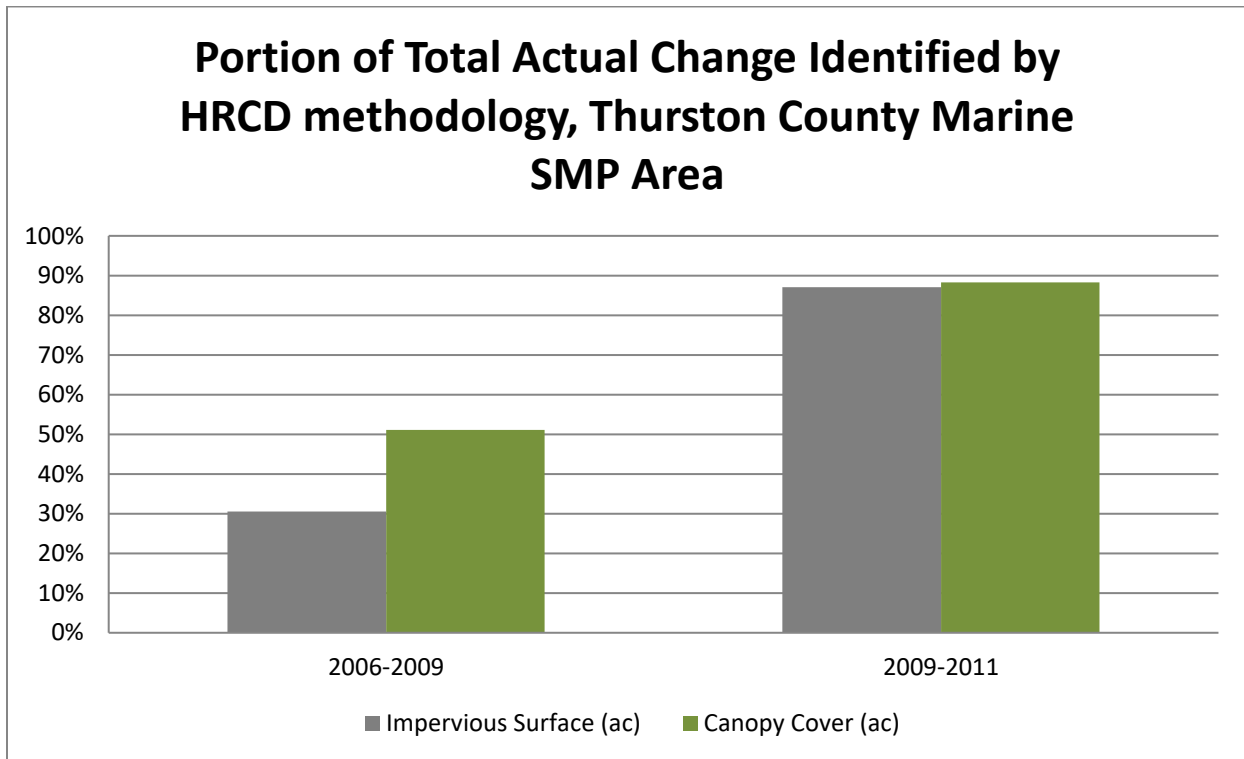
<http://www.ecy.wa.gov/programs/eap/qa/docs/NEPQAPP/SampleQAPPHighDefChangeAnalysis.pdf>

Accuracy Optimization for High Resolution Object-Based Change Detection: An Example Mapping Regional Urbanization with 1-m Aerial Imagery (2015):

<http://www.mdpi.com/2072-4292/7/10/12654>

HRCO omission rate case: Thurston County Marine SMP

Independent of the HRCO Quality Assurance Project Plan that estimated omission rates, the Thurston County marine Shoreline Master Program area was manually assessed for omissions from the HRCO data set. The results showed a significant improvement between the 2006 to 2009 and 2009 to 2011 iterations in omission rates.



In the Thurston marine SMP area, the HRCO captured approximately 51% of the canopy loss and 31% of new impervious surface between 2006 and 2009. However, the HRCO captured approximately 88% of the canopy loss and 87% of the new impervious surface between 2009 and 2011. Manual assessment of the latest iteration, 2011 to 2013, is currently underway.

Generally, the HRCO data set captures larger events (greater than 1/5th acre) with more reliability than smaller events. Small land cover changes, such as house additions, driveways, individual tree removals, and other changes less than 1/5th of an acre, are routinely missed, especially as change polygons smaller than 2000 ft² (about a 1/20th acre) are removed from analysis prior to modeling. Also, the HRCO is not designed to capture some other change events such as demolitions, tree or greenspace restorations, over-water structures (e.g. docks), and vertical structures (i.e. bulkheads).

