



Mountlake Terrace Planning Commission

Meeting Agenda

Monday, October 13, 2025, 7:00 PM

Mountlake Terrace City Hall, and via Telephone or
Teleconference

AGENDA

1. Call to Order
2. Attendance Roll Call
3. Approval of the 09/22/2025 Meeting Minutes
4. Public Comment (No person shall make personal attacks, or threatening remarks while addressing the Planning Commission, which disrupts, disturbs, or otherwise impedes the orderly conduct of the meeting. Any person who is engaging in conduct that disturbs, disrupts, or impedes the business of the Planning Commission or whose comments have been ruled out of order by the presiding officer, shall immediately cease and refrain from further improper comments or inappropriate conduct. All hate speech will be construed as threatening remarks.)
5. Presentation on Draft Critical Area Ordinance (Ch. 16.15) Update
6. Presentation on Draft Floodplain Management Ordinance (Ch. 16.18) Update
7. Director's Report
8. Miscellaneous Business by Call of Planning Commissioners
9. Adjournment

If the public would like to listen via telephone, call 1-253-215-8782. To watch the meeting online: 1) Go to <https://zoom.us/join>; 2) Enter meeting ID 832 0588 1330 and click "join" (you will be prompted to install the Zoom application if you do not already have it).

The City of Mountlake Terrace strives to provide access and services to all members of the public. Please notify the City at least one week prior to the event if reasonable accommodations are needed.

City of Mountlake Terrace Guidelines on Addressing the Planning Commission

The Planning Commission welcomes public input at the appropriate time during a public meeting. If you wish to address the Commission, you will be called on when your hand is raised and recognized by the Planning Commission Secretary.

Anyone who is addressing the Planning Commission will need to state their name and address at the beginning of their testimony, or comments.

To comment on an item not listed on the agenda, please address the Planning Commission at the time listed on the agenda as public comment.

To comment on an item listed on the agenda, please do so when the Chair calls for public comment during that particular agenda item.

Unless the Planning Commission Chair directs otherwise, comments on any item should not exceed five minutes per person.

To give public hearing testimony remotely (via Zoom), complete the Request Form for Remote Public Comment on the city's Planning Commission web page, at least 24 hours before the meeting. You will then be contacted via email to confirm your participation. Your reply to the confirmation email must be received by 4 p.m. on the day of meeting to be acknowledged that same evening. To give public hearing testimony at a meeting in-person, sign up at the meeting (no 24-hour notice required).

To submit written public hearing testimony, mail to/drop off at City Hall (23204 58th Avenue W., Mountlake Terrace, WA 98043) or email remarks to Shannon Olsen, solsen@mltwa.gov, no later than 4 p.m. on the public hearing date.

Purpose of Work Sessions

Occasionally the Planning Commission will discuss City topics in the form of a Work Session. The purpose of Work Sessions is for the Commission to collectively discuss ideas with each other, as well as observe staff presentations on selected topics. While the Planning Commission cannot take any official actions during a Work Session, the public is welcome to speak regarding an item before the Work Session begins. The public is always welcome to attend and monitor Planning Commission Work Sessions.

MOUNTLAKE TERRACE PLANNING COMMISSION
MEETING MINUTES



SEPTEMBER 22, 2025

1. Call to Order

Chair Bautista called the meeting to order at 7:03 pm.

2. Attendance Roll Call

Commissioners Present

Chair Bautista

Vice Chair Bettcher

Commissioner Stenson

Commissioner Thompson (via Zoom)

Commissioner Landess (via Zoom)

Commissioner Wu

Commissioners Absent

Commissioner Morgan

Consulting Staff

ECONorthwest consultant Mackenzie Visser

City Staff Present

Community and Economic Development Director Christy Osborn

Planning Commission Secretary Shannon Olsen

3. Approval of the 09/08/25 Meeting Minutes

The 9/8/25 meeting minutes were accepted as presented.

4. Public Comment (No person shall make personal attacks, or threatening remarks while addressing the Planning Commission, which disrupts, disturbs, or otherwise impedes the orderly conduct of the meeting. Any person who is engaging in conduct that disturbs, disrupts, or impedes the business of the Planning Commission or whose comments have been ruled out of order by the presiding officer, shall immediately cease and refrain from further improper comments or inappropriate conduct. All hate speech will be construed as threatening remarks.)

None.

5. Review of Housing Action Plan Matrix

ECONorthwest consultant Mackenzie Visser presented on this topic to include meeting purpose, Housing Action Plan (HAP) context and organization, actions overview and breakdown, discussion of near and mid-term actions with Planning Commission, and next steps.

Visser and Community and Economic Development Director Christy Osborn responded to questions and comments from Planning Commission.

6. Director's Report

Community and Economic Development Director Christy Osborn presented on this topic to include updates on critical areas ordinance work especially frequently flooded areas.

Osborn responded to comments and questions from Planning Commission.

7. Miscellaneous Business by Call of Planning Commissioners

Commissioner Stenson requested to be absent on November 10th. **Motion** to excuse Stenson passed 6-0.

8. Adjournment

Meeting adjourned at 9:16 pm.

These minutes are subject to approval at the next Mountlake Terrace Planning Commission meeting.



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Critical Area Ordinance Update

Planning Commission Work Session: October 13, 2025

Sara Pizzo, AICP, Senior Planner
Community and Economic Development

PURPOSE

- Review specific Critical Area code changes proposed by staff
- Gather questions and concerns from Planning Commission
- Discuss next steps



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AGENDA

- Council Goals
- Subject Summary
- Key topics/supporting information and graphics
- Timeline
- Questions and Discussion



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COUNCIL GOALS

Environmental Sustainability and Resiliency

- Minimize climate impacts while protecting vulnerable populations
- Plan for city-wide resilience
- Safeguard water quality and critical areas
- Collaborate regionally for environmental sustainability.



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SUBJECT SUMMARY

- Growth Management Act (GMA) requires all cities and counties to adopt and regularly update development regulations that protect critical areas.
- Updating Critical Area regulations aligns with the Environmental Element of the Vision 2044.
- Updates are required to be adopted by the end of 2025.

