

**CITY OF MUKILTEO
MUKILTEO, WASHINGTON**

ORDINANCE NO. [REDACTED]

**AN ORDINANCE OF THE CITY OF MUKILTEO, WASHINGTON,
UPDATING CRITICAL AREA REGULATIONS; PROVIDING FOR
SEVERABILITY AND ESTABLISHING AN EFFECTIVE DATE.**

WHEREAS, critical areas provide a variety of valuable and beneficial biological and physical functions that benefit Mukilteo and its residents such as water quality protection, fish and wildlife habitat, flood storage and conveyance, erosion control, hazard reduction, aesthetic values, and recreation opportunities; and

WHEREAS, the unwise development of critical areas may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, put species at risk of extinction, subject persons and property to unsafe conditions, and/or affect the perceived quality of life in Mukilteo; and

WHEREAS, the City of Mukilteo is required to plan under the Growth Management Act (GMA), RCW 36.70A; and

WHEREAS, RCW 36.70A.130 requires the City of Mukilteo to adopt and periodically review regulations for designating and protecting critical areas; and

WHEREAS, the City of Mukilteo contains the following critical areas defined in the Growth Management Act: wetlands, fish and wildlife conservation areas, frequently flooded areas, and geologically hazardous areas; and

WHEREAS, the GMA requires the prevention of further harm to critical areas, but not the enhancement of critical areas that were previously damaged; and

WHEREAS, critical area regulations must give special consideration to the conservation and protection of anadromous fish and use best available science to protect critical area functions and values; and

WHEREAS, the City relied on best available science guidance summarized in Appendix 1 as well as comments and expertise shared in response to the city's early consultation with review agencies (e.g., DNR, WDFW, DOE); and

WHEREAS, on November 4, 2025, the City transmitted our proposed amendments to the Department of Commerce for 60-day review; and

WHEREAS, on November 6, 2025, the City issued a SEPA Determination of Non-Significance for proposed amendments to the city's critical area development regulations that was not appealed; and

WHEREAS, the City of Mukilteo Planning Commission conducted a review of the proposed regulations on November 20, 2025, and held a public hearing on January 15, 2026; and

WHEREAS, the City of Mukilteo City Council held a work session to review the proposed regulations on **DATE** and held a public hearing on the amendments to the city's critical area development regulations on **DATE**; and

WHEREAS, the City of Mukilteo published notice of the SEPA determination and public hearings in the Everett Herald, distributed information via email to known interested parties, posted at city posting sites, and uploaded documents to the city's website.

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF MUKILTEO, WASHINGTON, HEREBY ORDAINS AS FOLLOWS:

Section 1. Repeal MMC Chapter 3.120. Repeal *MMC Chapter 3.120, CAMP Fund*.

Section 2. Repeal MMC Chapter 17.52E. Repeal *MMC Chapter 17.52E, Shoreline Regulations* which is currently held in reserve but covered in Title 17B.

Section 3. Repeal and Replace MMC Chapter 15.12. Repeal and replace *MMC Chapter 15.12, Flood Damage Prevention* as shown in Exhibit A.

Section 4. Amend MMC 17.08.020. Amend *MMC 17.08.020, Definitions* as shown in Exhibit B.

Section 5. Amend MMC 17.13.020D. Amend *MMC 17.13.020D, Permit Types* as shown in Exhibit C.

Section 6. Repeal and Replace MMC Chapter 17.52. Repeal and replace *MMC Chapter 17.52, Critical Areas Regulations* as shown in Exhibit D.

Section 7. Repeal and Replace MMC Chapter 17.52A. Repeal and replace *MMC Chapter 17.52A, Geologic Sensitive Area Regulations* as shown in Exhibit E.

Section 8. Repeal and Replace MMC Chapter 17.52B. Repeal and replace *MMC Chapter 17.52B, Wetland Regulations* as shown in Exhibit F.

Section 9. Repeal and Replace MMC Chapter 17.52C. Repeal and replace *MMC Chapter 17.52C, Fish and Wildlife Habitat Conservation Areas (Outside Shoreline Jurisdiction)* as shown in Exhibit G.

Section 10. Repeal and Replace MMC Chapter 17.52D. Repeal and replace *MMC Chapter 17.52D, Flood Hazard Areas* as shown in Exhibit H.

Section 11. Severability. If any section, subsection, clause, sentence, or phrase of this ordinance should be held invalid or unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance.

Section 12. Authority to Make Necessary Corrections. The City Clerk and the codifiers of this Ordinance are authorized to make necessary corrections to this Ordinance including, but not limited to, the correction of scrivener's clerical errors, references, ordinance numbering, section/subsection numbers and any references thereto.

Section 13. Effective Date. The ordinance shall take effect and be in full force five (5) days after publication of the attached summary which is hereby approved.

PASSED by the City Council and APPROVED by the Mayor this ____ day of _____, 2026.

APPROVED:

JOE MARINE, MAYOR

ATTEST/AUTHENTICATED:

ASEA SANDINE, CITY CLERK

APPROVED AS TO FORM:
OFFICE OF THE CITY ATTORNEY

HEIDI L. GREENWOOD

FILED WITH THE CITY CLERK:
PASSED BY THE CITY COUNCIL:
PUBLISHED:
EFFECTIVE DATE:
ORDINANCE NO. _____

SUMMARY OF ORDINANCE NO. _____
of the City of Mukilteo, Washington

On the ____ day of _____, 2026, the City Council of the City of Mukilteo, Washington, adopted Ordinance No. _____. A summary of the content of said ordinance, consisting of the title, provides as follows:

AN ORDINANCE OF THE CITY OF MUKILTEO, WASHINGTON
UPDATING CRITICAL AREA REGULATIONS PROVIDING FOR
SEVERABILITY AND ESTABLISHING AN EFFECTIVE DATE.

The full text of this ordinance will be mailed upon request.

APPROVED by the City Council on _____.

ASEA SANDINE, CITY CLERK

EXHIBIT A

Repeal and replace MMC 15.12, Flood Damage Prevention

Chapter 15.12 FLOOD DAMAGE PREVENTION

NOTE ABOUT BLUE ANNOTATIONS

This section of the ordinance changed significantly since the public review draft in response to agency feedback that made keeping flood regulations in Title 15 (rather than moving them to Title 17) necessary for compliance with federal flood rules. Since the structure is significantly different from what we originally proposed, we've left blue annotations in this section to explain the source of the standards.

Sections:

- 15.12.010 Purpose.
- 15.12.020 Applicability.
- 15.12.030 Definitions.
- 15.12.040 Administration.
- 15.12.050 Permits.
- 15.12.060 Minimum standards applicable to all development.
- 15.12.070 Additional standards applicable to all residential structures.
- 15.12.080 Additional standards applicable to all nonresidential structures.
- 15.12.090 Additional standards in the floodway.
- 15.12.100 Additional standards for development in VE zone.
- 15.12.110 Habitat assessments.
- 15.12.120 Violations and penalties.

15.12.010 Purpose. [simplified]

The purpose of this chapter is to protect public health and safety by managing development in flood hazard areas. These regulations are intended to:

- A. Minimize flood-related risks and costs.

- B. Protect life, property, and public infrastructure.
- C. Maintain natural floodplain functions.
- D. Ensure community eligibility for flood insurance and disaster relief programs.

15.12.020 Applicability. [consolidated language from a few sections to cover required elements]

- A. General. This chapter applies to all new development and substantial improvements in special flood hazard areas identified in the Federal Emergency Management Agency's "Flood Insurance Study for Snohomish County, Washington, and Incorporated Areas," effective June 19, 2020. No structures or land may be constructed or altered without full compliance with applicable regulations. [required by 44 CFR 59.22(a), 44 CFR 60.3 (preamble) and 44 CFR 60.2(h)]
- B. Interpretation. The provisions of this chapter shall be considered the minimum requirements, liberally construed in favor of the city, and deemed neither to limit nor repeal any other powers granted under state statutes. [recommended language in model ordinance]
- C. Reliance on maps. Flood Insurance Rate Maps (FIRMs) are used to delineate the boundaries of frequently flooded areas. Where there is a conflict between the boundary mapped on the FIRM and actual field conditions, a letter of map change can be applied for with FEMA. FIRMs govern unless a map change is officially approved by FEMA. The following Flood Insurance Rate Maps (FIRMs) are hereby adopted by reference and declared to be part of this ordinance:
 - 1. 53061C1010F
 - 2. 53061C1015F
 - 3. 53061C1020F
 - 4. 53061C1310F
- D. Abrogation and greater restrictions. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
- E. Adoption and incorporation by reference. To assist in the interpretation and implementation of this chapter, the city hereby adopts and incorporates the following as if set forth in full:
 - 1. Federal Emergency Management Agency's "Elevation Certificate and Instructions," as existing or as amended.
 - 2. Federal Emergency Management Agency's "Floodproofing Certificate for Non-Residential Structures," as existing or as amended.
 - 3. Federal Emergency Management Agency's "NFIP Technical Bulletins," as existing or as amended.
 - 4. Federal Emergency Management Agency's "P-758: Substantial Improvement/Substantial Damage Desk Reference," as existing or as amended.
 - 5. American Society of Civil Engineers "ASCE 24: Flood Resistant Design and Construction," as existing or as amended.
 - 6. American Society of Civil Engineers "ASCE 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures," as existing or as amended.

- F. Liability limitations. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. This chapter does not imply that land outside the area of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create a liability on the part of the City of Mukilteo, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder. [recommended language in model ordinance]

15.12.030 Definitions. [kept/added/aligned only those required by 44 CFR 59.1]

- A. For the purposes of this chapter and to clarify the intent and meaning of certain words or terms, some chapter-specific definitions are provided. Unless specifically defined below, words or phrases used in this chapter shall carry their customary meaning and shall be interpreted to give this chapter its most reasonable application.
- B. Terms with chapter-specific meanings.
1. "Alteration of watercourse" means any action that will change the location of the channel occupied by water within the banks of any portion of a riverine waterbody.
 2. "Area of shallow flooding" means a designated zone AO, AH, AR/AO or AR/AH (or VO) on a community's Flood Insurance Rate Map (FIRM) with a 1% or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow. Also referred to as the sheet flow area.
 3. "Area of special flood hazard" means the land in the floodplain within a community subject to a one percent or greater change of flooding in any given year. It is shown on the FIRM as the A, AE, or VE zone.
 4. "Base flood" means the flood having a 1%-chance of being equaled or exceeded in any given year (also referred to as the "100 year flood").
 5. "Base flood elevation (BFE)" means the elevation to which floodwater is anticipated to rise during the base flood.
 6. "Basement" means any area of a building having its floor sub-grade (below ground level) on all sides.
 7. "Development" means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials located within the area of special flood hazard.
 8. "Flood" or "flooding" means:
 - a. A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters, the unusual and rapid