Even though the HRCD does not track restoration events or tree growth, interested users can submit spatial data for known restoration events or other areas of interest to WDFW via the HRCD website (available late 2015). These locations will be monitored for change with each new iteration of the NAIP photography. A corresponding report will be generated summarizing the land cover change, including any activity observed outside of the regular HRCD attributes such as canopy gain.

How to Get the HRCD Data Set

There are currently two primary means of data distribution:

- 1) ArcGIS Online Map Service (<http://arcg.is/1KltjEU>) allows users to view and filter the HRCD dataset in a web browser.
- 2) A shared folder with invitations manually sent by WDFW staff upon request. This folder contains the most current HRCD editions ready for download via a shapefile.

For more information on this report, the HRCD dataset, applications, local partner full-reports, or to receive the data itself, please contact:

Keith Folkerts
Priority Habitat and Species Land Use Policy Lead
Habitat Program
Washington Department of Fish and Wildlife
600 Capital Way N
Olympia, WA 98501
Phone: (360) 902-2390
Email: keith.folkerts@dfw.wa.gov

Simple HRCD Application Method

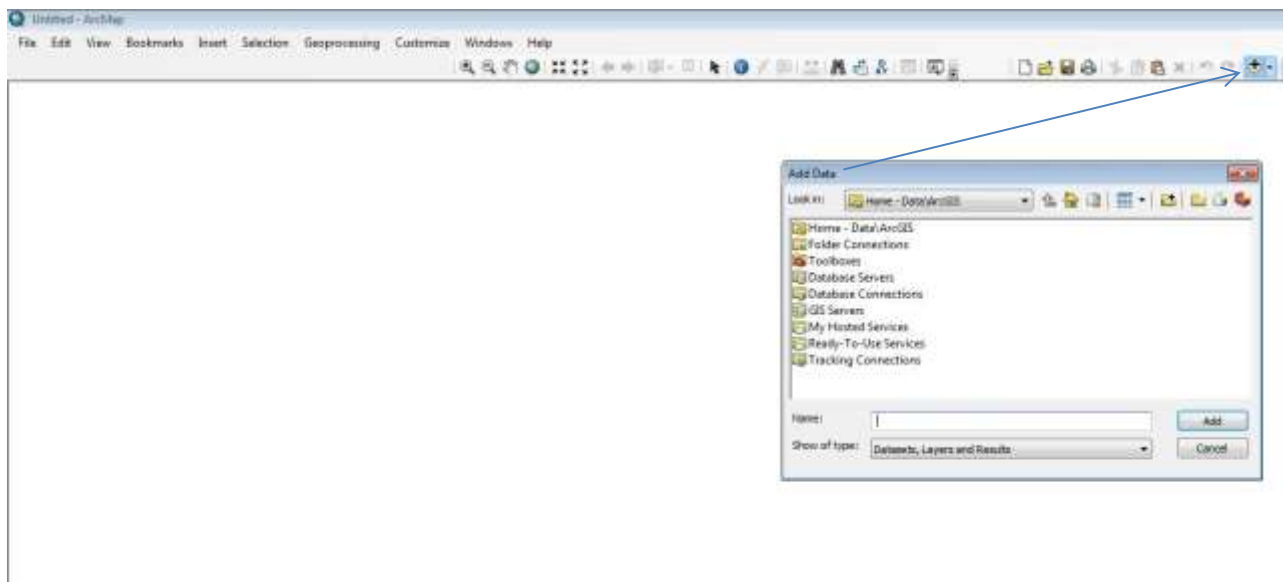
While there are many ways to analyze the HRCD dataset with other spatial data, one of the more simple methods is an intersection in ArcGIS then exporting to a spreadsheet program like Excel. The following method uses ArcGIS 10.2.2 and Microsoft Excel.

Steps:

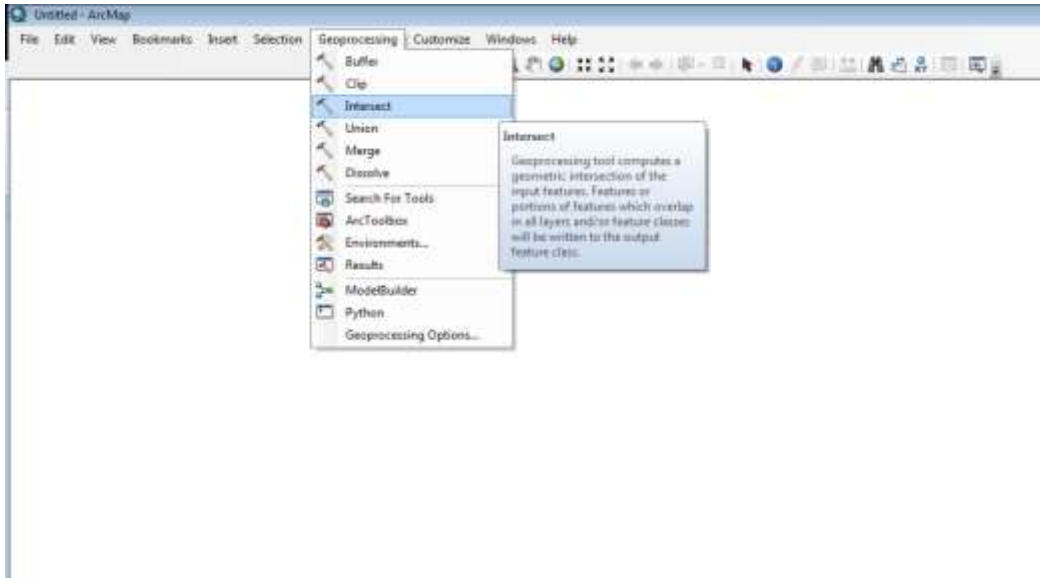
1. Request access to the WDFW HRCD folder by contacting WDFW Staff, then download HRCD data from the folder.