5 Types of Critical Areas

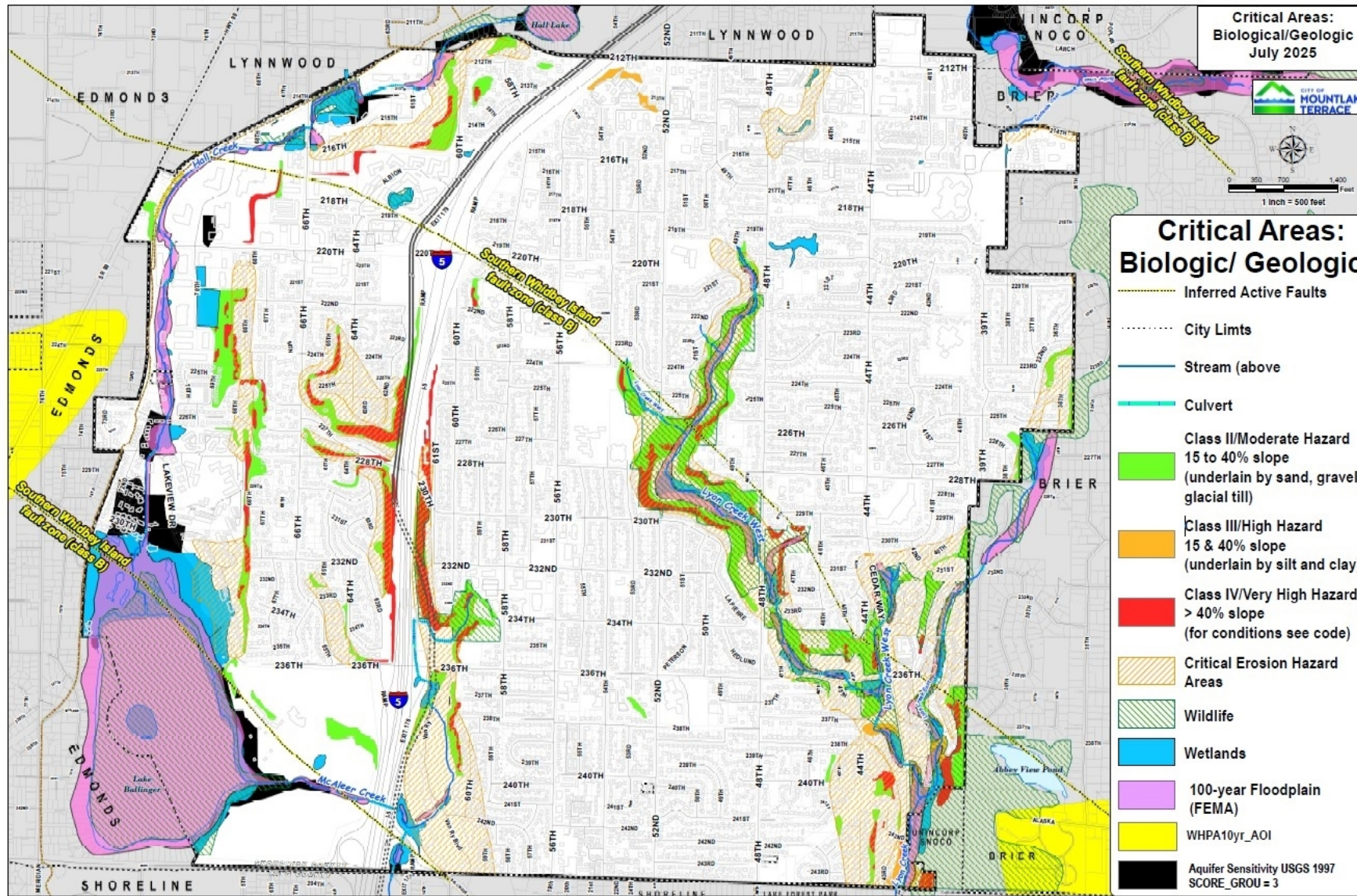
1. Wetlands
2. Areas with critical recharging effect on aquifers used for potable water
3. Frequently flooded areas
4. Geologically hazardous areas
5. Fish and wildlife habitat conservation areas

It can be costly, or even impossible, to replace critical area functions and values once they are lost.



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CRITICAL AREA MAP



This tool serves as an indicator map for:

- where critical areas may be located
- where critical area regulations apply



GENERAL PROVISION UPDATES

Citation	Current code	Proposed	Justification
Applicability 16.15.020(E)(3) Proximity to streams, wetlands, waterbodies	Critical Area regulations apply to areas within 200 feet upland a stream, wetland, or waterbody not otherwise regulated by 16.10 MTMC	Critical Area regulations apply to areas within 300 feet upland a stream, wetland, or waterbody, within a channel migration zone or ordinary high water mark , not otherwise regulated by 16.10 MTMC.	Consistency with GMA requirements
Applicability 16.15.020(E)(7) CARAs	No provisions related to critical aquifer recharge areas	A distance equal to or less than two hundred (200) feet from a critical aquifer recharge area.	Consistency with GMA requirements
Exempt Activities 16.15.100(B)(5) Development within physically separated and functionally isolated wetland or stream buffers	Development proposals within functionally isolated wetland or stream buffers	Minor changes to provide clarity on what this means and examples of what does and does not count as an isolated buffer.	Clarity
Exempt Activities 16.15.100(B)(14) Minor conservation and enhancement	Minor conservation and enhancement of critical areas that do not alter the location, dimensions or size of the critical area or buffer and result in improvement of the critical area functions and values, including the removal of noxious weeds or invasive vegetation, pursuant to MTMC 16.15.115.	Conservation and restoration activities that clearly demonstrate net ecological gain are exempt from the provisions of this chapter, provided the conservation and restoration activities are not actions taken for mitigation purposes.	Current language may unintentionally limit beneficial actions. Restrictions are removed to avoid deterring restoration efforts. For example, restoration efforts that increase the size of critical area wouldn't be allowed under current language.



GENERAL PROVISION UPDATES

Citation	Current code	Proposed	Justification
Exempt Activities 16.15.100(B)(15) Trees and vegetation maintenance	Allowances for maintenance of vegetation and trees and emergency removals. No mention in this section of noxious weeds/invasive vegetation	Include removal of noxious weeds and invasive vegetation in this section consistent with current code	Provides clarity with existing code.
Exempt Activities 16.15.100(B)(16) Provisions for active or imminent hazard trees	Provisions speak to tree removals only . Vague language about getting documentation from a qualified professional .	Prioritizes conversion to a snag, protects nearby trees/vegetation , specifies that an arborist must provide documents with justification.	WDFW recommended changes
Exempt Activities 16.15.100(B)(17) Activities within improved Right-of-Way	Allows ROW activities in critical areas except altering a wetland or watercourse. There are no requirements to buffer around affected ROW or to retain native vegetation and replant disturbed areas.	Adds requirements to buffer around affected ROW or to retain native vegetation and replant disturbed areas.	Best practice recommended by Facet
Nonconformances 16.15.105 *New section*	No critical area specific nonconforming codes exist	(See next slide)	Clarity



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NONCONFORMANCES

New section 16.15.105

- Legal uses and existing structures in existence on effective date of ordinance that does not meet buffer or building setbacks for any designated critical area is legal nonconforming.
- Legal nonconforming status applies to applications vested prior to the effective date of the ordinance and does not meet buffer or setback requirements for any designated critical area.
- Legal nonconforming use or structures may be maintained or repaired as long as previously approved structure footprint or impervious area are not increased.
- Legal nonconforming use or structure damaged or destroyed in fire or calamity may be restored and resumed unless abandoned for a continuous 6 months.
- Lawns can be mowed and maintained but not expanded into buffers or critical areas.
- Non-native vegetation can be maintained by not expanded into buffers or critical areas.