- accumulation or runoff of surface waters from any source, or mudslides/mudflows proximately caused by flooding.
- b. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels, a sudden and unusually high water level in a natural body of water accompanied by a severe storm, an unanticipated force of nature such as a flash flood or abnormal tidal surge, or a similarly unusual and unforeseeable event which results in flooding.
9. "Flood elevation study" means an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards. Also known as a Flood Insurance Study (FIS).
10. "Flood insurance rate map (FIRM)" means the official map of a community, on which the Federal Insurance Administrator has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.
11. "Flood insurance study (FIS)" or "flood elevation study" means an examination, evaluation and determination of:
- a. Flood hazards and, if appropriate, corresponding water surface elevations;
 - b. Flood-related erosion hazards; and/or
 - c. Mudslide (i.e., mudflow).
12. "Floodplain" or "flood-prone area" means any land area susceptible to being inundated by water from any source. Also see the definition for "flood" or "flooding."
13. "Floodplain administrator" means the community official designated by title to administer and enforce the floodplain management regulations.
14. "Floodproofing" means any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate risk of flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents. Floodproofed structures are those that have the structural integrity and design to be impervious to floodwater below the BFE.
15. "Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Also referred to as "Regulatory Floodway."
16. "Functionally dependent use" means a use which cannot perform its intended use unless it is located or carried out in close proximity to water. The term only includes docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities. The term does not include long-term storage or related manufacturing facilities.
17. "Highest adjacent grade" means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.
18. "Historic structure" means any structure that is:

- a. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
 - b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
 - c. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or
 - d. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either by an approved state program or directly by the Secretary of the Interior.
19. "Lowest floor" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance (i.e. provided there are adequate flood ventilation openings).
20. "Mean sea level," for the purposes of floodplain management, means the vertical datum to which the BFE(s) shown on the community's FIRMs are referenced.
21. "New construction," for the purposes of determining insurance rates, means structures for which the "start of construction" commenced on or after the effective date of an initial Flood Insurance Rate Map or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.
22. "Recreational vehicle" means a vehicle that is:
- a. Built on a single chassis;
 - b. Four hundred square feet or less when measured at the largest horizontal projection;
 - c. Designed to be self-propelled or permanently towable by a light duty truck; and
 - d. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use
23. "Start of construction" means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days from the date of the permit. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include

excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

24. "Structure," for floodplain management purposes, means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.
25. "Substantial damage" means damage of any origin sustained by a structure, where the cost of restoring the structure to its pre-damage condition would equal or exceed fifty percent of the market value of the structure before the damage occurred.
26. "Substantial improvement" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty percent of the market value of the structure before the start of construction of the improvement, as defined in this section.
 - a. The term "substantial improvement" includes structures which have incurred substantial damage, as defined in this section, regardless of the actual repair work performed.
 - b. The term "substantial improvement" does not include any project for improvement of a structure to correct previously identified existing violations of state or local health, sanitary, building or other safety code specifications that have been identified by the local official responsible for such codes and that are the minimum necessary to assure safe living conditions. It also does not include any alteration of a historic structure, as defined in this chapter; provided, that the alteration will not preclude the structure's continued designation as a historic structure.
27. "Variance" means a grant of relief by a community from the terms of a floodplain management regulation.

15.12.040 Administration.

- A. Floodplain administrator. The director of the community development department, or designee, is hereby designated as the floodplain administrator to administer, implement, and enforce this chapter. [required by 44 CFR 59.22(b)(1)]
- B. Responsibilities. Duties of the floodplain administrator include, but are not limited to:
 1. Permit Review. The floodplain administrator may approve, conditionally approve, or deny applications for activities regulated by this chapter after a determination of compliance with the following:
 - a. The permit requirements of this chapter have been satisfied;
 - b. All other required local, state, and federal permits have been obtained;
 - c. The project site is reasonably safe from flooding; and

- d. The proposed development is not located in the floodway (or all floodway encroachment provisions have been met). [required by 44 CFR 60.1 (b)]
- 2. Record keeping. [required by 44 CFR 60.3 (b)(5)]
 - a. Timeline. All records pertaining to the provisions of this chapter are required to be kept in perpetuity and available for public inspection.
 - b. General records. Where BFE data is provided for new or substantially improved structures, records must include whether or not the structure contains a basement, the as-built elevation in relation to mean sea level (including the basement, if applicable), and copy of the elevation certificate.
 - c. Records for non-residential structures. For nonresidential structures, records must also include the elevation in relation to mean sea level to which the structure was floodproofed and a copy of the floodproofing certificate.
 - d. Records in V and VE zones. Documentation on the elevation certificate of the elevation of the bottom of the lowest horizontal structural member is required in V or VE zones.
 - e. Other. The city must also keep all certification records for floodway encroachments, documentation of all calculations supporting substantial improvement and substantial damage applications, and records of all variances and justifications for their issuance.
- 3. Special notifications.
 - a. Annexations. Whenever an annexation is initiated pursuant to Chapter 35A.14 RCW that includes an area of special flood hazard, the floodplain administrator must provide written notification to the Federal Insurance Administrator and FEMA Region X.
 - b. Watercourse alterations or relocations. Whenever a watercourse is to be altered or relocated, the floodplain administrator must notify adjacent communities and the Department of Ecology prior to such action, submit evidence of that notification to the Federal Insurance Administrator and FEMA Region X, and assure that the flood carrying capacity of the altered or relocated portion of said watercourse is maintained. [required by (44CFR 60.3(b)(6)) and (44CFR 60.3(b)(7))]
- 4. Interpretation.
 - a. Lack of data. When BFE data is not available from an authoritative source, applications must be reviewed to assure proposed construction will be reasonably safe from flooding. The floodplain administrator should obtain, review, and use the best available data which may include the use of historical data, high water marks, or photographs of past flooding to make the reasonably safe determination. [required by 44 CFR 60.3(a)(3) and 44 CFR 60.3(b)(4)]
 - b. FIRM boundaries. The floodplain administrator shall not interpret the boundaries of the areas of special flood hazard shown on the FIRM. Flood Insurance Rate Maps (FIRMs) are used to delineate the boundaries of frequently flooded areas. Where there is a conflict between the boundary mapped on the FIRM and actual field conditions, a letter of map change can be applied for with FEMA. FIRMs govern unless a map change is officially approved by FEMA. [aligned with 44 CFR 59-76]

15.12.050 Permits.

- A. Permit required. A floodplain development permit is required prior to development in an area of special flood hazard. [required by 44 CFR 60.3(b)(1)]
- B. Timing exception for emergency activities. When emergencies occur that pose an imminent threat to public health, safety, or the environment and that require action in a time frame too short to allow for permitting, those actions can proceed as long as:
 - 1. The floodplain administrator is notified in writing within 72 hours of the start of the emergency development activity. Where notification timeline ends outside of business hours, notification the next business day will be considered timely.
 - 2. The emergency development activity is documented, including timing, cause, description of activities completed, inventory of materials used, and quantities of any grade or fill.
 - 3. An application for a floodplain development permit is submitted within 30 calendar days of the emergency activity, or as soon as reasonably feasible thereafter. The permit approval may be conditioned to require all work to come into compliance with the standards of this chapter and to ensure full restoration of the flood hazard area.
- C. Types of permits.
 - 1. Programmatic floodplain development permit. Programmatic floodplain permits may be issued to public agencies and utility providers to eliminate the need for individual permits for ongoing, routine development activities that are unlikely to cause an adverse cumulative impact to the area of special flood hazard.
 - 2. Floodplain development permit. A floodplain development permit is required for all development that does not qualify for a programmatic floodplain development permit.
 - a. Timing. Floodplain development permits must be issued together with any associated land use or development permits. Advanced issuance of a floodplain development permit is not allowed.
 - b. Application materials. All studies and plans needed to review a project for compliance with these standards must be prepared by a qualified professional. The city may require third party review of materials at the applicant's expense.
- D. Application materials. All floodplain development permit applications shall be made on forms furnished by the city and consistent with all relevant submittal checklists. At a minimum, the application must include the following information: [items below required in model ordinance]
 - 1. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures recorded on a current elevation certificate with Section B completed by the Floodplain Administrator.
 - 2. Elevation in relation to mean sea level to which any structure has been flood proofed.
 - 3. Where a structure is to be flood proofed, certification by a registered professional engineer or architect that the flood proofing methods for any nonresidential structure meet flood proofing criteria.
 - 4. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.

5. Where a structure is proposed in a V, V1-30, or VE zone, a V-zone design certificate.
 6. Where development is proposed in a floodway, an engineering analysis indicating no rise of the Base Flood Elevation.
- E. Review process. Floodplain permits are generally processed as Type I permit and do not require public notice or public hearing unless consolidated and integrated with other permit approvals that require notice or public hearings to comply with Chapter 17.13.
 - F. Analysis and findings. The floodplain administrator must prepare findings that include the duration of permit, geographic area covered by permit, permitted activities and any restrictions or conditions, any activities requested that are not approved as part of the permit approval, and an analysis of the consistency of the activity or activities with the requirements of this chapter.
 - G. Decision. Following the completion of any hearing, procedure, or administrative decision, the floodplain application shall be approved, approved with conditions or denied and a written decision shall be issued within ten calendar days. The floodplain administrator may include any such conditions, modifications, or safeguards necessary to assure consistency of the project with this chapter, the NFIP, and any other applicable regulations.
 - H. Timing for issuance. A floodplain development permit must be issued together with any associated land use or development permits.
 - I. Expiration and renewal. A programmatic floodplain development permit is valid for a period of up to one year from the date of approval and may be renewed one time for a period of up to one year if FIRM maps have not changed. All other floodplain development permits are valid for one hundred eighty days from the date of issuance and may be renewed for one period of 180 days if FIRM maps have not changed and work has begun. Renewal requests must be submitted a minimum of 30 days before expiration.
 - J. Variances. Variances from these standards are rare and may be granted only for a property with physical characteristics so unusual that complying with floodplain requirements would create an exceptional hardship. Variances follow the procedures in Chapter 17.13. In addition to the general variance criteria in Chapter 17.64, variances from floodplain regulations must demonstrate that they will not result in increased flood heights or flood levels. Applicants for a variance from these standards must acknowledge that the issuance of a variance to construct a structure below the BFE will result in increased premium rates for flood insurance and that construction below the BFE increases risks to life and property. [\[aligned with 44 CFR 60.6\]](#)
 - K. Appeals. Appeals of decisions made by the floodplain administrator shall be made to the hearing examiner in accordance with the procedures set forth in Chapter 17.13. Appeals of decisions made under consolidated review where the highest decision authority is not the floodplain administrator shall be made to Snohomish County Superior Court.

15.12.060 Minimum standards applicable to all development.

- A. Minimum BFE. All new habitable spaces must be two feet above Base Flood Elevation (BFE). When BFE data is not available, the lowest floor must be at least two feet above the highest

adjacent grade and the floodplain administrator must find that the proposed construction will be reasonably safe from flooding.