In ArcGIS:

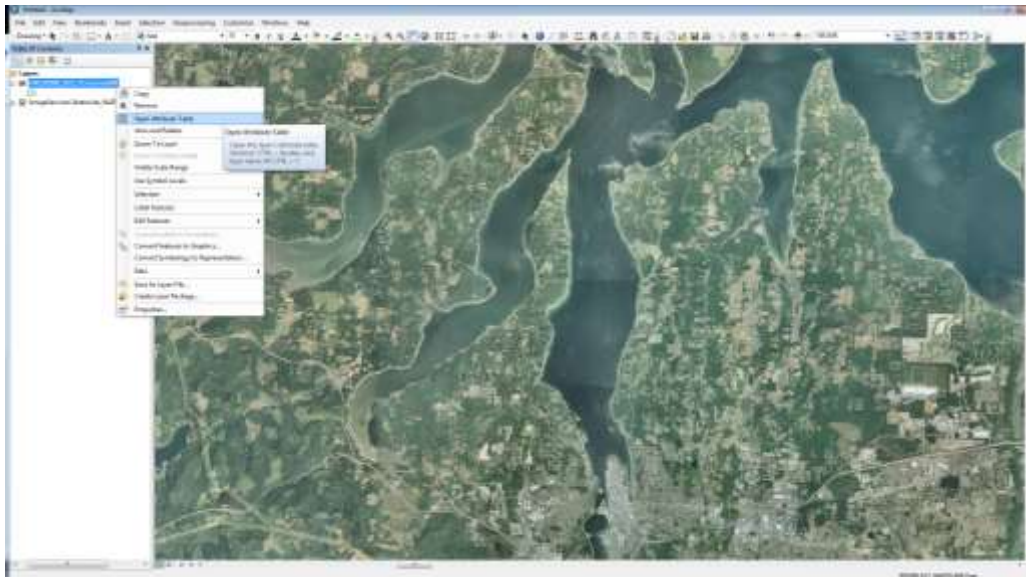
2. Add HRCD data and other relevant spatial data using the “Add Data” button on the “Standard” tool bar (also available on the File drop-down menu);



3. Under the “Geoprocessing” drop-down, select “Intersect”;



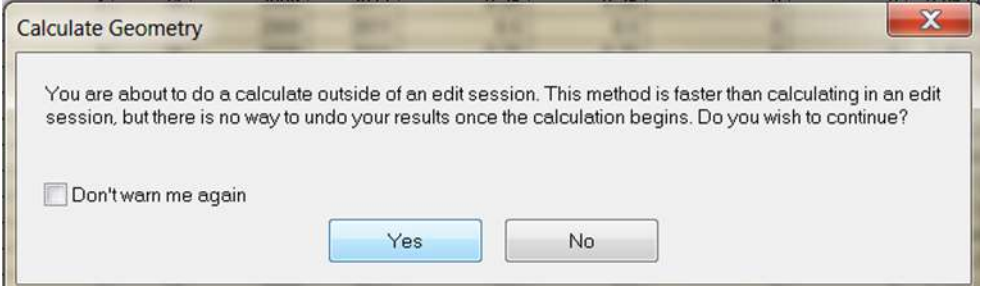
4. In “Input Features” select HRCD and other spatial data. Select where to store the new file in “Output Feature Class”. Select “OK”.
5. Because the Intersection function will create HRCD change event polygons spliced by the spatial data used, new area of the HRCD polygons need to be calculated.
 - a. Right-click on the HRCD layer in the table of contents and open the Attribute Table.



- b. Right-click the “Area (acres)” button on the attribute labels, and select “Calculate Geometry”. Select “Acres” in the dropdown list. Select “Ok”.