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GENERAL PROVISION UPDATES

Citation	Current code	Proposed	Justification
Trees and vegetation – Activities and Standards 16.15.115	- Does not allow for altering the location, dimension or size of critical area or buffer; - Requires noxious weeds and invasive vegetation to be removed by hand labor; No timeline on when areas cleared of noxious weeds and invasive plants need to be replanted to stabilize soil; - Provisions for hazard trees within the section regulating healthy trees	- Removes restrictions and requires demonstration of net ecological gain; - Allows removal of noxious weeds and invasive vegetation to minimize disturbance but does not limit types of tools that can be used. - Replanting required within 30 days; - Hazard tree information removed from Healthy tree section and updated in hazard tree section to prioritize wildlife snag conversions.	- Do not want to deter restoration efforts that may increase buffer sizes - Limiting noxious weed and invasive vegetation removal to hand tools is not practical or the most effective. - Time limits are easier to enforce and ensure slope stability occurs in a timely fashion - Reorganization for clarity and prioritizes maximize ecological functions
Critical area review – Preliminary assessment. 16.15.160	Staff determines if critical areas appear to be present and whether their may be an impact; four options and sets of criteria for staff to review.	Very similar to existing code but reduces staff written determination to three options to simplify for implementation.	Simplifies implementation
Critical area reports 16.15.200	Mitigation language is focused on preventing and mitigating impacts to critical area.	Strengthens language to require applicant to demonstrate that all options that would have avoided the impact altogether were considered as the first option.	WDFW recommended to ensure applicants adequately fulfill the critical area impact avoidance step.
Mitigation Preferred sequencing and location 16.15.210	Could be interpreted that mitigation sequencing is optional.	Update title to remove “Preferred.” Compensatory mitigation is only allowed if critical area function and values can be replaced and prohibits mitigation in CARAs. Adds monitoring requirement.	Mitigation cannot come across as optional, and the first step is to prove the applicant tried to avoid impact per best available science and Ecology guidance. DOH does not allow mitigation for CARAs.

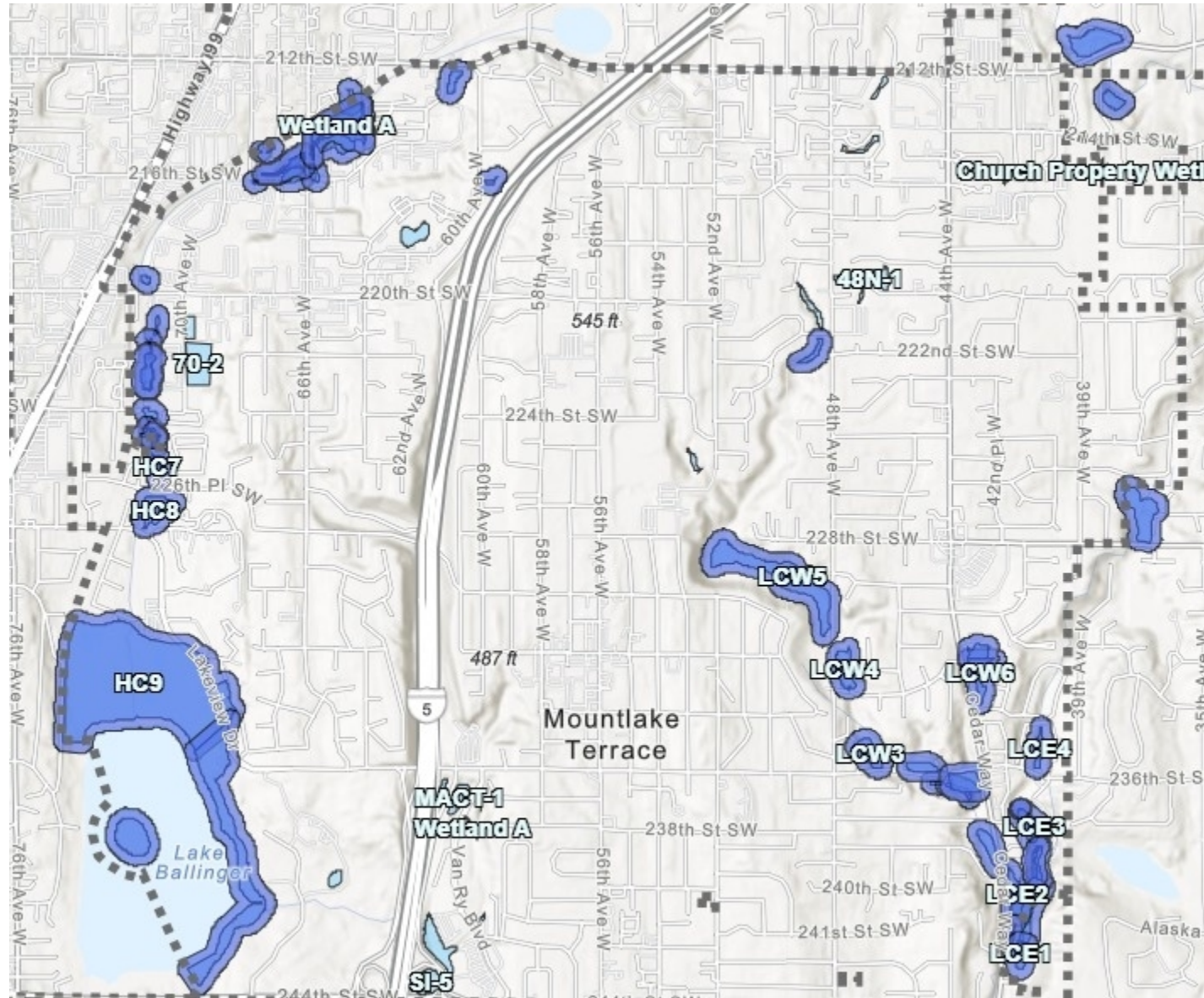
GENERAL PROVISION UPDATES

Citation	Current code	Proposed	Justification
Signs and Fencing 16.15.260	Requirements are all text based and no specific standard across the city for sign and fence aesthetic.	Images added and fencing standard detail added for consistent look across the City.	Uniformity across the City
Variances 16.15.350	Weak code language allowing for deviations from development standards, allowed uses, exceptions and exemptions.	Strengthened language aligned with BAS- based critical area protections within the variance section.	BAS consistency; *The City could also consider removing the variance section from the Critical Area code.