- B. Maximum impact. No new construction, substantial improvements, or other development (including fill) is permitted in AE zones if the cumulative effect of the proposed development, when combined with all other existing and anticipated development, would increase the water surface elevation of the base flood more than one foot at any point within the community. [required by 44 CFR 60.3(c)(10)]
- C. Limitations on recreational vehicles. Recreational vehicle shall only be permitted in the area of special flood hazard when they are on the site for fewer than 180 days or are fully licensed and ready for highway use, on wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, with no permanently attached additions. [required by 44 CFR 60.3(c)(14)]
- D. Anchoring. [required by 44 CFR 60.3(a)(b), 44 CFR 60.3(a)(3)(i), and 44 CFR 60.3(b)(8)]
 - 1. All new construction and substantial improvements, including those related to manufactured homes, shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
 - 2. All manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors. Manufactured homes in VE zone must comply with the additional standards of that zone.
- E. Construction Materials and Methods. [required by 44 CFR 60.3(a)(3)(ii-iv)]
 - 1. All new construction and substantial improvements shall be constructed:
 - a. With materials and utility equipment resistant to flood damage; and
 - b. Using methods and practices that minimize flood damage.
 - 2. Air conditioning, electrical, heating, plumbing, mechanical, ventilation equipment and other service facilities shall be designed and/or otherwise elevated or located to prevent water from entering or accumulating within the equipment during conditions of flooding.
- F. Enclosed areas below the lowest floor. If structures are constructed or substantially improved with fully enclosed areas below the lowest floor, the areas shall be used solely for parking of vehicles, building access, or storage. [required by 44 CFR 60.3(c)(5)]
- G. Utilities. [required by 44 CFR 60.3(a)(5)(6) and WAC 173-160-171]
 - 1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems.
 - 2. Water wells shall be located on high ground that is not in the floodway.
 - 3. All new and replacement sanitary sewer systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters.
 - 4. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- H. General project design. Where developments contain either more than 50 lots or more than 5 acres, base flood elevation data shall be included as part of the application. Regardless of size,

all subdivisions and new development shall:

1. Be consistent with the need to minimize flood damage.
 2. Have public utilities and facilities, such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.
 3. Have adequate drainage provided to reduce exposure to flood damage. [required by 44 CFR 60.3(a)(4) and (b)(3)]
- I. Post-construction certification. Upon completion of a new structure or substantial improvement, certification that the requirement of this chapter have been satisfied shall be provided to the Floodplain Administrator for verification.

15.12.070 Additional standards applicable to all residential structures. [covers requirements in 44 CFR 60.3(b), (c), and (e)]

- A. Manufactured homes. All new or substantially improved manufactured homes must be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated one foot or more above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement. [required by 44 CFR 60.3(c)(6)(12)]
- B. Crawlspace standards. Crawlspaces are subject to the following requirements:
1. The interior grade of the crawlspace below the base flood elevation (BFE) must not be more than two feet below the lowest adjacent exterior grade.
 2. The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall must not exceed four feet at any point. The height limitation is the maximum allowable unsupported wall height according to the engineering analysis and building code requirements for flood hazard areas.
 3. There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles, or gravel or crushed stone drainage by gravity or mechanical means.
 4. The velocity of floodwaters at the site should not exceed five feet per second for any crawlspace. For velocities in excess of five feet per second, other foundation types should be used.
 5. Below-grade crawlspace construction in accordance with the requirements listed above will not be considered basements.
- C. Other fully enclosed areas. Fully enclosed areas below the lowest floor that are subject to flooding must be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

1. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
 2. The bottom of all openings shall be no higher than one foot above grade.
 3. Openings may be equipped with screens, louvers or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
 4. A garage attached to a residential structure, constructed with the garage floor slab below the base flood elevation must be designed to allow for the automatic entry and exit of floodwaters.
- D. Accessory structures. Accessory structures within flood hazard areas may only be used for parking or storage, are limited to 650 square feet, and must be adequately anchored to prevent flotation, collapse, and lateral movement. [recommended by model ordinance]

15.12.080 Additional standards applicable to all nonresidential structures. [covers requirements in 44 CFR 60.3(c)(3) and (4)]

- A. Preferred floodproofing method. New construction and substantial improvement of any commercial, industrial or other nonresidential structure must either meet the requirements below or satisfy all of the requirements in section B.
1. Minimum BFE. The lowest floor, including basement, must be either two feet above BFE or elevated as required by ASCE 24, whichever is greater. Mechanical equipment and utilities shall be waterproofed or elevated least one foot above the BFE, or as required by ASCE 24, whichever is greater.
 2. Fully enclosed areas. Fully enclosed areas below the lowest floor that are subject to flooding must be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:
 - a. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
 - b. The bottom of all openings shall be no higher than one foot above grade.
 - c. Openings may be equipped with screens, louvers or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- B. If the requirements of section A above are not met, then new construction and substantial improvement of any commercial, industrial or other nonresidential structure must meet all of the following requirements. Choosing these alternate standards may result in higher flood insurance premiums, because rates are based on one foot below the floodproofed level.
1. Be dry flood proofed so that below one foot or more above the base flood level the structure is watertight with walls substantially impermeable to the passage of water or dry flood proofed to the elevation required by ASCE 24, whichever is greater.
 2. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

3. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the floodplain administrator.
 4. Nonresidential structures that are elevated, not flood proofed, must meet the standards for fully enclosed spaces below the lowest floor described in section A.
- C. Special requirements for critical facilities. New schools, hospitals, and emergency response facilities are only allowed in flood hazard areas when no other feasible alternative site is available. Applicants must demonstrate that there is a community need for the facility and submit a summary of alternative sites reviewed and reasons those sites are not feasible. When allowed in flood hazard areas, these facilities must have the lowest floor and ingress and egress points elevated either three feet above BFE or to the height of the five-hundred-year flood, whichever is higher. [recommended by model ordinance]

15.12.090 Additional standards in the floodway.

- A. No rise standard. Prohibit encroachments, including fill, new construction, substantial improvements, and other development, unless certification by a registered professional engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels during the occurrence of the base flood discharge. [required by 44 CFR 60.3(d)(3)]
- B. Residential construction. Construction or reconstruction of residential structures is prohibited within designated floodways, except for:
1. Repairs, reconstruction, or improvements to a structure which do not increase the ground floor area.
 2. Repairs, reconstruction or improvements to a structure, the cost of which does not exceed 50% of the market value of the structure before the repair or reconstruction starts or, in the case of a damaged structure, the value before the damage occurred. Project improvements to correct violations of state or local health or safety codes identified by local code enforcement official may be excluded from 50% calculation if they are the minimum necessary to assure safe living conditions. [required by RCW 86.16.041]
- C. Building standards. Where floodway development is allowed, all structural standards in this chapter apply. [required by 44 CFR 60.3(d)(1-4)]

15.12.100 Additional standards for development in VE zone. [required by 44 CFR 60.3(e)]

- A. Fill prohibited. The use of fill for structural support of buildings is prohibited.
- B. Pilings and columns. All new construction and substantial improvements must be elevated on pilings and columns to meet the BFE requirements for the building type.
- C. Structural design. The pile or column foundation and structure attached thereto must be anchored to resist flotation, collapse, and lateral movement. Wind and water loading values

shall each have a 1% chance of being equaled or exceeded in any given year (100-year mean recurrence interval).

- D. Certification. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice and meet all provisions of this section.
- E. Elevation documentation. Development in the VE zone must document the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures and whether or not such structures contain a basement and submit such documentation to the floodplain administrator.
- F. Landward of high tide. All new construction must be located landward of the reach of mean high tide.
- G. Areas below lowest floor. Space below the lowest floor must either be free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or foundation system. For the purposes of this section, a breakaway wall shall have a design safe loading resistance of 10-20 pounds per square foot unless a registered professional engineer or architect certifies that an alternate design meets the following conditions:
 - 1. Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and
 - 2. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).

15.12.110 Habitat assessments. [needed to ensure compliance with Puget Sound BiOp issued by National Marine Fisheries Service]

- A. Required. To comply with the National Marine Fisheries Services' 2008 Biological Opinion, the city requires habitat assessments for all projects that need a floodplain permit unless they are beneath the thresholds below.
- B. Thresholds. The following actions do not require a habitat assessment:
 - 1. Normal maintenance, repairs, or remodeling of existing structures when work is less than 50% of the market value of the structure.
 - 2. Structural expansions less than 10% of existing footprint.
 - 3. Activities with the sole purpose of creating, restoring, or enhancing the natural functions that comply with federal and state standards and do not include structures, grading, filling, or impervious surfaces.

4. Development of open space and recreational facilities that do not include structures, fill, impervious surfaces, or removal of more than 5% of the native vegetation on the portion of the property in the floodplain.
 5. Repair of onsite septic systems when ground disturbance is the minimal necessary and BMPs are used to prevent stormwater runoff and soil erosion.
 6. Projects that have already received concurrence under another permit or consultation (e.g., through Section 7, Section 4d, or Section 10 of the Endangered Species Act (ESA) or as an Army Corps 404 permit).
 7. Repair of an existing, functional bulkhead in the same location and footprint with the same materials when the Ordinary High Water Mark (OHWM) is outside of the face of the bulkhead and the work qualifies for a Corps exemption from Section 404 coverage.
- C. Report contents. The report must include:
1. Description of project area and methods of work.
 2. Relevant maps and site plans.
 3. Consideration of direct and indirect impacts of the project as well as the cumulative impacts for reasonably foreseeable projects beyond the subject proposal.
 4. Explanation of how the project avoids adverse impacts including, but not limited to water quantity/quality, flood velocities/volumes, flood storage capacity, riparian vegetation, habitat forming processes, or spawning substrate.
- D. Report findings. The habitat assessment must show that the proposal will result in no likely adverse effects on floodplain functions, salmonid species, or orcas.

15.12.120 Violations and penalties. [required by 44 CFR 60.2(h)]

Violations of the provisions of this chapter (including violations of conditions and safeguards established in connection with conditions), shall constitute a misdemeanor and be subject to the provisions contained in Chapter [1.32](#), General Penalties. In addition to authorized penalties, the city may take such other lawful action as is necessary to prevent or remedy or mitigate violations.

EXHIBIT B

Amendments to MMC 17.08.020, Definitions

Delete the following terms and their definitions:

- “Approve” or “approval”
- “BMP”
- “CAMP”
- “Category I wetlands”
- “Category II wetlands”
- “Category III wetlands”
- “Category IV wetlands”
- “Contouring”
- “Enhancement”
- “Flood hazard area”
- “Habitat” or “wildlife habitat”
- “Habitat buffer”
- “Habitat management”
- “Habitat map”
- “Hazard areas”
- “Leveling”
- “Licensed professional”
- “MHR” or “Mukilteo habitat reserve”
- “New development”
- “Overstory”
- “Program”
- “Project”
- “Qualified consultant”
- “Qualified wetland specialist”
- “Registered professional”
- “Rehabilitation”
- “Restoration”
- “Secondary habitat”
- “Sensitive areas”
- “Sensitive lands”
- “Stage”
- “Stream buffer area”
- “Stream report
- “Structural diversity”
- “Subject property”
- “Substrate”
- “Tertiary habitat”
- “Threatened species”
- “Toe of steep slope”
- “Top of steep slope”
- “Tsunami hazard areas”
- “Uncontaminated water”
- “Undergrounded areas”
- “Understory”
- “Usable land area”
- “Vegetation”
- “View”
- “Wetland buffer area”
- “Wetland classification”
- “Wetland creation”
- “Wetland determination”
- “Wetland enhancement
- “Wetland functions and values”
- “Wetland impacts”
- “Wetland off-site mitigation”
- “Wetland on-site mitigation”
- “Wetland restoration”
- “Wetlands specialist”
- “Wildlife report”

Add the following terms and definitions:

“Critical areas” mean the following areas and ecosystems found within city limits:

- Wetlands
- Fish and wildlife habitat conservation area
- Frequently flooded areas
- Geologically hazardous areas

“Ecosystem functions” means the products, physical and biological conditions, and environmental qualities of an ecosystem that result from interactions among ecosystem processes and ecosystem structures. Ecosystem functions include, but are not limited to, sequestered carbon, attenuated peak streamflow, aquifer water level, reduced pollutant concentrations in surface and ground waters, cool summer in-stream water temperatures, and fish and wildlife habitat functions.