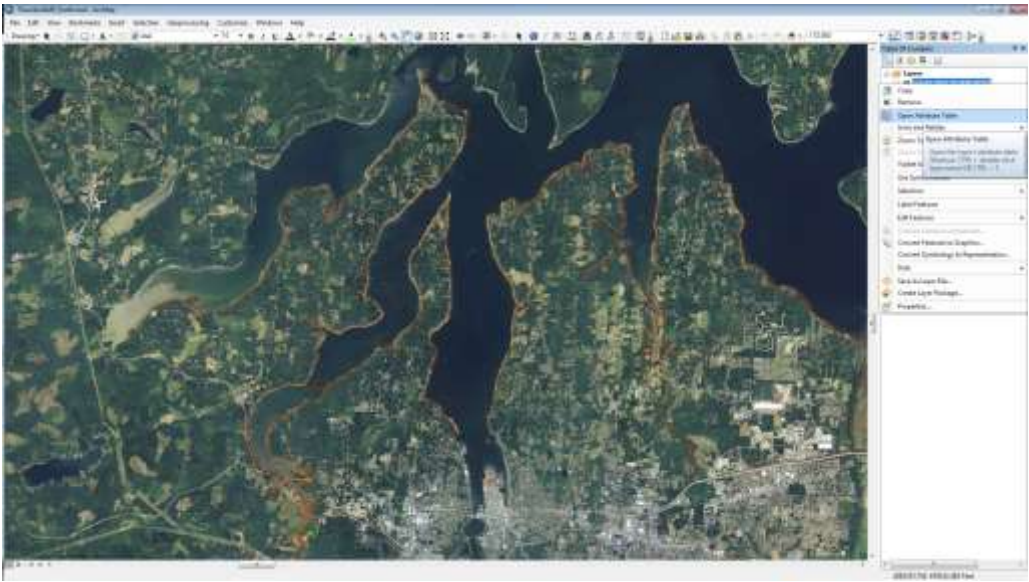
Percentage Increase (percent)	Year-previous Increase (percent)	Start Year	End Year	Area (square)	Area (acres)	Area (square miles)	Area (hectares)	Area (square kilometers)	Perimeter (feet)	Perimeter (meters)	Perimeter (kilometers)	Perimeter (miles)	Area (square feet)	Area (square meters)	Area (square kilometers)	Area (square miles)	Perimeter (meters)	Perimeter (feet)	Perimeter (kilometers)	Perimeter (miles)	
0	0	2009	2009	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.75	0	2009	2009	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.75	0	2009	2009	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148
0.25	0	2009	2009	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.00000	0.22148	0.22148	0.00000	0.22148

a. If you get a dialogue box saying you are about to edit outside of an edit session, click yes to continue.

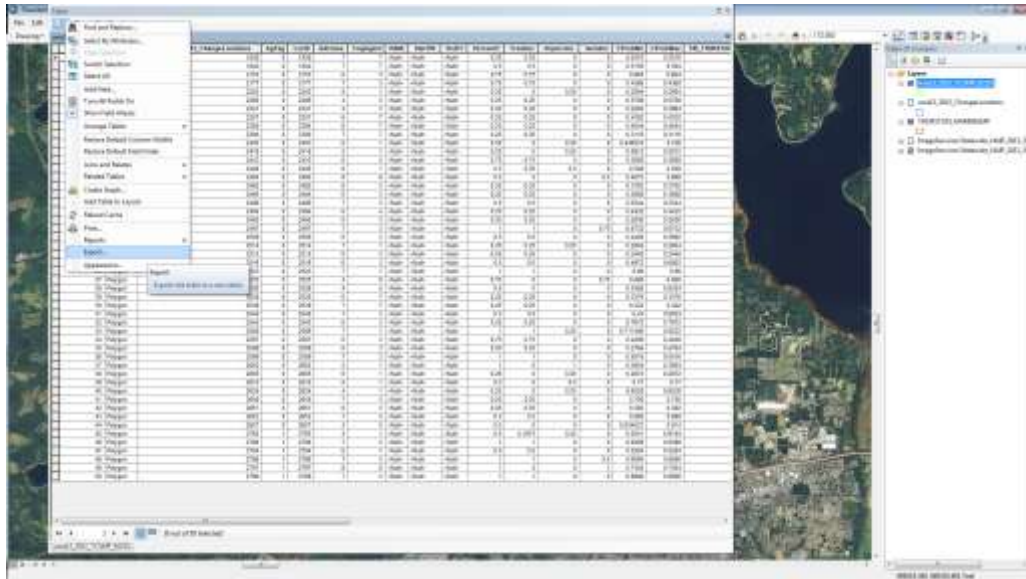


Export the data to Excel:

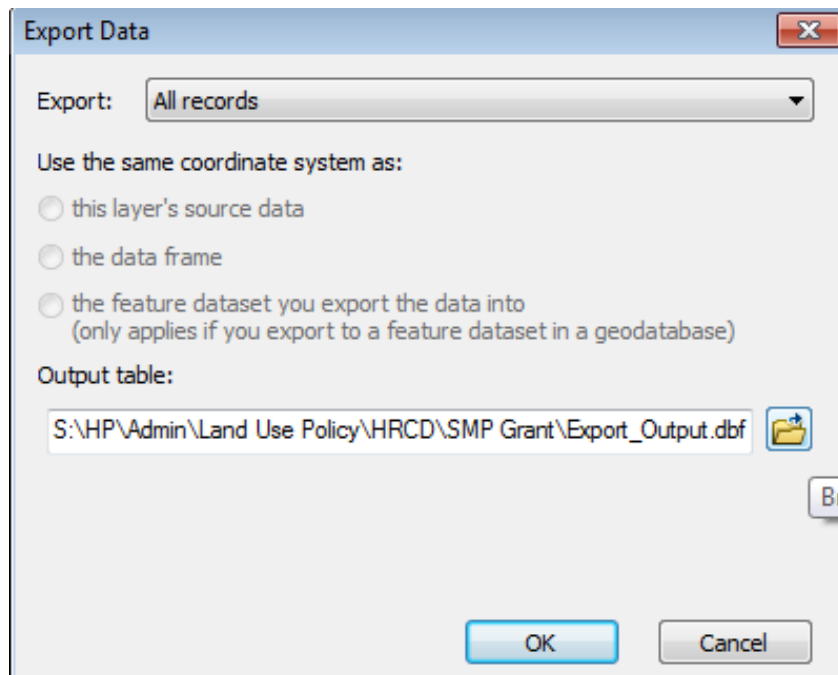
6. Right-click the newly created layer in the “Table of Contents” window and select “Open Attribute Table”

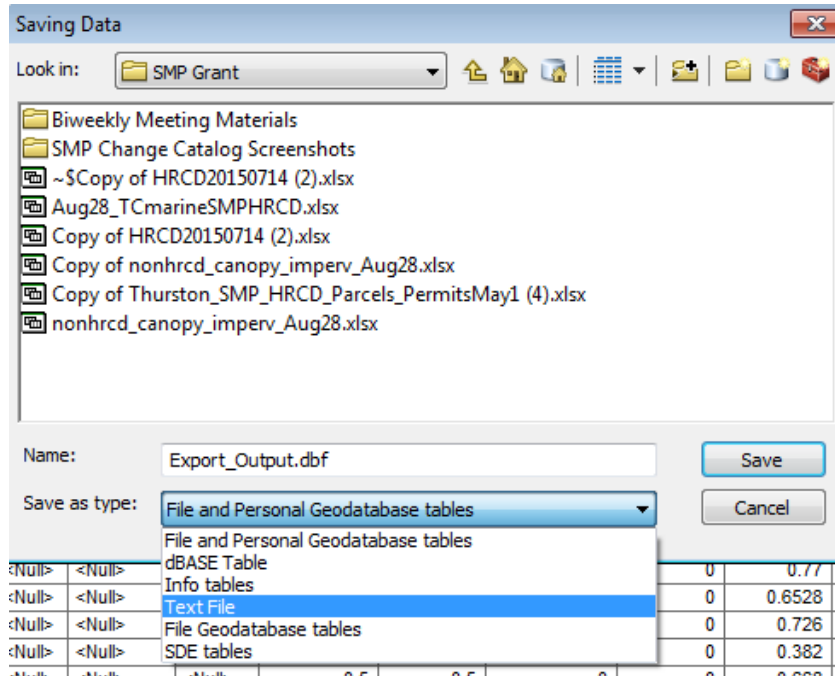


7. On the “Table Options” button, select “Export”;



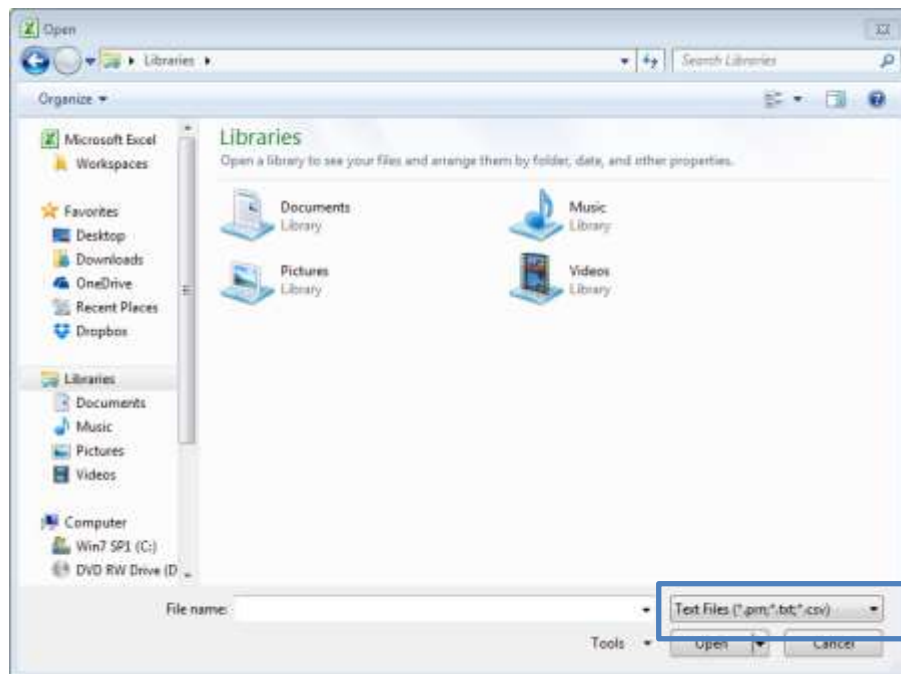
8. Select the browse button next to the “Output table” box. Select where to store the exported data and change the file type to “Text File”.