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WETLANDS



WETLANDS - PROPOSED UPDATES



Added Ecology recommended language that wetland buffers must be vegetated with native plants appropriate to the ecoregion and if this is not the case, buffers must be planted accordingly or widened to ensure adequate buffer functions are provided. 16.15.400(F)



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WETLANDS - PROPOSED UPDATES

- Updated Wetland Buffer Widths for standard buffers without minimization measures for low habitat score

Standard Buffer (without minimization measures and habitat corridor) Habitat Score Low (3-5)			
Wetland Category	Existing	Proposed	Difference
1	75 feet	100 feet	+25 feet
2	75 feet	100 feet	+25 feet
3	60 feet	80 feet	+20 feet
4	50 feet	N/A	-50 feet

- Required increased buffer width by 50% where slopes greater than 30% exist (Ecology guidance)
- Allowances for buffer width reductions removed because not supported by BAS or Ecology

WETLANDS - PROPOSED UPDATES

- New Conditions section to add more specific implementation language for buffer width standards aligned with Ecology guidance
 - Wetlands with 6+ Habitat scores have habitat corridor protection requirements of 100 feet and connect wetlands to other valuable habitat areas. *(This is more applicable in larger or rural jurisdictions).*
 - Wetland with 5 or less habitat scores only require mitigation measures listed in Table 2 (existing).
- Building setbacks from wetland buffers
 - No longer allowing uncovered decks in the wetland building setback area to be consistent with existing code language; only building overhangs up to 24" and impervious surfaces allowed in building setback (stormwater regs apply)
- Exemptions for legally nonconforming established buffers with conditions

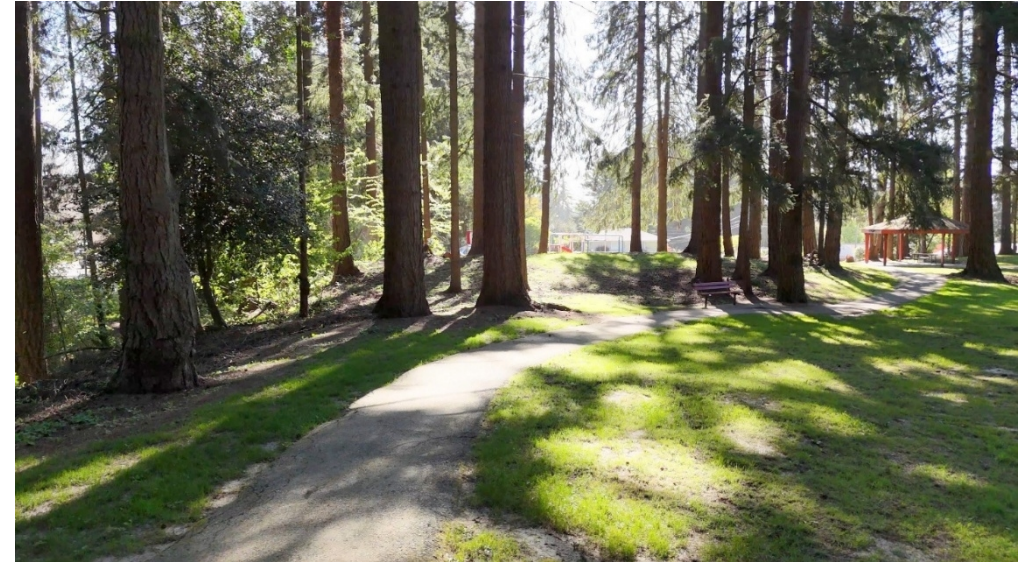
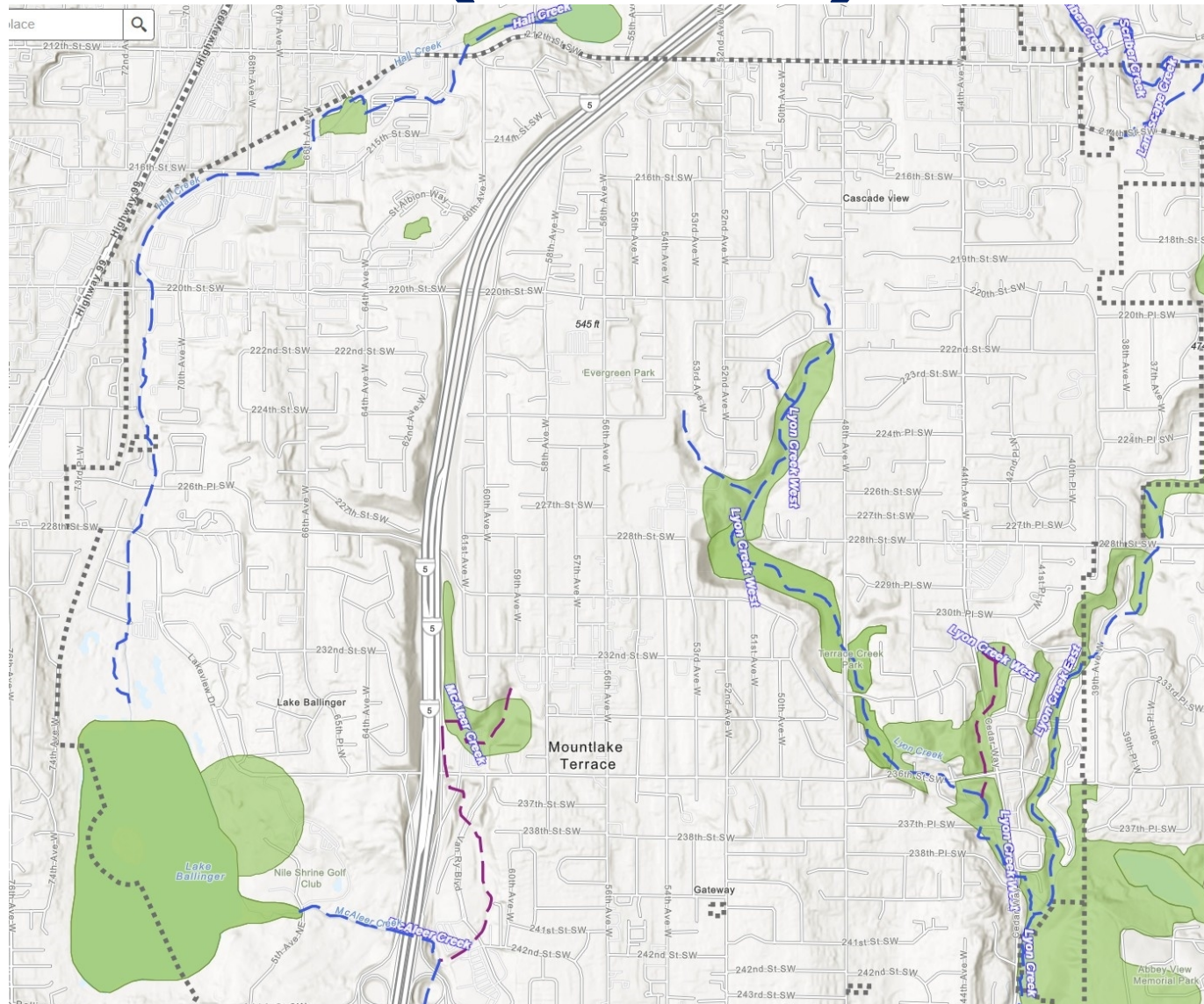
WETLANDS - PROPOSED UPDATES

- Tightened up regulations so that alterations to any category wetland is only allowed through a variance and/or a reasonable use exception process rather than an administrative approval process.
- When a Hearing Examiner allows an alteration, compensatory mitigation is required:
 - Wetland Mitigation Ratios—Ratios updated to match Ecology guidance and provide mitigation method preference order with definitions
 - HE may consider alternative types of mitigation/resource tradeoffs allowed based on BAS Credit-debit method added



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FISH AND WILDLIFE CONSERVATION AREAS (FWHCA)



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FWHCA - PROPOSED UPDATES

General

- Moved Steams section into FWHCA section
- Updated FWHCA definition
- Updated classifications to be consistent with WAC 365-190-130 and to ensure consistent implementation is practical
 - Removed “primary” and “secondary” – only one FWHCA category
- Added language to retain City’s authority to determine buffers
- Added provision to exempt functionally disconnected buffers
- Alterations not permitted without reasonable use exemption and/or variance
- Mitigation plans should be implemented prior to disturbance; or immediately after disturbance; timed to reduce impacts to flora & fauna
- Maintenance and monitoring is now required.