“Ecosystem values” means the cultural, social, economic, and ecological benefits attributed to ecosystem functions.

“Fish habitat” or “habitat that supports fish life” means habitat, which is used by fish life at any life stage at any time of the year including potential habitat likely to be used by fish life, which could reasonably be recovered by restoration or management and includes off-channel habitat.

“Frequently flooded areas” means areas within the 100-year flood plain designations of the Federal Emergency Management Agency and the National Flood Insurance Program, meaning that there is at least a one percent or greater chance of flooding in any given year.

“Land Use Impact” means the level of impact from a proposed land use on a wetland. Land use intensity, when not specified below, is determined by the Director.

- High impact land uses include:
 - Commercial
 - Urban
 - Industrial
 - Institutional
 - Mixed-use developments
 - Residential (more than 1 unit/acre)
 - Roads: federal and state highways, including on-ramps and exits, state routes, and other roads associated with high-impact land uses
 - Railroads
 - Open/recreational space with high-intensity uses (golf courses, ball fields, etc.)
- Moderate impact land uses include:
 - Residential (1 unit/acre or less)
 - Roads: Forest Service roads and roads associated with moderate-impact land uses
 - Open/recreational space with moderate-intensity uses (parks with paved trails or playgrounds, biking, jogging, etc.)

- Utility corridor or right-of-way used by one or more utilities and including access/maintenance road
- Low impact land uses include:
 - Natural resource lands (forestry/silviculture—cutting of trees only, not land clearing and removing stumps)
 - Open/recreational space with low-intensity uses (unpaved trails, hiking, birdwatching, etc.)
 - Utility corridor without a maintenance road and little or no vegetation management
 - Cell tower

[NOTE: The “Land Use Impact” definition is needed to align with Option 2 wetland buffer approach. If a different buffer approach is selected, this definition may not be needed.]

“Mitigation, off-site compensatory” means to mitigate impacts to critical areas away from the site on which a critical area has been impacted.

“Mitigation, on-site compensatory” means to mitigate impacts to critical areas at or adjacent to the site on which a critical area has been impacted.

“No Net Loss of Critical Areas” means no overall reduction in existing ecosystem functions and values. This may involve fully offsetting any unavoidable impacts to critical area functions and values pursuant to WAC 365-196- 830 ‘Protection of critical areas,’ or as amended.

“Qualified professional” means a person who possesses the appropriate professional license, registration, certification, and training in the scientific or technical discipline necessary to make the professional judgments, reports, or findings required. Examples include, but are not limited to, licensed engineers, registered architects or surveyors, certified biologists, each qualified within their respective fields in accordance with state law.

- For fish and wildlife habitat conservation areas, this means a professional biologist with a degree in biology or a related field and experience preparing reports for the relevant type of species.
- For geologically hazardous area, this means a professional engineer or geologist licensed in the state of Washington.
- For trees, this means an ISA certified arborist.
- For wetlands, this means a certified Professional Wetland Scientist through the Society of Wetland Scientists with at least two years of professional experience delineating wetlands, preparing wetland reports, conducting function assessments, or developing and implementing mitigation plans may substitute for a degree.

“Riparian management zone” means the designated area adjacent to streams and other water bodies that is managed to protect water quality and fish and wildlife habitat. The zone is measured horizontally from the OHWM or the outer edge of the channel migration zone, whichever is greater. The top of bank may be used in situations where the OHWM cannot be identified.

Amend the following defined terms and definitions as noted:

“Agriculture” means tilling of the soil, the raising of crops, horticulture, viticulture, the harboring of livestock, pasturing, grazing, dairying, and/or animal husbandry including all uses customarily incidental thereto, except the following:

1. Animal shelter buildings for horses and barns;
2. Beekeeping;
3. Harboring of chickens;
4. Noncommercial individual or collective gardens;
5. Medical cannabis collective gardens; and
6. Any type of kennel, animal services facility or research facility using animals.

Forest practices are not included in this definition. An operation ceases to be an ongoing agricultural use when the area is proposed for conversion to a nonagricultural use or when the land has lain idle for more than five years without being registered in a soil conservation program.

“Best available science” means current scientific information consistent with WAC 365-195-900 through 925 that was derived from a sound scientific process that included critical peer review by qualified scientific experts in the relevant discipline, clearly stated and replicable methods, quantitative analysis, and logical conclusions. using the most current, widely accepted scientific data, research, studies and/or reports in making land use and policy decisions when designating and protecting environmentally sensitive areas. See WAC 365-195-900.

“Best management practices (BMPs)” means the schedules of activities, prohibitions of practices, maintenance procedures, pollution prevention and educational practices, and structural and/or managerial practices approved by the director that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.

“Buffer” means a vegetated area, typically adjacent or otherwise associated with an environmentally sensitive feature, ~~which is retained in its natural state. No clearing, grading, or filling is permitted within a buffer (unless specifically conditioned otherwise).~~

“Development” means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, storage of equipment or materials, subdivision of land, removal of more than 5% of the native vegetation on the property, or alteration of natural site characteristics. ~~construction or exterior alteration of structures; grading, dredging, drilling, dumping, filling; removal of sand, gravel, or minerals; bulk heading; driving of pilings; placing of obstructions; or any project of a temporary or permanent nature which modifies structures, land, or shorelines and which does not fall within the allowable exemptions contained in the Mukilteo Municipal Code.~~

~~Development: any man-made change to improved or unimproved real estate in the Regulatory Floodplain, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, storage of equipment or materials, subdivision of~~

land, removal of more than 5% of the native vegetation on the property, or alteration of natural site characteristics:

“Fish and wildlife habitat conservation areas (HCAs)” means 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. This definition excludes 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 but includes:

1. Streams;
2. Riparian management zones;
3. Areas where species that are listed as endangered, threatened, or sensitive by a federal or state agency have a primary association;
4. Areas identified by the Washington State Department of Natural Resources’ Natural Heritage Program as having rare plant species and high-quality ecosystems;
5. Commercial and recreational shellfish areas;
6. Kelp and eelgrass beds; herring, smelt, and other forage fish spawning areas;
7. Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat;
8. Waters of the state;
9. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity;
and
10. State natural area preserves, natural resource conservation areas, and state wildlife areas.

~~necessary for maintaining species in suitable habitats within their natural geographic distribution so that isolated sub-populations are not created as designated by WAC 365-190-080(5). These areas include:~~

- ~~1. Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association;~~
- ~~2. Habitats of local importance, including but not limited to areas designated as priority habitat by the Department of Fish and Wildlife;~~
- ~~3. Commercial and recreational shellfish areas;~~
- ~~4. Kelp and eelgrass beds; forage fish (sandlance, surf smelt and herring) spawning areas;~~
- ~~5. Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat, including those artificial ponds intentionally created from dry areas in order to mitigate impacts to ponds;~~
- ~~6. Waters of the state, including lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington;~~

- ~~7. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity;~~
- ~~8. State natural area preserves and natural resource conservation areas; and~~
- ~~9. Land essential for preserving connections between habitat blocks and open spaces.~~

“Geologically sensitive hazardous areas” means areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to the siting of commercial, residential, or industrial development consistent with public health or safety concerns. This includes:

- Erosion hazard areas. Areas likely to become unstable, such as bluffs, steep slopes, and areas with unconsolidated soils.
- Landslide hazard areas. Areas at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors. These areas are defined in more detail in this chapter.
- Seismic hazard areas. Areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement, soil liquefaction, debris flows, lahars, or tsunamis.
- Areas subject to other geological events such as coal mine hazards and volcanic hazards including: Mass wasting, debris flows, rock falls, and differential settlement.

within the city that are:

- ~~1. Affected by, contain, or exhibit unstable or potentially unstable soil types, steep slopes, erosion, earth movement, slides, surface water runoff, ground water, liquefaction, within the one-hundred-year floodplain, or within a tsunami hazard area.~~
- ~~2. Within the designated geologic sensitive area as shown on the city’s “geologic sensitive areas” map (see Attachment A at the end of Chapter 17.52A);~~
- ~~3. Areas that may not be suited to development consistent with public health, safety, or environmental standards, because of their susceptibility to erosion, sliding, earthquake, or other geological events as designated by WAC 365-190-080(4);~~

“Landslide hazard areas” means areas that are potentially subject to risk of mass movement due to a combination of geologic, topographic, and hydrologic factors. These areas are typically susceptible to landslides because of a combination of factors including: bedrock, soil, slope gradient, slope aspect, geologic structure, ground water, or other factors. subject to landslides based on a combination of geologic, topographic, and hydrologic factors. Areas include, at a minimum:

1. Areas of historic failures, such as:
 - Those areas delineated by the United States Department of Agriculture Natural Resources Conservation Service as having a significant limitation for building site development;
 - Those coastal areas mapped as class u (unstable), uos (unstable old slides), and urs (unstable recent slides) in the department of ecology Washington coastal atlas; or

- Areas designated as quaternary slumps, earthflows, mudflows, lahars, or landslides on maps published by the United States Geological Survey or Washington department of natural resources.
2. Areas with all three of the following characteristics:
 - Slopes steeper than 15 percent;
 - Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and
 - Springs or groundwater seepage.
 3. Areas that have shown movement during the holocene epoch (from 10,000 years ago to the present) or which are underlain or covered by mass wastage debris of this epoch;
 4. Slopes that are parallel or subparallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;
 5. Slopes having gradients steeper than 80 percent subject to rockfall during seismic shaking;
 6. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action, including stream channel migration zones;
 7. Areas that show evidence of, or are at risk from snow avalanches;
 8. Areas located in a canyon or on an active alluvial fan, presently or potentially subject to inundation by debris flows or catastrophic flooding; and
 9. Any area with a slope of 40 percent or steeper and with a vertical relief of 10 or more feet except areas composed of bedrock. A slope is delineated by establishing its toe and top and measured by averaging the inclination over at least 10 feet of vertical relief.

“Mitigate” or “mitigation” means and includes, in order of preference:

1. Avoiding the impact altogether by not taking a certain action or parts of actions;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating the impact over time by preservation and maintenance operations pursuant to activities undertaken during the life of the action;
5. Compensating for the impact by replacing or providing substitute resources or environments; and/or
6. Monitoring the impact and taking remedial action when necessary.

“Native growth protection area” means a protected ~~area corridor~~ area or vegetated with native trees, shrubs and groundcover that connects ~~critical areas~~ or permanently preserves critical areas. ~~of natural areas within or adjacent to and across the project site. The corridor should be maintained to exclude nonnative, invasive species.~~

“Native vegetation” means plant species, other than noxious weeds, that are indigenous to the area in question and which ~~reasonably~~ could have been expected to naturally occur before settlements.

“Priority habitat” means a habitat type with unique or significant value to many species. An area identified and mapped as priority habitat has one or more of the following attributes: (1) comparatively high fish and wildlife density; (2) comparatively high fish and wildlife species diversity; (3) important fish and wildlife breeding habitat; (4) important fish and wildlife seasonal ranges; (5) important fish and wildlife movement corridors; (6) limited availability; (7) high vulnerability to habitat alteration; and (8) unique or dependent species.

~~A priority habitat may be described by a unique vegetation type or by a dominant plant species that is of primary importance to fish and wildlife (e.g., oak woodlands, juniper savannah). A priority habitat may also be described by a successional stage (e.g., old growth and mature forests). Alternatively, a priority habitat may consist of specific habitat features (e.g., talus slopes, caves, snags) of key value to fish and wildlife.~~

“Priority species” means fish and wildlife species requiring protective measures and/or management actions to ensure their survival. A species identified and mapped as priority species fits one or more of the following criteria: State-listed candidate species, vulnerable aggregations, and species of recreational, commercial, and/or Tribal importance.