In Excel:

9. Open the file (be sure to select either “All File types” or “Text File types” in the dropdown menu adjacent to file name).



10. On Step 1 of 3 in the Text Import Wizard, select "Next".

Text Import Wizard - Step 1 of 3

The Text Wizard has determined that your data is Delimited.
If this is correct, choose Next, or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

Delimited - Characters such as commas or tabs separate each field.
 Fixed width - Fields are aligned in columns with spaces between each field.

Start import at row: 1 File origin: 437 : OEM United States

Preview of file C:\data\ArcGIS\Thurston SMP\Thurston_SMP_HRCD_0611.txt.

	OBJECTID	FID_HRCD_0609_0911_Merge	AAClass	CngAgent	WRIA	StartYR	EndYr	Perce
1	1	8325	7	7	14	2009	2011	0.2500000000000000
2	2	8467	7	2	14	2009	2011	0.7000000000000000
3	3	8516	5	2	14	2009	2011	0.2500000000000000
4	4	8517	6	3	14	2009	2011	0.2500000000000000

Buttons: Cancel, < Back, Next >, Finish

11. On Step 2 of 3 in the Text Import Wizard, check the "Comma" box, select Finish

Text Import Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

Tab
 Semicolon
 Comma
 Space
 Other: []

Treat consecutive delimiters as one

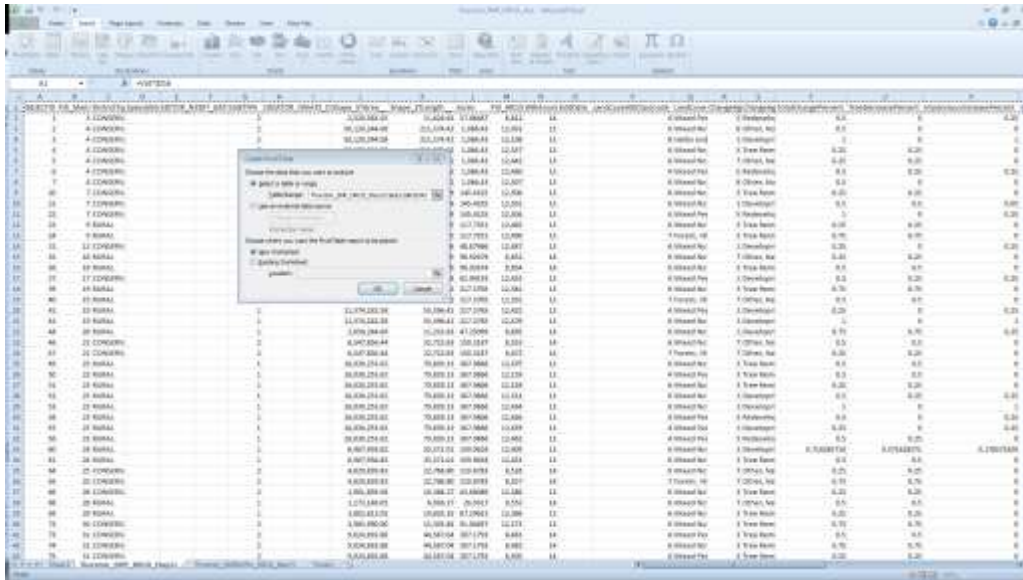
Text qualifier: ["]

Data preview

	OBJECTID	FID_HRCD_0609_0911_Merge	AAClass	CngAgent	WRIA	StartYR	EndYr	Perce
1	1	8325	7	7	14	2009	2011	0.2500000000000000
2	2	8467	7	2	14	2009	2011	0.7000000000000000
3	3	8516	5	2	14	2009	2011	0.2500000000000000
4	4	8517	6	3	14	2009	2011	0.2500000000000000

Buttons: Cancel, < Back, Next >, Finish

13. Under the Insert ribbon, select Pivot Table and select the data range of interest for analysis.



14. Sort and filter the data as needed.

By using this simple method of intersecting the HRCD, each change event is combined with the attributes of the other spatial data used in the intersection. In Excel, the pivot table function is extremely useful for filtering and sorting the intersected HRCD data by the attributes found in the other spatial data used in the analysis

Using HRCD for Program Implementation

HRCD data should prove useful for counties and cities implementing critical area programs adopted under the Growth Management Act (GMA) and Shoreline Master Programs (SMPs) adopted under the Shoreline Management Act (SMA).