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FWHCA - STREAMS

Streams

- Two approaches for regulations:
 1. DNR's Water typing system (*MLT currently uses this method*)
 - Flow volume, fish use, accessibility, seasonality, presence of salmonids
 2. Site Potential Tree Height (SPTH₂₀₀) & Riparian Management Zones (*new WDFW's BAS*)
 - All streams have equal importance
 - Protection is based on soil type and associated dominate tree species



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FWHCA – STREAM BUFFER OPTIONS

Retain current buffers

- Type F is 100 feet, +50 if threatened or engaged species present
- Type Np is 50 feet
- Type Ns is determined based on technical information
- Building setbacks are 15 feet

Option 2 (minor change):

- Increase Type F to 125 feet
- Increase both Type N to 75 feet
- 10 foot building setback

Option 1 (moderate change):

- Increase Type F to 150 feet
- Increase both Type N to 100 feet
- 10 foot building setback

Option 3 (major change- SPTH₂₀₀):

- All streams:
 - Minimum 102 feet
 - Maximum 231 feet

FWHCA – STREAM BUFFER OPTIONS

Option	Pros	Cons
Retain existing: Type F 100 feet Type N 50 feet 15-foot setback	• Familiar and predictable • Minimal regulatory change • Easier transition to OHWM baseline	• Inconsistent with WDFW SPTH guidance • Under protects stream functions • Falls short of ecological function targets • Impacts 223 parcels
Minor change (option 2): Type F 125 feet Type N 75 feet 10-foot setback	• Improves habitat function for Type N streams • Moves closer to BAS compliance • Moderate impact of development	• Still below SPTH average of 173 feet • May under protect high SPTH corridors • Impacts 340 parcels

FWHCA – STREAM BUFFER OPTIONS

Option	Pros	Cons
Moderate change (option 1): Type F 150 feet Type N 100 feet	• High ecological function across all stream types • Closely aligns with SPTH averages • Retains stream classification distinctions	• Impacts 354 parcels
Major change (option 3): All streams Minimum 102 feet Maximum 231 feet	• Fully aligned with BAS and WDFW Vol. 1 & 2 • Highest ecological benefit • Targets function by site	• Requires extensive mapping & review • Impacts 412 parcels • Limits infill/redevelopment as mandated by PSRC under GMA (Vision 2044) • 17 parcels that are no longer regulated

FWHCA - PROPOSED UPDATES

Staff recommends Option 1

- This proposal meets WDFW minimum requirements

Water Type	Description	Existing Buffer / Building Setback	Proposed Buffer / Building Setback	Difference
S (Shoreline)	Shoreline of the state (per RCW 90.58.030)	150 / 15 feet	See 16.10 MTMC	Covered by Shoreline regulations
F (Fish)	Defined channel and periodically inundated areas	100 / 15 feet	150 / 10 feet	+50 / -5 feet
Np (non-fish)	Perennial	50 / 15 feet	100 / 10 feet	+50 / -5 feet
Ns (non-fish)	Seasonal	Determined based on review of technical info	100 / 10 feet	Dependent / -5 feet

FWHCA - PROPOSED UPDATES

Stream Buffer Areas and Setbacks

- Allows building overhangs and impervious surface is building setback consistent with wetland buffer standards
- Improved how to identify the stream buffer edge
- Requires stream buffers to be vegetated with native plants from the ecoregion, re-planted with such, or buffer widths shall be increased.
- Exemptions for functionally isolated buffers
- Exemptions for legally nonconforming established buffers with conditions
- Requires enhancement measures a development/redevelopment site containing a stream or buffer (currently only optional)
- Buffer averaging for streams no longer allowed to prevent net loss of ecological function
- Removed provision allowing buffer reductions for commercial redevelopment sites based on economic viability

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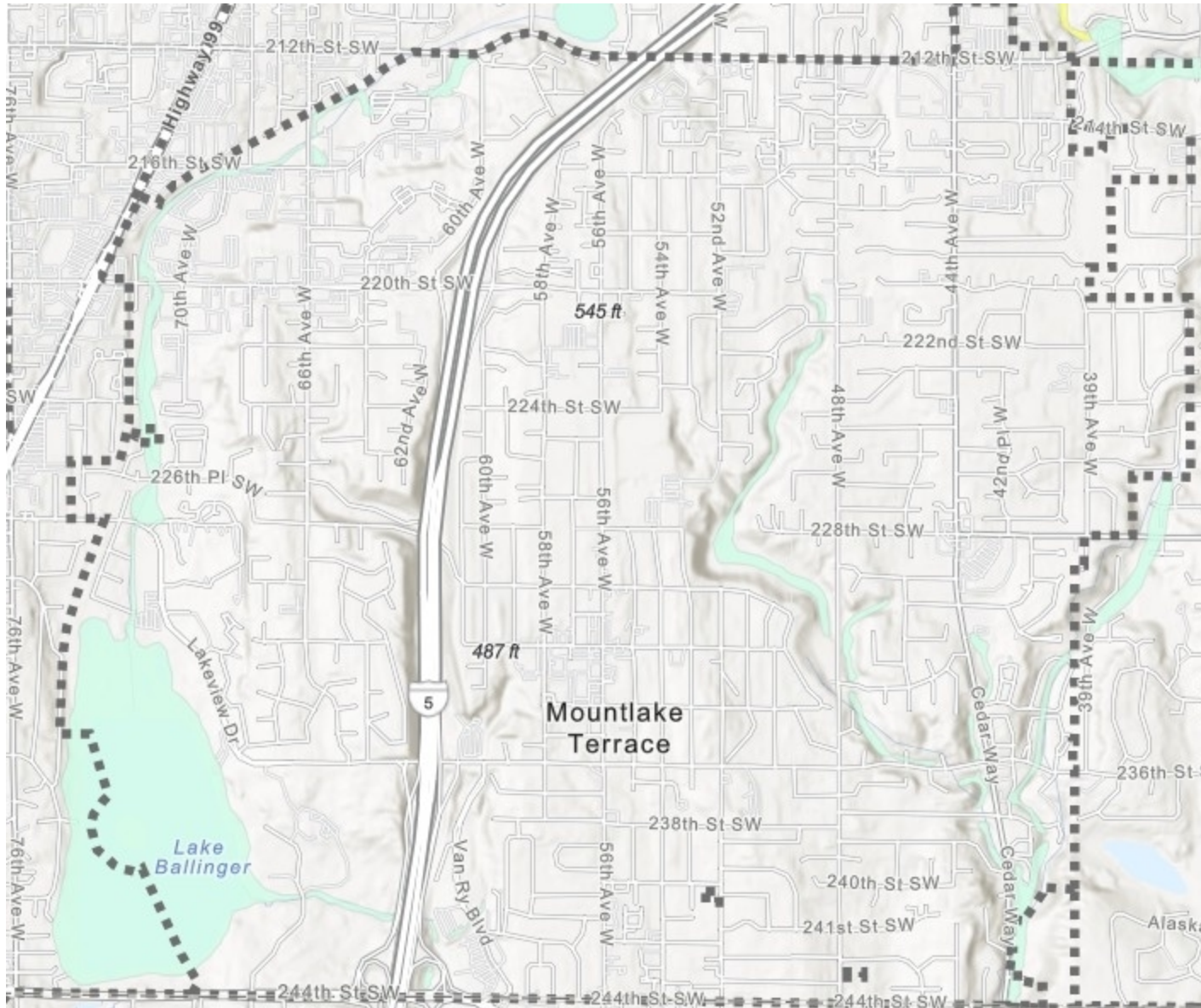
GEOLOGICALLY HAZARDOUS AREAS - PROPOSED UPDATES