~~1. Criterion 1—State-Listed and Candidate Species. State-listed species are native fish and wildlife species legally designated as endangered (WAC 232-12-014), threatened (WAC 232-12-011), or sensitive (WAC 232-12-011). State candidate species are fish and wildlife species that will be reviewed by the department (POL-M-6001) for possible listing as endangered, threatened, or sensitive according to the process and criteria defined in WAC 232-12-297.~~

~~2. Criterion 2—Vulnerable Aggregations. Vulnerable aggregations include species or groups of animals susceptible to significant population declines, within a specific area or statewide, by virtue of their inclination to aggregate. Examples include heron rookeries, seabird concentrations, marine mammal haulouts, shellfish beds, and fish spawning and rearing areas.~~

~~3. Criterion 3—Species of Recreational, Commercial, and/or Tribal Importance. Native and nonnative fish and wildlife species of recreational or commercial importance, and recognized species used for tribal ceremonial and subsistence purposes, whose biological or ecological characteristics make them vulnerable to decline in Washington or that are dependent on habitats that are highly vulnerable or are in limited availability.~~

“Steep slopes” means a naturally occurring slopes that is at least ten feet tall and rises ten feet or more for every twenty-five feet horizontal (i.e., 40% forty percent or greater, also represented as a twenty-two degree angle). A slope is delineated by establishing its toe and top. The toe is the lower limit of the area where the ground surface rises ten feet or more vertically within a horizontal distance of twenty-five feet. The top of slope is the distinct break in slope separating the areas sloped over 40% from portions of the site with lesser slopes. Where no distinct break exists, the top is the uppermost limit before the ground drops vertically within a horizontal distance of twenty-five feet. Existing slopes modified with engineering oversight or in accordance with standard construction industry techniques are not considered steep slopes.

“Stream” means water contained within a channel, either perennial or intermittent, and classified according to WAC 222-16-030 ~~and as listed under water typing system.~~ Streams also include open natural watercourses modified by man. Streams do not include irrigation ditches, waste ways,

drains, outfalls, operational spillways, channels, stormwater runoff facilities or other wholly artificial watercourses, except those that directly result from the modification to a natural watercourse.

“Wetland category” means ~~the category ranking (Category 1, 2, 3, or 4) according to a description of a wetland system based on the classification system used in the most current edition of the Washington State Wetland Rating System for Western Washington~~ Washington State Wetlands Rating System—Western Washington, prepared by the Washington State Department of Ecology.

“Wetland delineation” means the method used to establish the existence (location) and physical limits (size) of a wetland for purposes of federal, state, and local regulations. Wetlands are delineated using the approved federal wetland delineation manual and applicable regional supplements in accordance with WAC 173-22-035. ~~means identification of wetlands and delineation of their boundaries pursuant to this chapter, done in accordance with the approved federal wetland delineation manual and applicable regional supplements. All areas within the city meeting the wetland designation criteria in that procedure are hereby designated critical areas and are subject to the provisions of Chapter 17.52B.~~

EXHIBIT C

Amendments to MMC 17.13.020.D, Permit Types

D. Permit Types.

Type I: Clerical	Type II: Administrative	Type III: Quasi-Judicial	Type IV: Legislative/Council Decisions
Administrative Interpretations Application Extensions Building Permits Clearing and Grading Permits Code Enforcement Design Review Final Plats/Final Short Plats Historic Register Applications Inspections Lot Line Adjustments Minor Modifications Noise Variances (30 days or less) Right-of-Way Permits Shoreline Exemptions Stormwater Permits Temporary Uses Tree or Vegetation Removal Wireless Eligible Facility Requests	Any Type I Actions Subject to SEPA Review Binding Site Plans Fence Modifications Noise Variances > 30 days Reasonable Use, <u>Single-Family Residential</u> < 50% Disturbance SEPA Determinations Short Plats Shoreline Substantial Development Unit Lot Subdivisions Wireless Communication Facilities and Small Cell Wireless	Abatement Actions Appeals Conditional Uses Essential Public Facilities Preliminary Plats Plat Alterations Reasonable Use, <u>Others</u> ≥ 50% Disturbance Variances (Excluding Noise)	Annexation Code Amendments Comprehensive Plan Amendments Development Agreements Rezones, Area-Wide Rezones, Site-Specific Sector Plan Amendments Street Vacations

EXHIBIT D

Repeal and replace MMC Chapter 17.52, Critical Areas Regulations

Chapter 17.52 CRITICAL AREAS REGULATIONS

Sections:

- 17.52.010 Purpose.
- 17.52.020 Applicability.
- 17.52.030 Designation and delineation of critical areas.
- 17.52.040 Exemptions.
- 17.52.050 Standards applicable in all critical areas.
- 17.52.060 Reasonable use provisions.
- 17.52.070 Enforcement.

17.52.010 Purpose.

The purpose of the city's critical areas regulations (including those in Chapters [17.52A](#) through [17.52D](#)) is to:

- A. Use best available science to designate, classify, and protect critical areas.
- B. Ensure no net loss of critical area functions or values.
- C. Protect lives and property.
- D. Provide the flexibility needed to adjust to site-specific characteristics.
- E. Preserve reasonable use of private property.
- F. Facilitate development and maintenance of the public facilities and services necessary to support development.

17.52.020 Applicability.

- A. General applicability. These regulations apply to all development:
 - 1. Within a critical area.
 - 2. Within a critical area buffer.
 - 3. Within 50 feet of a steep slope or landslide hazard area.
- B. Limited applicability to existing development. Enhancement of critical areas degraded by development legally established before the adoption of these regulations is not required.

Development and activities existing prior to the adoption of this ordinance may continue as long as there is no expansion. Legally established impervious areas may be redeveloped without mitigation as long as the total square footage and location of impervious surface within a critical area or its buffer remains unchanged.

- C. Relationship to other critical area chapters. The standards of this chapter apply to all critical areas, regardless of type. Development subject to the general requirements of this chapter is also subject to the specific requirements for each critical area present, including regulations in:
 - 1. Chapter 17.52A, Geologically Hazardous Areas
 - 2. Chapter 17.52B, Wetlands
 - 3. Chapter 17.52C, Fish and Wildlife Habitat Conservation Areas
 - 4. Chapter 17.52D, Flood Hazard Areas
- D. Multiple critical areas. When a property or portion of a property contains multiple critical areas or buffers and there is a conflict between the requirements, the requirements that provide the most protection to the critical areas involved applies.
- E. Conflicts. When the critical areas regulations conflict with the requirements of the city's Shoreline Master Program or other lawfully adopted local, state, or federal regulations, the most restrictive standards apply.
- F. Relationship to SEPA. These regulations constitute adequate mitigation of adverse or significant adverse environmental impacts on critical areas for the purposes of Chapter [17.84](#), Implementing the State Environmental Policy Act (SEPA).
- G. Limitations. Compliance with these regulations does not constitute compliance with other local, state, or federal regulations and permit requirements. The applicant is responsible for complying with all relevant requirements.

17.52.030 Designation and delineation of critical areas.

- A. The City of Mukilteo contains the following critical areas:
 - 1. Wetlands.
 - 2. Fish and wildlife habitat conservation areas.
 - 3. Frequently flooded areas.
 - 4. Geologically hazardous areas.
- B. Reconnaissance. The city may require an applicant to do a critical area reconnaissance any time there is reason to believe critical areas or their buffers may be present on a property. The reconnaissance must be conducted by a qualified professional and result in clear written findings about the presence or absence of critical areas.
- C. Designating critical areas. Critical area designation and delineation is done based on performance standards, not maps. The criteria and characteristics that determine whether an area qualifies as a critical area are included in the definitions for each critical area found in Chapter 17.08.
- D. Mapping of critical areas. The actual location and extent of critical areas and their buffers must be determined by a qualified professional using the defined performance standards for each

critical area. However, the city maintains maps showing the approximate location and extent of known critical areas that can be used as a general guide. City maps are based on:

1. Federal Emergency Management Administration flood insurance rate maps.
 2. U.S. Geological Survey landslide hazard, seismic hazard, and volcano hazard maps.
 3. Washington Department of Natural Resources seismic hazard and slope stability maps.
 4. Washington Geologic Survey's Washington Geologic Information Portal.
 5. National Wetlands Inventory.
 6. Washington Department of Fish and Wildlife Priority Habitat and Species maps.
- E. Conflicts. In the event of a conflict between the city's maps and the location determined in the field by a qualified professional, the field determination shall control, except for areas of special flood hazard. In the event of a conflict between the boundary mapped on Federal Emergency Management Agency's "Flood Insurance Rate Maps" and actual field conditions, a letter of map change must be approved by FEMA.

17.52.040 Exemptions.

- A. Interpretation. When there is a question as to whether a particular activity is exempt, the director's determination is final.
- B. Avoiding impacts. Even when an activity is exempt, applicants must consider alternatives that avoid or minimize impacts. Exemption from the provisions of this chapter does not give permission to degrade a regulated habitat or ignore risks from natural hazards. Any alteration of a critical area that is not a necessary outcome of the exempted activity must be mitigated.
- C. Written notice required. No person may undertake exempt activities until they have provided the city written notification of their intent and given the city 30 days to confirm the activity is exempt.
- D. Exemptions. The following activities are exempt from critical areas regulations:
1. Emergency activities and utility repairs necessary to prevent an immediate threat to public health, safety, or property. The director may apply after-the-fact mitigation requirements for emergency repairs when necessary to ensure that the purpose of this chapter has been met.
 2. Vegetation management. Minor vegetation management activities such as invasive plant management, removing or trimming of dead or diseased vegetation, planting of native species, pruning that complies with city regulations, or removal of hazardous trees. Vegetation management must be done by hand when feasible and avoid soil compaction to the maximum extent practical. Hazardous tree removal must minimize adverse effects on ecosystem functions and surrounding vegetation and leave snag in place to the extent feasible.
 3. Work in drainage facilities. Mowing, maintenance, cleaning, excavation, or repair/replacement of flow control structures within existing swales, drainage ditches,

detention facilities, or landscape ponds. Such activities are limited to the existing footprint of the area or facility.

4. Transportation and utilities.

- a. Maintenance, operation, or reconstruction of existing streets, railroads, utilities, and associated structures, provided no new impervious area is added.
- b. The extension, expansion, repair, replacement, or relocation of a street, road, railroad, essential public facility, high-capacity transit facility, or necessary utilities that would not otherwise be feasible under the critical areas regulations. These projects are only exempt with advanced approval of a mitigation plan that uses best available science, results in a net improvement to critical area functions, and includes provisions for at least three years of monitoring and maintenance.

5. Structure maintenance. Normal maintenance and repair of structures.

6. Site investigation work. Disturbance necessary to prepare studies and application materials.

7. Educational activities. Activities such as field trips, bird watching, hiking, and interpretive signage, that will not have a significant effect on the critical area.

8. Construction of, or improvements to, utility facilities that are either within existing improved right-of-way, within existing impervious surface area, or designed in a manner that does not impact the function or value of the critical area (e.g., trenchless technology, boring, or tunneling).

9. Activities that are part of a forest practice governed under Chapter [76.09](#) RCW and its rules. This does not include Class IV Forestry licenses.