Intersecting the HRCD with the appropriate spatial data can show rates of land cover change. The data can give insight into the effectiveness of environmental policies and regulations, their implementation, and/or enforcement practices. For example, jurisdictions can intersect the HRCD with SMP areas and sort by environmental designation to determine if the observed rates of change are acceptable as per their land use management goals.

One example is to cross-reference the HRCD with critical area or shoreline layers together with relevant land use permits to understand where permitted and non-permitted activities took place. In the past, most local governments relied solely on complaints to determine the extent of non-permitted activity. The HRCD has potential to provide a neutral and objective base of information to inform evaluations of program compliance.

The data could also be used to help prepare forward-looking projections of change. For example, rates of change calculated for given periods in the past can be projected into the future to inform cumulative impact assessments.

The HRCD data may also be useful for regional or watershed entities to compare rates of change between different areas subject to different regulatory regimes or different rates of growth. For example, jurisdictions can gain insight into how efficiently they manage growth by measuring new impervious surface area per new person over a specified time.

It is important to note that while the HRCD quantifies canopy loss, the dataset does not record tree growth and restoration and thus does not provide information on mitigation or restoration improvements.

Spatial Data Resources

Some resources with downloadable spatial data:

- Public Lands Database (USGS)
 - o Official inventory of protected open space in the United States. With over 715 million acres in thousands of holdings, the spatial data in PAD-US include public lands held in trust by national, State, and some local governments, and by some nonprofit conservation organizations.
 - o <http://gapanalysis.usgs.gov/padus/data/download/>
- National Wetland Inventory (USFWS)
 - o <http://www.fws.gov/wetlands/NWI/Overview.html>
- WA Department of Ecology
 - o Ecology maintains the spatial datasets described here in order to better describe the diverse natural and cultural environment that we live and work in.

- <http://www.ecy.wa.gov/services/gis/data/data.htm>

APPENDIX 7.C

KIRKLAND LANDOWNER TEMPLATES

The City of Kirkland has two landowner agreements that it records on projects along the shoreline. The “Perpetual Maintenance Agreement Native Shoreline Vegetation” is a standard vegetation maintenance agreement completed with all new single-family development, major remodels, or Substantial Development Permit along the shoreline. The “5-Year Maintenance Agreement for Shoreline Structural Stabilization” is for those few projects that have installed new soft shoreline stabilization.



PERPETUAL MAINTENANCE AGREEMENT NATIVE SHORELINE VEGETATION

Parcel No:

Project Name:

Project Address:

This agreement is entered into between each of the undersigned owners of real property, and the City of Kirkland, in consideration of approval by the City of a permit under City of Kirkland File/Permit No. _____ for the hereinafter described real property in Kirkland, King County, Washington.

Each undersigned owner hereby agrees to regularly maintain the required native shoreline vegetation as illustrated on the landscape plan contained in Exhibit A, as approved by the City, on the real property described below in Exhibit B, owned by such owner, pursuant to Chapter 83 of the Kirkland Zoning Code. Vegetation that dies or is removed must be replaced in kind or with similar plants contained on the City's Native Plant List or other native species approved by the City Planning Official.

For the application of pesticides, herbicides and fertilizers, each undersigned owner hereby agrees to follow the measures in Section 83.480 of the Kirkland Zoning Code, including the use of best management practices (BMPs) outlined in the BMPs for Landscaping and Lawn/Vegetation Management Section of the 2005 Stormwater Management Manual of Western Washington to prevent contamination of surface and ground water and/or soils, and adverse effects on shoreline ecological functions and values.

Each of the undersigned agree to defend, pay, and save harmless the City of Kirkland, its officers, agents, and employees from any and all claims of every nature whatsoever, real or imaginary, which may be made against the City, its officers, agents, or employees for any damage to property or injury to any person arising out of the maintenance of said native shoreline vegetation on said owner's property or out of the actions of the undersigned in carrying out the responsibilities under this agreement, excepting therefrom only such claims as may arise solely out of the negligence of the City of Kirkland, its officers, agents, or employees.

This Agreement shall be binding upon the heirs, successors and assigns of each of the undersigned and shall run with the land. This Agreement shall, at the expense of the undersigned owners, be recorded by the City of Kirkland with the King County Department of Elections and Records.

The approved shoreline vegetation plan on the subject property of this Agreement is described as follows:

See Exhibit A

The real property owned by the undersigned and the subject property of this Agreement is situated in Kirkland, King County, Washington and described as follows:

See Exhibit B

DATED at Kirkland, Washington, this _____ day of _____, _____.