- Updated classification definitions
- Updated landslide hazard susceptibility factors to be consistent with WAC 365-190-120
- Added a slope delineation diagram to support implementation of slope calculations
- Require a cumulative impact assessment as part of the hazard analysis within critical area report



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FREQUENTLY FLOODED AREAS



FREQUENTLY FLOODED AREAS - PROPOSED UPDATES

Frequently Flooded Areas

- Habitat assessment required for projects within floodplains to understand potential effects on federally-listed endangered species
- Flood storage volumes shall not be decreased by a project
- Flood base elevations shall not be increased by a project



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CRITICAL AQUIFER RECHARGE AREAS (CARAS)

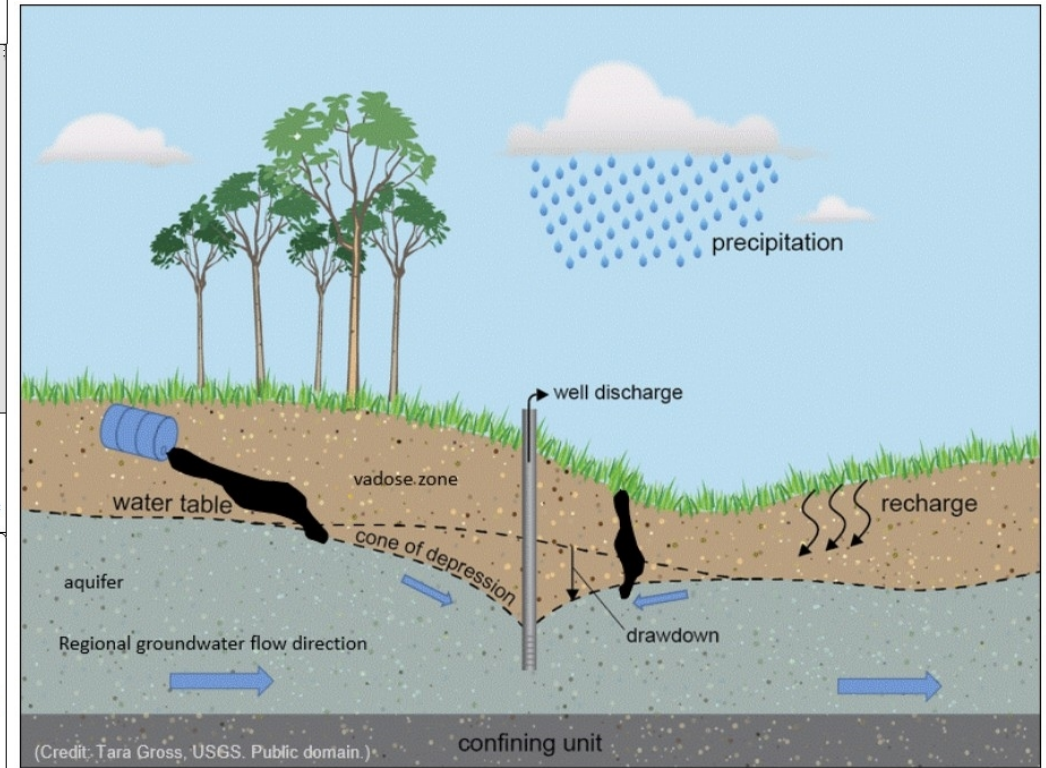
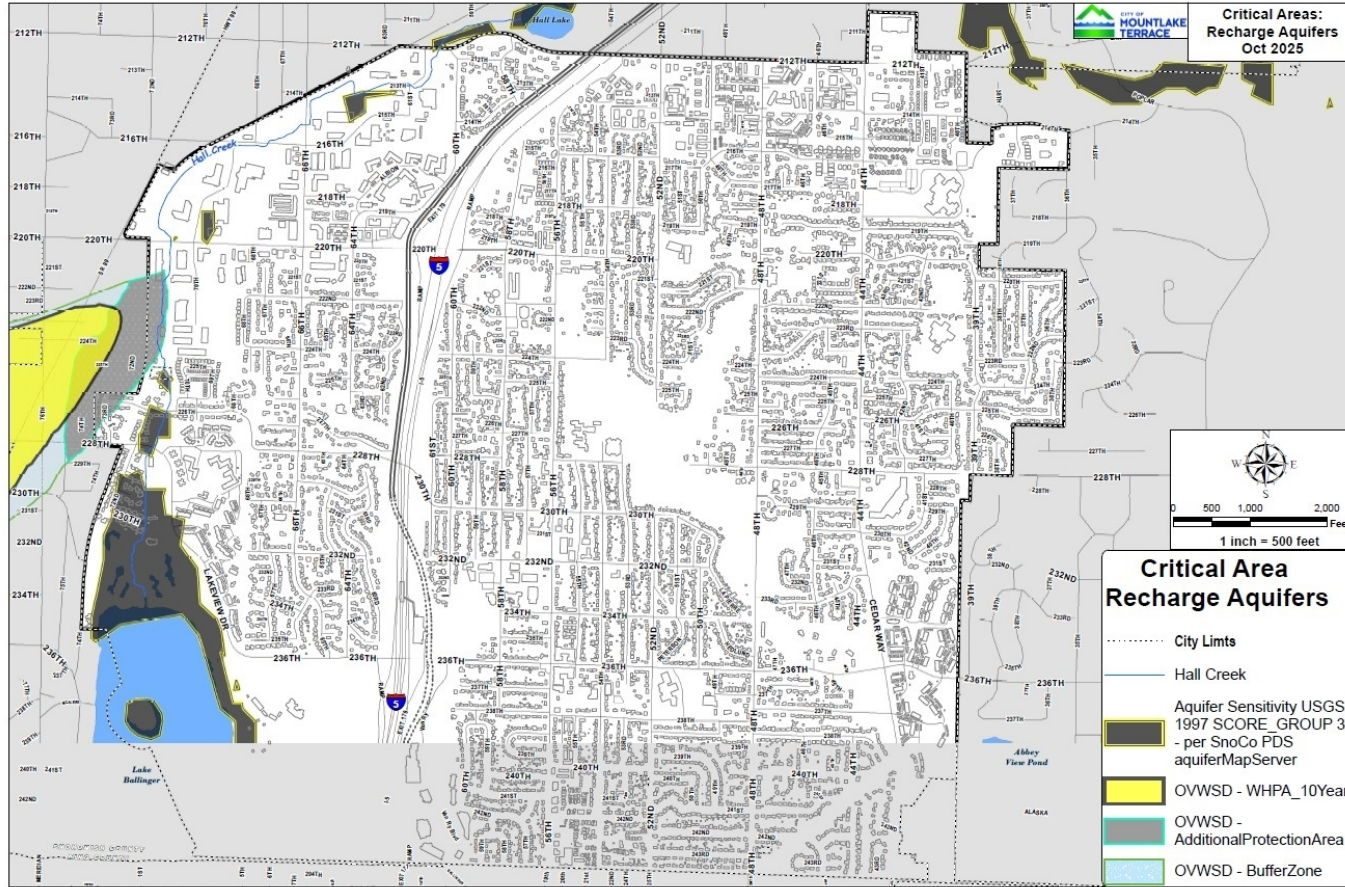