17.52.050 Standards applicable in all critical areas.

- A. No net loss. All development within a critical area or its buffer must ensure no net loss of critical area functions and values, with special consideration given to preserving or enhancing anadromous fish habitat.
- B. Best available science. Any reports prepared to determine whether the no net loss standard is achieved must rely on the best available science, consistent with the criteria established in WAC [365-195-900](#) through [365-195-925](#). Where there is significant uncertainty about the risk to critical area functions that cannot be resolved because of incomplete scientific information, a precautionary or a no-risk approach that strictly limits potential impacts must be used until the uncertainty is sufficiently resolved.
- C. Use of native growth protection areas (NGPAs).
 1. Applicability. All critical areas and their buffers, except floodplains, are designated as native growth protection areas (NGPAs).
 2. Maintenance. NGPAs must be kept clear of weeds, invasive plants, lawn clippings, junk, debris, or the like.

3. Fencing and signage.
 - a. Construction fencing and temporary signs noting the presence of a native growth protection area must be placed at the boundary of all NGPAs when there are clearing, grading, or excavation activities within 50 feet.
 - b. Permanent split rail fencing, or other physical barrier approved by the director, must be placed along the periphery of a NGPA with permanent signs (at least 800 square inches in size and spaced no more than 50 feet on center) that state, "Protected Area – Do Not Disturb. Contact City of Mukilteo regarding restrictions."
 4. Recording. Private property with critical areas must record the presence of the NGPA through one of the following methods:
 - a. Placing the NGPA in a separate tract held in equal and undivided interest by the owners of all lots in a subdivision, with the location and limitations of the NGPA shown on a plat and recorded with the Snohomish County assessor's office.
 - b. Identifying the location and limitations of the NGPA in an easement or land use binder that is recorded with the Snohomish County assessor's office.
 5. Restrictive language. Documents recording the presence of a native growth protection area must include the following language: No clearing, excavation, or fill is allowed within a native growth protection area except that required for utility installation, removal of drainage course obstructions, removal of dangerous trees, or vegetation thinning determined necessary by a certified arborist to be necessary for the benefit of the woodlands.
- D. Mitigation sequencing. Applicants proposing activities in or near critical areas must demonstrate that they have followed this mitigation sequence in order of priority, only moving on to the next option in the sequence when they have implemented the previous option to the maximum extent feasible:
1. Avoid. Do not take an action or parts of an action. To demonstrate that avoidance has been adequately assessed, applicant must specifically address the following considerations where applicable:
 - a. Alternative building locations on the property.
 - b. Adjustments to the project footprint and orientation.
 - c. Modification of non-critical area setbacks, where feasible, as a first option before encroaching into critical areas or their buffers.
 - d. Multi-story design or alternate building design.
 2. Minimize. Limit the degree or magnitude of the action with design changes, reduced scope, or the use of impact-reducing techniques and methods.
 3. Repair. Restore any damaged areas to their original or better condition.
 4. Manage. Reduce or eliminate the impact over time through preservation and maintenance practices.
 5. Compensate. Provide equivalent or greater ecological functions and values.
 6. Monitor. Track impacts over time and take corrective action if needed.

17.52.060 Reasonable use provisions.

- A. Reasonable use of property guaranteed. When strict application of the city's critical area standards would deny all reasonable use of a property, a reasonable use exception may be granted.
- B. Criteria. To be eligible for a reasonable use exception, an applicant must demonstrate:
1. The application of the critical areas regulations would deny all reasonable economic use of the property.
 2. There is no other reasonable economic use of the property that would have less adverse impact on the critical area.
 3. The proposed impact to the critical area is the minimum necessary to allow for reasonable economic use of the property.
 4. The inability to derive reasonable economic use is not the result of the applicant's actions or that of a previous property owner, such as by segregating or dividing the property and creating an undevelopable condition.
 5. The proposal does not pose an unreasonable threat to the public health, safety, or welfare on or off the development proposal site.
 6. The proposal will result in no net loss of critical area functions and values.
- C. Reasonable use exceptions on residential properties. In addition to the criteria that apply to all reasonable use exceptions, the following standards apply on residential properties:
1. Maximum footprint. The footprint of the structure is no larger than 2,500 square feet for single-story structures and no larger than 1,800 square feet for multi-story structures.
 2. Driveway. Driveway is a maximum of 20 feet wide and designed to be the shortest and most direct reasonable route to the house.
 3. Setbacks. Building setbacks are at least 50% percent of the required zoning setback.
 4. Undisturbed areas. At least 70% of the lot will remain undisturbed. Developed yard areas, structure footprints, driveways, and a 5-foot access buffer around all structures for maintenance are included in the disturbed area calculations.
 5. Yards. Developed yard areas are only allowed if they do not encroach into a critical area or buffer.
 6. Review authority. Reasonable use requests on residential properties can be approved administratively.
- D. Reasonable use exceptions on commercial, mixed-use, or industrial properties. In addition to the criteria that apply to all reasonable use exceptions, the following standards apply on commercial, mixed-use, or industrial properties:
1. Setbacks. Building setbacks are at least 50% percent of the required zoning setback.
 2. Parking. Required parking may be reduced by up to 40% if applicant can demonstrate that the reduction would not negatively affect the business or create spillover parking onto city streets.

3. Review authority. All reasonable use exceptions on commercial, mixed-use, or industrial properties require approval by the hearing examiner.

17.52.070 Enforcement.

- A. Stop work orders. Violations of critical areas regulations will result in the immediate issuance of a stop work order that will remain in effect until the violation is corrected and properly mitigated.
- B. Procedures. Violations of the critical areas regulations (Chapters [17.52](#) through [17.52D](#)) will be enforced through the procedures set forth in Title [18](#), Land Use Enforcement.
- C. Civil infractions. Violations of this chapter also constitute a civil infraction as outlined in Chapter [1.32](#), General Penalties.
 1. Generally, the first violation is a Class III civil infraction and the second offense is a Class II civil infraction.
 2. Class I civil infractions will be used for any repeat violations within a one-year period and for those the Director determines to be egregious in nature.

EXHIBIT E

Repeal and replace MMC Chapter 17.52A, Geologic Sensitive Area Regulations

Chapter 17.52A GEOLOGICALLY HAZARDOUS AREAS

Sections:

17.52A.010 Purpose.

17.52A.020 Applicability.

17.52A.030 Required reports and plans.

17.52A.040 Vegetation management.

17.52A.050 Development standards.

17.52A.010 Purpose.

The purpose of this chapter is to regulate development activities in or near geologically hazardous areas to reduce risks to life and property and prevent erosion at both the parcel and system scale.

17.52A.020 Applicability.

This chapter applies to any development activity within 50 feet of steep slopes or landslide hazard area, unless specifically exempted in Chapter 17.52.

17.52A.030 Required reports and plans.

A. Geotechnical report.

1. Required. When proposing structures within 50 feet of a steep slope or landslide hazard area, applicants must submit a geotechnical report prepared by a qualified professional. The Building Official has discretion to waive or modify report requirements if the information is not needed to accomplish the purpose of this chapter.
2. Contents. The report must include:
 - a. Project description.
 - b. Site plan showing the location of the soil investigations.
 - c. Previous landslide activity in the vicinity, an assessment of the overall slope stability, and the anticipated effect of the development on the slope over time.
 - d. Grading details, including: total amount of cut and fill, recommended procedures, fill placement, compaction criteria, temporary and permanent slope support, erosion control measures, wet weather limitations, and design criteria for any recommended corrective measures.

- e. A description of surface and subsurface hydrology together including any wetland, streams, springs, seeps, or ground water features, together with recommendations for addressing the impacts of those features in a manner consistent with the city's critical areas regulations.
- f. All ICC geotechnical requirements, including documentation to support any alternate setback proposals.
- 3. Expiration. Geotechnical reports are valid for five years. Reports older than five years at the time of permit submittal must be updated.
- B. Adherence to the recommendations required. All recommendations in required reports are considered conditions of approval. Failure to follow report recommendations will be considered a violation of permit conditions.
- C. Third-party review. The city may retain a qualified professional, at the applicant's expense, to review and confirm any findings in required reports.

17.52A.040 Vegetation management.

- A. Altering or removing vegetation on a steep slope or within a landslide hazard area is prohibited, with the following exceptions:
 - 1. Pruning. Pruning methods consistent with Chapter 17.59 are allowed.
 - 2. Removal of hazardous trees. Removal of hazardous trees is permitted when a certified arborist determines removal is needed to resolve a safety issue that cannot be eliminated through pruning or other methods. Ten vertical feet of stump must be left in place when removing trees 15 inches or greater DBH.
 - 3. Removal of alder, willow, and bitter cherry trees. These tree species may be removed when the stumps and roots are left in place and three deep-rooted bushes or ground cover such as ocean spray, snow berry, salal or evergreen huckleberry are planted around each stump.
 - 4. Removal of invasive species. Himalayan blackberry, Scot's broom, thistle and other similar invasive plants may be removed manually, provided there is minimal soil disturbance and the area is immediately be replanted with deep-rooted native shrub species such as Oregon grape, salal and evergreen huckleberry.
 - 5. Other modifications consistent with the Department of Ecology's "Vegetation Management: A Guide for Puget Sound Bluff Property Owners" may be approved by the director.
- B. Replanting required. Applicants proposing vegetation removal, other than authorized pruning or snagging of hazardous trees, must submit a replanting plan that includes plant quantities, locations, and the schedule for installation.

17.52A.050 Development standards.

- A. Site design. Structures and improvements must be located to avoid geologically hazardous areas wherever possible, minimize alterations to the natural contours, preserve the most sensitive portions of the site, maximize vegetation retention, and avoid increased risk to neighboring properties.
- B. Minimum setbacks from steep slopes that are part of a ravine or shoreline.

1. Human safety standard. Structures must be 40 feet from the top of a steep slope and 15 feet from the toe. Applicants proposing structures, including decks, closer than these standards must comply with the building setback and development recommendations in their geotechnical report.
2. Erosion reduction standard. All structures, except decks, must remain a minimum of 25 feet from the top of steep slopes that are part of a ravine or shoreline.
3. Exceptions.
 - a. Retaining walls. Retaining walls and other slope stability infrastructure are permitted in geologically hazardous areas when needed to remedy a safety issue or prevent damage to an existing structure. To be eligible for this exemption, a geotechnical report from a qualified professional is required and must contain a clear finding that the construction methods and project minimize slope disturbance as much as possible and will improve the long-term stability of the slope.
 - b. Utilities. When there is no practical alternative, utility lines and pipes may be constructed on steep slopes. Lines and pipes must either be located above ground and properly anchored and designed to continue to function in the event of an underlying slide or bored to a depth beneath potential slope failure. Stormwater pipes must be designed with high-density polyethylene and fuse-welded joints, or similar product that is technically equivalent.
- C. Stormwater. Runoff must be collected, detained, and released in accordance with the city's stormwater detention requirements. Concentrated stormwater runoff is not allowed to flow directly over a steep slope or impact a neighboring property.
- D. Seismic safety factors. Development must be designed to provide a landslide safety factor of at least 1.5 for static conditions and 1.1 for dynamic conditions, based on horizontal acceleration and the standards in the current adopted version of the International Building Code.
- E. Seasonal restrictions. Clearing and grading within the wet weather months is only allowed with director approval of a winter weather construction plan that uses current best management practices.
- F. Alternative designs. Development within geologically hazardous areas must meet the requirements above unless the director finds that an alternative design standard will provide greater long-term slope stability (without the need for regular or periodic maintenance).