(Sign in blue ink)

(Individuals Only)

OWNER(S) OF REAL PROPERTY (INCLUDING SPOUSE)

(Individuals Only)

STATE OF WASHINGTON)

) SS.

County of King)

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and

_____ to me known to be the individual(s) described herein and who executed the Perpetual Maintenance Agreement Native Shoreline Vegetation and acknowledged that _____ signed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name

Notary Public in and for the State of Washington,
Residing at: _____

My commission expires: _____

(Partnerships Only)

OWNER(S) OF REAL PROPERTY

(Name of Partnership or Joint Venture)

By General Partner

By General Partner

By General Partner

(Partnerships Only)

STATE OF WASHINGTON)

) SS.

County of King)

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____

_____ to me, known to be general partners of _____, the partnership that executed the Perpetual Maintenance Agreement Native Shoreline Vegetation and acknowledged the said instrument to be the free and voluntary act and deed of each personally and of said partnership, for the uses and purposes therein set forth, and on oath stated that they were authorized to sign said instrument.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____

(Corporations Only)

OWNER(S) OF REAL PROPERTY

(Name of Corporation)

By President

By Secretary

(Corporations Only)

STATE OF WASHINGTON)
County of King) SS.

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____

_____ to me, known to be the President and Secretary, respectively, of _____, the corporation that executed the Perpetual Maintenance Agreement Native Shoreline Vegetation and acknowledged the said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth, and on oath stated that they were authorized to sign said instrument and that the seal affixed is the corporate seal of said corporation.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____



5-YEAR MAINTENANCE AGREEMENT FOR SHORELINE STRUCTURAL STABILIZATION

Parcel No:

Project Name:

Project Address:

This agreement is entered into between each of the undersigned owners of real property, and the City of Kirkland, in consideration of approval by the City of a permit under City of Kirkland File/Permit No. _____ for the hereinafter described real property in Kirkland, King County, Washington.

Each undersigned owner jointly and severally hereby agrees to maintain the shoreline structural stabilization measures installed on the real property described below, in accordance to the final approved shoreline stabilization plan contained in the City's official file, pursuant to Chapter 83 of the Kirkland Zoning Code ("KZC"), for a period of five (5) years after the date of final occupancy of the site or final inspection of the shoreline stabilization measure, which is [enter date]. Thereafter, maintenance will continue pursuant to Chapter 83 KZC requirements.

Each of the undersigned agree to defend, pay, and save harmless the City of Kirkland, its officers, agents, and employees from any and all claims of every nature whatsoever, real or imaginary, which may be made against the City, its officers, agents, or employees for any damage to property or injury to any person arising out of the maintenance of said shoreline structural stabilization measure on said owner's property or out of the actions of the undersigned in carrying out the responsibilities under this agreement, excepting therefrom only such claims as may arise solely out of the negligence of the City of Kirkland, its officers, agents, or employees.

This Agreement shall be binding upon the heirs, successors and assigns of each of the undersigned and shall run with the land. This Agreement shall, at the expense of the undersigned owners, be recorded by the City of Kirkland with the King County Department of Elections and Records.

The real property owned by the undersigned and the subject property of this Agreement is situated in Kirkland, King County, Washington and described as follows:

Exhibit A

DATED at Kirkland, Washington, this _____ day of _____,
_____.

(Sign in blue ink)

(Individuals Only)

OWNER(S) OF REAL PROPERTY (INCLUDING SPOUSE)

(Individuals Only)

STATE OF WASHINGTON)

) SS.

County of King)

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____

_____ to me known to be the individual(s) described herein and who executed the 5-Year Maintenance Agreement For Shoreline Structural Stabilization and acknowledged that _____ signed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____

(Partnerships Only)

OWNER(S) OF REAL PROPERTY

(Name of Partnership or Joint Venture)

By General Partner

By General Partner

By General Partner

(Partnerships Only)

STATE OF WASHINGTON)
) SS.
County of King)

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____ to me, known to be general partners of _____, the partnership that executed the 5-Year Maintenance Agreement For Shoreline Structural Stabilization and acknowledged the said instrument to be the free and voluntary act and deed of each personally and of said partnership, for the uses and purposes therein set forth, and on oath stated that they were authorized to sign said instrument.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____

(Corporations Only)

OWNER(S) OF REAL PROPERTY

(Name of Corporation)

By President

By Secretary

(Corporations Only)

STATE OF WASHINGTON }
County of King } SS.

On this _____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____

_____ to me, known to be the President and Secretary, respectively, of _____, the corporation that executed the 5-Year Maintenance Agreement For Shoreline Structural Stabilization and acknowledged the said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth, and on oath stated that they were authorized to sign said instrument and that the seal affixed is the corporate seal of said corporation.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____