Figure 3: Cross-section illustration of groundwater flow and contaminant paths to a well.

PC: Dept of Ecology



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CARAS - PROPOSED UPDATES

Critical Aquifer Recharge Areas (CARAS)

- Update classification to be based on “susceptibility” instead of “significance”
- Include wellhead protection areas as a type of CARA
- Add CARAs to the Critical Areas Map
- Listed types of uses that are regulated (and prohibited) in CARAs
- Updated standards and criteria for alteration or development of a CARA
- Critical Area Report Requirement updates
 - Hydrogeologic report required by a geologist with licensing in hydrogeology
 - Require critical area reports to include wellhead protection information, where present
- Mitigation Planning section removed as compensatory mitigation is not available for CARAs because no degree of degradation to an aquifer is allowed



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DEFINITIONS



- Removed terms no longer in the CAO
- Added new words/phrases
- Updated existing definitions to meet BAS, definitions per state law, or to provide clarity for implementation



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DISCUSSION & QUESTIONS



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Thank you





FACET

Critical Areas Ordinance Update

Best Available Science Review

MOUNTLAKE TERRACE

JUNE, 2025

Prepared for:

City of Mountlake Terrace
Department of Community and Economic Development
23204 58th Ave W
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Facet Number: 2501.0517



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The information contained in this report is based on the application of technical guidelines currently accepted as the best available science. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state, and federal regulatory authorities. No other warranty, expressed or implied, is made.

Acronyms and Abbreviations

BAS	Best Available Science
BMP	Best Management Practices
CAO	Critical Areas Ordinance
CARA	Critical Aquifer Recharge Area
Commerce	Washington State Department of Commerce
USACE	U.S. Army Corps of Engineers
CMZ	Channel Migration Zone
DNR	Washington State Department of Natural Resources
DOH	Washington State Department of Health
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FFA	Frequently Flooded Area
FIRM	Flood Insurance Rate Map
FWHCA	Fish and Wildlife Habitat Conservation Area
GIS	Geographic Information System
GMA	Growth Management Act
HUC	Hydrologic Unit Code
LID	Low Impact Development
MTMC	Mountlake Terrace Municipal Code
OHWM	Ordinary High Water Mark
NFIP	National Flood Insurance Program
NMFS	National Marine Fisheries Service
PHS	Priority Habitats and Species
RMZ	Riparian Management Zone
RCW	Revised Code of Washington
SPTH	Site Potential Tree Height
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WHPA	Wellhead Protection Areas

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Figure 5. Snohomish County liquefaction susceptibility reproduced from Palmer et al. (2004).	24
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Appendices

APPENDIX A.	Ecology Wetland Buffer Guidance
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1. INTRODUCTION

1.1 Purpose

This review of the best available science (BAS) was compiled to support Mountlake Terrace's Critical Areas Ordinance (CAO) update. As a requirement of the Washington State Growth Management Act (GMA) cities and counties must complete periodic updates to their comprehensive plans and development regulations. Mountlake Terrace's Comprehensive Plan underwent a full update in 2024. This document sets the framework for planned CAO updates in Mountlake Terrace. It serves as the basis for a gap analysis to identify where updates to current critical area regulations should be prioritized for consistency with BAS.

BAS means the current and best available information that follows a valid scientific process as specified in WAC 365-195-900 through WAC 365-195-925. Characteristics of a valid scientific process include peer review, standardized methods, logical conclusions and reasonable inferences, quantitative analysis, proper context, and references. Common sources of scientific information include research, monitoring, inventory, modeling, assessment, and synthesis (WAC 365-195-905). BAS literature reviews are a synthesis of the current scientific body of knowledge, and only resources that meet these requirements are included as reference materials for this BAS.

Under the GMA, Mountlake Terrace must "include the 'best available science' (BAS) when developing policies and development regulations to protect the functions and values of critical areas and must give 'special consideration' to conservation or protection measures necessary to preserve or enhance anadromous fisheries¹" (WAC 365-195-900). Regulated critical areas include wetlands, areas with a critical recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas (RCW 36.70A.030).

While the BAS review is a resource for critical area management, it is not intended to provide definitive answers for all policy and regulatory decisions. Policy and regulations should incorporate BAS but also necessitate decision-making processes based on societal values. Additionally, ecological systems are highly complex and the scientific body of knowledge is constantly evolving with the advancement of new research and technology. Despite these advancements, there are limits to the current state of science and certain topics may not be fully understood. Where there is scientific uncertainty in the literature about a particular subject, this review presents a range of potential ideas, theories, or findings. In accordance with WAC 365-195-920, decision-makers may opt for a precautionary, or no-risk approach, when scientific information is incomplete.

¹ Anadromous refers to fish or fish species that spend portions of their life cycle in both fresh and salt waters, entering fresh water from the ocean to spawn.

1.2 Climate Change

As of July 2023, with passage of Washington House Bill 1181: Climate Change in Local Comprehensive Planning, the GMA requires jurisdictions to incorporate and evaluate the effects of climate change in long-range planning. Climate change is anticipated to have a profound influence on natural systems. Addressing anticipated climate change effects on critical areas allows for decision-makers to incorporate climate resilience into policy and regulations. This section provides an overview of predicted climate change effects in the Puget Sound region of Washington State that have the potential to alter the critical area functions and values in Mountlake Terrace. These predicted effects are referenced and expanded upon throughout the document.

Increasing air temperatures and more extreme heat

- Long-term warming, a lengthening of the frost-free season, and more frequent nighttime heat waves have been observed (Mauger et al. 2015).
- Models predict more “hot days” each year (Ecology 2024).
- Global warming of about 1°C has already occurred. Warming may exceed 1.5°C (2.7°F) by 2030 (Snover 2019).