EXHIBIT F

Repeal and replace MMC Chapter 17.52B, Wetland Regulations

Chapter 17.52B

WETLANDS

Sections:

17.52B.010 Purpose.

17.52B.020 Applicability.

17.52B.030 Required reports, plans, and sureties.

17.52B.050 Development outside wetlands and their buffers.

17.52B.060 Development inside wetland buffers.

17.52B.070 Development inside wetlands.

17.52B.010 Purpose.

The purpose of this chapter is to protect the functions and values of wetlands, including but not limited to:

- A. Maintaining water quality.
- B. Storing and conveying stormwater and floodwater.
- C. Recharging ground water.
- D. Providing important fish and wildlife habitat.
- E. Serving as areas for recreation, education, and aesthetic appreciation.

17.52B.020 Applicability.

- A. General. This chapter applies to any new activity within 50 feet of a wetland or its buffer, unless specifically exempted in Chapter 17.52.
- B. Limited applicability to existing development. Enhancement of wetlands or buffers degraded by development legally established before the adoption of these regulations is not required. Development and activities existing prior to the adoption of this ordinance may continue. Legally established impervious areas may be redeveloped without mitigation as long as the total square footage and location of impervious surface remains unchanged.
- C. Relationship to Fish and Wildlife Habitat Conservation Areas. Wetlands are also considered Fish and Wildlife Habitat Conservation Areas and subject to the regulations in Chapter 17.52C.

17.52B.030 Required reports, plans, and sureties.

- A. Adherence to the recommendations required. All recommendations in required reports are considered conditions of approval. Failure to follow report recommendations will be considered a violation of permit conditions.
- B. Wetland delineation and buffer analysis report.
 - 1. Required. When proposed development is within 50 feet of a wetland or its buffer, the applicant must submit a wetland delineation report prepared by a qualified professional in accordance with city requirements and best available science.
 - 2. Contents. The report must:
 - a. Identify the wetland classification based on the most current Washington State Department of Ecology wetland rating guidance.
 - b. Provide sufficient information for the city to establish the location and boundaries of both the wetland and its associated buffer. At a minimum, this must include field worksheets, map of test pit locations, and clear findings.
 - c. Analyze existing conditions and the city's standard buffers to determine if the standard buffer width is adequate to ensure no net loss of functions or if vegetation enhancements or expanded buffers are needed.
 - 3. Expiration. Wetland delineation reports are valid for five years. Reports older than five years at the time of permit submittal must be updated.
 - 4. Relationship to biological/habitat assessment report. Wetlands are also considered Fish and Wildlife Habitat Conservation Areas. Required wetland and biological/habitat delineations and assessments may be combined.
- C. Mitigation plan.
 - 1. Required. When a non-exempt development activity is located within a wetland or its buffer, the applicant must submit a mitigation plan prepared by a qualified professional.
 - 2. Contents. All mitigation plans must include:
 - a. Summary of the plan preparer's relevant experience and qualifications.
 - b. Project summary and drawings describing general project layout, construction timing sequencing, and grading and clearing limits.
 - c. Analysis of site characteristics and wetland/buffer functions as well as a description of expected impacts.
 - d. Proposed mitigation measures to ensure no net loss together with analysis of how mitigation sequencing was applied and documentation of best available science supporting the proposed mitigation.
 - e. Planting details, including species, quantities, locations, size, spacing, and density as well as plat protection and maintenance provisions to preserve existing vegetation.
 - f. Summary of required permits. A list of all required permits, including federal and state approvals.
 - g. Performance standards. The plan must identify measurable criteria to evaluate success of the mitigation and compliance with this chapter.
 - h. Provisions to ensure a qualified professional is on site during construction to ensure mitigation is installed in accordance with the approved plan and that a final report documenting mitigation completion is submitted to the city.
 - i. Contingency plan. The plan must identify corrective actions to be taken if monitoring shows performance standards are not being met.
- D. Monitoring program.
 - 1. Required. When a non-exempt development activity is located within a wetland or its buffer, a monitoring program is required.

2. Contents. The monitoring program must ensure the site is monitored for an adequate number of years to ensure performance standards in mitigation plan are met (minimum of five years for buffer impacts, minimum of ten years for wetland impacts).
 3. Annual reports. Annual monitoring reports consistent with best available science and Ecology guidance must be submitted to the city.
 4. Extended monitoring. If the site does not perform as expected, the city may extend monitoring in two-year increments until performance standards are met.
- E. Sureties and fees. To ensure compliance with mitigation and monitoring requirements, the city may require:
1. Performance surety. Mitigation must be completed before final project approval or Certificate of Occupancy. If weather prevents timely completion, a performance surety equal to 150% of the mitigation installation costs may be accepted, conditioned on work being completed within six months.
 2. Maintenance surety. A ten-year maintenance surety equal to 15% of the mitigation installation cost is required for all mitigation projects.
 3. Monitoring deposit. The city may charge a set fee to cover the city's costs to review the yearly monitoring reports and conduct site inspections to ensure the performance standards are met.
- F. Third-party review. The city may retain a qualified professional, at the applicant's expense, to review and confirm any findings in required delineations, reports, studies, or plans.

17.52B.050 Development outside wetlands and their buffers.

All new development within 50 feet of a wetland buffer must:

- A. Temporary protections. Put temporary, protective measures in place during construction to ensure that dust, debris, and runoff do not enter the wetland.
- B. Permanent protections. When a wetland or its buffer exists on a property, the applicant must record notice of wetland presence with the Snohomish County assessor's office in the form of an easement, land use binder, or separate plat tract held in common ownership. The document must identify the approximate location of the wetland and restrict the use of herbicides, pesticides, and similar contaminants within a wetland or its buffer.

17.52B.060 Development inside wetland buffers.

- A. Buffer widths. Buffer widths vary based on the category of wetland and the intensity of the proposed development. Land use impact categories are defined in Chapter 17.08.

Minimum Buffer Widths			
Wetland Category	Land Use Impact		
	Low	Moderate	High
Category I	150 feet	225 feet	300 feet
Category II	150 feet	225 feet	300 feet
Category III	75 feet	110 feet	150 feet
Category IV	25 feet	40 feet	50 feet

- B. Development Standards.
 1. General. Except as specified below or allowed through reasonable use approval, wetland buffers must be retained in an undisturbed condition.

2. Authorized activities. The following uses are allowed in the outer 25% of a buffer if they do not reduce wetland functions:
 - a. Viewing platforms and interpretive signage.
 - b. Pervious surface or boardwalk trails no more than five feet wide that are routed to avoid trees 18-inches or larger Diameter at Breast Height (DBH).
- C. Mitigation. Any impacts to wetland buffers must be mitigated at a one-to-one ratio to restore and preserve original functions.

17.52B.070 Development inside wetlands.

- A. Reasonable use required to alter. No alterations to wetlands or their buffers for non-exempt activities is allowed without reasonable use approval.
- B. Compensatory mitigation. All wetland and buffer impacts must be mitigated using the mitigation sequencing options in Chapter 17.52. Where impacts cannot be avoided or minimized, compensatory mitigation may be used.
 1. Mitigation ratios for temporary impacts. When a project causes temporary impacts that can be restored to pre-disturbance conditions within a single growing season, the mitigation ratio is 1:1. All other impacts must comply with the permanent impact ratios.
 2. Mitigation ratios for permanent impacts. All permanent wetland impacts must be mitigated at the ratios below. These ratios apply to in-kind, on-site creation or restoration of the same wetland category.

Permanent Impact Mitigation Ratios Based on Method			
Impacted Wetland	Create/Re-establish	Rehabilitate	Enhance/Preserve
Category I	4:1	8:1	16:1
Category II	3:1	6:1	12:1
Category III	2:1	4:1	8:1
Category IV	1.5:1	3:1	6:1

3. Mitigation ratios for wetlands with special characteristics. Impacts to the following wetlands with special characteristics require consultation with the Department of Ecology and Department of Natural Resources to determine mitigation ratios:
 - a. Category I forested
 - b. Bogs
 - c. Wetlands of high conservation value
 - d. Category I and II estuarine wetlands
 - e. Interdunal wetlands
 - f. Category I and II wetlands in coastal lagoons
4. Methods. Mitigation for wetland and buffer impacts must rely on a method below, which are listed in order of preference. A lower-preference form of mitigation should be used only if a qualified professional demonstrates to the director's satisfaction that all higher-ranked methods of mitigation are not viable.
 - a. Re-establish. Manipulate the physical, chemical, or biological characteristics of a site to return natural/historic functions and environmental processes to a former wetland.

- b. Rehabilitate. Manipulate the physical, chemical, or biological characteristics of a site to repairing natural/historic functions and environmental processes to a degraded wetland.
 - c. Preservation. The removal of a threat to, or preventing the decline of, wetlands by an action in or near those wetlands.
 - d. Enhance. Manipulate the physical, chemical, or biological characteristics of a wetland to heighten, intensify, or improve specific wetland function(s).
 - e. Create. Manipulate the physical, chemical, or biological characteristics of a site to develop a wetland on an upland where a wetland did not previously exist at an upland site.
5. Tools. Any of the following approaches may be used to provide compensatory mitigation:
- a. Wetland mitigation bank. Credits from a wetland mitigation bank certified through WAC Chapter 173-700 may be used to compensate for impacts when the project is within the service area of the bank and the proposed use of credits is consistent with both the replacement ratios of the city code and the terms and conditions of the bank's certification.
 - b. Permittee-responsible mitigation. On- or off-site mitigation funded and executed by the permittee may be used after a qualified professional demonstrates to the director's satisfaction that the mitigation would provide appropriate compensation for the proposed impacts. Mitigation sites should be in the same sub-drainage basin unless the applicant can demonstrate that a mitigation site in a different sub-drainage basin is ecologically preferable.
6. Mitigation timing. Compensatory mitigation projects must be completed prior to use or occupancy.

EXHIBIT G

Repeal and replace MMC Chapter 17.52C, Fish and Wildlife Habitat Conservation Areas (Outside Shoreline Jurisdiction)

Chapter 17.52C

FISH AND WILDLIFE HABITAT CONSERVATION AREAS

Sections:

17.52C.010 Purpose.

17.52C.020 Applicability.

17.52C.030 Required reports, plans, and sureties.

17.52C.040 Standards for all fish and wildlife habitat conservation areas.

17.52C.050 Additional development standards for streams.

17.52C.060 Additional development standards for riparian management zones.

17.52C.010 Purpose.

The purpose of this chapter is to protect areas that serve a critical role in sustaining healthy populations of plant and animal species. These regulations are intended to ensure that development is conducted in a manner that preserves essential habitat functions such as water quality, vegetation cover, habitat connectivity, food and shelter.

17.52C.020 Applicability.

- A. General. This chapter applies to any new development activity within a designated fish and wildlife habitat conservation area (FWHCA), unless the activity is specifically exempt from the city's critical areas regulations. FWHCAs are defined in Chapter 17.08.
- B. Limited applicability to existing development. Enhancement of FWHCAs degraded by development legally established before the adoption of these regulations is not required. Development and activities existing prior to the adoption of this ordinance may continue. Legally established impervious areas may be redeveloped without mitigation as long as the total square footage and location of impervious surface remains unchanged.
- C. Streams. These regulations apply to all F and N water types. Type S waters are shorelines of the state that are regulated by the city's Shoreline Master Program and [MMC 17B](#).
 - 1. Type F waters. Streams with continuous or seasonal flows that contain fish habitat.
 - 2. Type Np waters. Streams with continuous flows that do not contain fish habitat.
 - 3. Type Ns waters. Streams with seasonal flows that do not contain fish habitat.
- D. Riparian management zones (RMZs). These regulations apply within all riparian management zones.

1. The RMZ for Type F waters is based on the [Site Potential Tree Height at 200 years \(SPTH₂₀₀\)](#) as mapped by the Washington State Department of Fish and Wildlife. Where no SPTH data is available, the RMZ is 200 feet.
 2. The RMZ for Type N waters is 100 feet.
 3. The RMZ is measured from the outer edge of the Channel Migration Zone (CMZ) where one exists. Otherwise, the RMZ is measured from the Ordinary High Water Mark (OHWM).
- E. Priority habitats and species. These regulations apply to areas with which state or federally endangered, threatened, or sensitive species have a primary association. Priority habitats and species identified by WDFW's Priority Habitats and Species Program are also subject to provisions of Chapter 17.52B.
- F. Other. These regulations also apply to:
1. Areas identified by the Washington State Department of Natural Resources' Natural Heritage Program as having rare plant species and high-quality ecosystems.
 2. Commercial and recreational shellfish areas.
 3. Kelp and eelgrass beds.
 4. Herring, smelt, and other forage fish spawning areas.
 5. Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat.
 6. Waters of the state.
 7. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity.
 8. State natural area preserves, natural resource conservation areas, and state wildlife areas.

17.52C.030 Required reports, plans, and sureties.

- A. Adherence to the recommendations required. All recommendations in required reports are considered conditions of approval. Failure to follow report recommendations will be considered a violation of permit conditions.
- B. Biological/habitat assessment report.
1. Required. A biological/habitat assessment report is required when development activity is proposed within 50 feet of a fish and wildlife habitat conservation area.
 2. Standards. The report must use best available science and be prepared by a qualified professional who is a biologist with experience preparing reports for the relevant type of habitat.
 3. Contents. The report is intended to be an investigation of the project area to evaluate the quality and type of habitats present and make protection and mitigation recommendations. It must:
 - a. Provide a detailed description of vegetation on and adjacent to the project area.
 - b. List priority species on or near the project area, including:
 - Endangered, threatened, sensitive, or candidate species that have a primary association with habitat on or near the project area.
 - Vulnerable aggregations of species or animals susceptible to significant population declines within the specific area.

- Species of recreational, commercial, and/or tribal importance.
- c. Identify priority habitats on or near the project area, including any areas that have one or more of the following attributes:
 - Comparatively high fish and wildlife density.
 - Comparatively high fish and wildlife species diversity.
 - Important fish and wildlife breeding habitat.
 - Important fish and wildlife seasonal ranges.
 - Important fish and wildlife movement corridors.
 - Limited availability.
 - High vulnerability to habitat alteration.
 - Unique or dependent species.
- d. Discuss any relevant federal, state, or local special management recommendations for species or habitats located on or near the project area. For projects near eagle habitat, analysis of compliance with the federal Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act is required.
- e. Assess the direct and indirect potential impacts on habitat or water quality.
- f. Review how the proposed activity complies with mitigation sequencing requirements.
- g. Make recommendations for mitigation, management, monitoring, and maintenance measures, including any buffers or revegetation necessary to protect the integrity, functions and values of the affected habitat.
- h. Contain a clear finding that if recommendations are followed, the development activity will not result in any loss of ecological function for the fish and wildlife conservation area.
- 4. Expiration. Reports are valid for five years. Reports older than five years at the time of permit submittal must be updated.
- C. Monitoring program. When mitigation measures are required to ensure no net loss, a monitoring program must be established. The program must provide for at least five years of monitoring to ensure the mitigation performance standards are met. Monitoring programs must include:
 1. Performance standards.
 2. Metrics that will be reviewed in monitoring reports.
 3. Remediation measures if metrics aren't met.
 4. Schedule for submitting annual reports.
- D. Sureties. When mitigation measures are needed, an acceptable surety device must be put in place to ensure both performance and maintenance of the required mitigation.
 1. Performance surety. Mitigation must be installed prior to occupancy or final inspection. A performance surety equal to 150% of the cost of the mitigation project may be used to defer the timeline for installation by up to six months.
 2. Maintenance surety. A maintenance surety is required on all mitigation projects to ensure that the improvements survive for the established monitoring period. The surety must equal 15% of the cost of the mitigation project and reflect the term of the monitoring program.

- E. Third-party review. The city may retain a qualified professional, at the applicant's expense, to review and confirm any findings in required delineations, reports, studies, or plans.

17.52C.040 Standards for all fish and wildlife habitat conservation areas.

- A. Performance standards. Applicants must specifically address how each of the following performance measures were addressed, or why they were not considered applicable or feasible:
 - 1. Consider habitat in site planning and design.
 - 2. Locate buildings and structures in a manner that minimizes impacts.
 - 3. Integrate retained habitat areas into open space or landscaping.
 - 4. Consolidate habitat and vegetated open space in contiguous blocks.
 - 5. Locate habitat contiguous to other habitat areas, open space, or landscaping to create corridors.
 - 6. Use native species in any on-site landscaping or replanting areas.
 - 7. Emphasize heterogeneity and structural diversity of vegetation in landscaping.
 - 8. Remove or control any nonnative or undesirable species of plants and animals on site.
 - 9. Preserve significant trees, preferably in groups.
 - 10. Locate mitigation to create and maintain contiguous habitat corridors.
- B. Mitigation. Any impacts to fish and wildlife habitat conservation areas must be mitigated at a one-to-one ratio to restore and preserve original functions. Mitigation measures must be in place prior to issuing the Certificate of Occupancy.

17.52C.050 Additional development standards for streams.

- A. General. Except as otherwise specified or allowed, streams must be retained in an undisturbed condition.
- B. Allowed activities. The director may authorize the following activities when a report prepared by a qualified professional contains clear findings that there will be no net loss of stream functions or habitat value:
 - 1. Restoration activities. Restoration and enhancement activities to restore stream functions, provided a hydraulic project approval (HPA) is obtained from the Washington Department of Fish and Wildlife.
 - 2. Relocation. Stream relocation that is part of an approved mitigation or rehabilitation plan that has demonstrated that it will result in equal or better habitat and water quality and equivalent flow capacity.
 - 3. Culverts. Culverts for street and driveway crossings when fish passage will not be impaired and all of the following design criteria are met:
 - a. A hydraulic project approval (HPA) is obtained from the Washington Department of Fish and Wildlife.
 - b. Culvert exceeds diameter needed to accommodate flow.
 - c. Culvert includes gradient controls and creation of pools.

- d. Gravel substrate at least one foot deep is placed in bottom of culvert.
- C. Additional protections for anadromous fish.
 - 1. Work window limitations. All activities in streams used by anadromous fish must comply with the work windows designated by the Washington Department of Fish and Wildlife for the applicable species.
 - 2. Erosion control. Bioengineering methods or soft armoring techniques are required.
 - 3. Barriers prohibited. Structures that prevent the migration of salmonids are not allowed in water bodies currently or historically used by anadromous fish. Fish bypass facilities must be provided and designed to allow the upstream migration of adult fish and prevent harm to fry and juveniles migrating downstream.
 - 4. Fill restrictions. Fill is only allowed for water-dependent uses where all impacts can be properly mitigated.

17.52C.060 Additional development standards for riparian management zones.

- A. General. Except as otherwise specified or allowed, riparian management zones must be retained in an undisturbed condition.
- B. Allowed activities. The director may authorize the following activities when a report prepared by a qualified professional contains clear findings that there will be no net loss of stream functions or habitat value:
 - 1. Pedestrian trails, bridges, viewing platforms, and interpretative signage located to minimize disruption and avoid significant trees where feasible.
 - 2. Stormwater recharge facilities that benefit the habitat.
 - 3. Utility easements and underground utilities.
 - 4. Stormwater management facilities when no other location is feasible.
- C. Riparian management zone reductions.
 - 1. Obstructions. When a road or structure falls within an established RMZ and completely obstructs all ecosystem functions and values, the RMZ width may be modified to be the edge of the road or structure.
 - 2. Averaging with enhancements. RMZs may be reduced by up to 20% when:
 - a. The total amount of riparian habitat area on site remains unchanged.
 - b. No portion of the RMZ is less than 100 feet.
 - c. Significant enhancements (e.g., revegetating all on-site portions of a degraded RMZ to meet or exceed 80% native vegetation coverage, daylighting a stream, or removing a fish barrier to restore accessibility to resident or anadromous fish) are proposed.
 - d. A report prepared by a qualified professional contains clear findings that the result of the reduced areas and enhancements will provide equal or better protection of critical area functions and values than the standard zone width.
- D. Work window limitations. Any authorized work in a RMZ associated with a stream used by anadromous fish must comply with the work windows designated by the Washington Department of Fish and Wildlife for the applicable species.

EXHIBIT H

Repeal and replace MMC Chapter 17.52D, Flood Hazard Areas

Chapter 17.52D

FLOOD HAZARD AREAS

Sections:

17.52D.010 Purpose.

17.52D.020 Applicable regulations.

17.52D.010 Purpose.

The purpose of this chapter is to protect public health, safety, and property by managing development in flood hazard areas.

17.52D.020 Applicable regulations.

All new development fully or partially within a frequently flooded area (identified by the 100-year flood plain designations of the Federal Emergency Management Agency and the National Flood Insurance Program) is subject to the provisions of Chapter 15.12, Flood Damage Prevention.

Appendix 1: Best Available Science and Data Review

General (All Critical Areas)

- [Critical Areas Checklist, March 2024 \(PDF\)](#)
- [Complete Critical Areas Handbook \(PDF\)](#)
- [Summary of Critical Areas WAC Amendments, December 2018 \(PDF\)](#)

Wetlands

- [Wetland Mitigation in Washington State: Part 1 - Agency Policies and Guidance \(Version 2\)](#)
- [Wetland Guidance for Critical Area Ordinance \(CAO\) Updates: Western and Eastern Washington](#)
- [Washington State Wetland Rating System For Western Washington: 2014 Update, Version 2.0](#)
- [Wetland Mapping Resources](#)

Flood Hazard Areas

- [National Flood Insurance Program \(NFIP\)](#)
- [Frequently flooded areas: Critical Areas Ordinance](#)

Geologically Hazardous Areas

- [Geologic Information Portal](#)
- [Geologic Hazards and the Environment](#)
- Reviewed [DNR volcanic hazard map](#) to determine Mukilteo is not in a hazard area.

Fish and Wildlife Conservation Areas

- [Riparian Management Zones Checklist for CAO's](#)
- [Priority Habitat and Species List](#)
- [Priority Habitat and Species Maps](#)
- [Stream Habitat Restoration Guidelines](#)
- [Site-Potential Tree Height Mapping Tool](#)

- [Site-Potential Tree Height 200 \(SPTH-200\) Calculator](#)
- [Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications \(2020\)](#)
- [Riparian Ecosystems, Volume 2: Management Recommendations \(2020\)](#)
- [Puget Sound Kelp Conservation and Recovery Plan \(2020\)](#)
- [Threatened and Endangered Species List](#)
- [Land Use Planning for Salmon, Steelhead and Trout](#)

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