Seasonal changes to precipitation patterns

- Increases in both the frequency and intensity of heavy rainfall events have been documented in western Washington (Mauger et al. 2015)
- Changes to summer precipitation frequency, intensity and duration combined with decline in snowpack are expected to make droughts more common (Ecology 2024; Mauger et al. 2015).
- An observed and projected decrease in snowpack is anticipated to result in reduced stream flows later in the year (Ecology 2024).
- Increasingly larger and more frequent floods are predicted with less snow and heavier, more frequent precipitation events (Ecology 2024).
- A likely reduction in groundwater availability is anticipated due to changes in precipitation patterns and intensity and timing of snowmelt combined with increased summer demand from people and ecosystems (Ecology 2024).

Rising sea levels and changing Puget Sound² conditions

- Sea levels have risen across Washington’s coastline and are expected to continue to rise at an accelerated pace (Ecology 2024).
- Projected future sea level rise estimates include:
 - An increase of 1.5-2.5 feet for all coastal areas of the state by 2100 (Ecology 2024).
- With higher sea levels, coastal flooding and damage from storm surges are predicted to increase (Mauger et al. 2015).
- Washington’s coastal water temperatures have increased by 1.2°F since 1900 and warming is expected to continue (Ecology 2024).

- The acidity of the Puget Sound is increasing (i.e., pH values are decreasing) due to the absorption of carbon dioxide from the atmosphere into Puget Sound waters (Ecology 2024; Mauger et al. 2015).

Increasing risk of wildfire and smoke

- Hotter, dryer summers and snowpack loss are projected to result in conditions that increase the likelihood of wildfires west of the Cascades (Mauger et al. 2015); although the greatest wildfire risk increases occur outside of the Puget Sound region (Ecology 2024).
- While overall risk from wildfires in Mountlake Terrace may not be as extreme as in other parts of the state, smoke from wildfires elsewhere often moves into the Puget Sound basin. Projections for future changes in frequency or intensity of wildfire smoke are not available (Ecology 2024). The impact of wildfire smoke on natural systems is not fully understood (Voisin et al. 2023).

Changing environmental conditions for flora, fauna and pathogens

- Climate change effects are anticipated to alter the timing of biological events, species' geographic distributions, productivity, and resilience of terrestrial ecosystem (Mauger et al. 2015).
- The prevalence and location of certain pests and pathogens will likely shift. Responses are likely to be species- and host-specific (Mauger et al. 2015).
- Introduced, adaptable species may experience greater opportunity to become established and spread after disturbance while locally evolved flora and fauna may experience stress from environmental changes that exceed historic ranges/thresholds. Plant and animal adaptability and resilience to climate change is variable by species.

2. WETLANDS

2.1 Definitions

Washington State defines wetlands in WAC 365-190-030(24) as follows:

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

The local definition provided in the Mountlake Terrace Municipal Code (MTMC) 16.15.500, mirrors the state definition except that it expands on the list of exclusions to irrigation and drainage ditches, and contains minor differences in terminology and punctuation.

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

2.2 Wetlands in Mountlake Terrace

Wetlands are locally common in many areas of the Puget Lowlands and can be found throughout Mountlake Terrace. They typically occur in topographic and hydrologic low points such as valleys, depressions, the base of slopes, and along the margin of lakes and ponds. Inventoried wetlands in Mountlake Terrace are primarily distributed along stream corridors, depressions, and along the margins of Lake Ballinger (Figure 1).

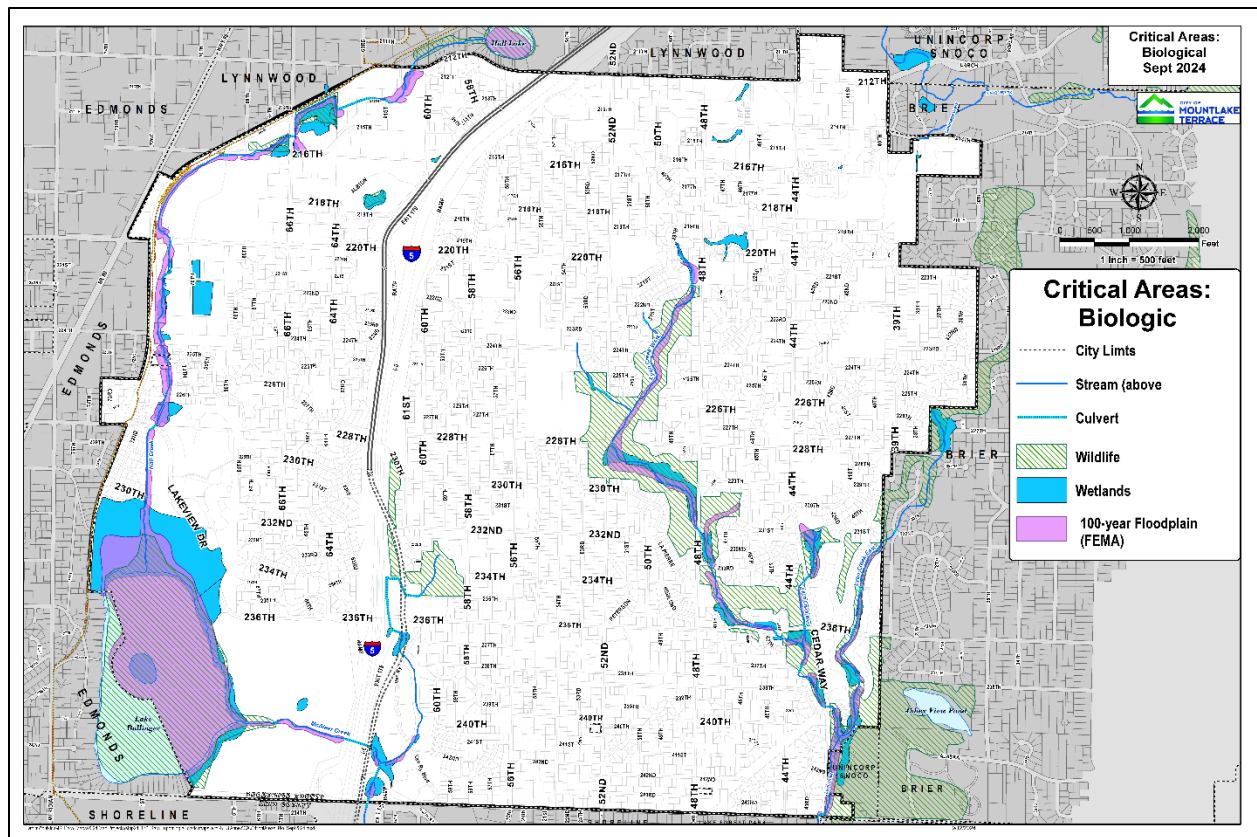


Figure 1. Biological Critical Areas Map reproduced from Mountlake Terrace (2024a).

2.3 Functions and Values

Wetlands are highly productive ecosystems that provide functions through physical, chemical and biological processes. The literature has previously established that wetlands provide numerous ecological functions with associated cultural and social values and economic benefits. Wetland functions vary for a given wetland based on multiple factors, including wetland landform or hydrogeomorphic class, landscape setting, vegetation structure, hydroperiods, and presence or absence of priority habitats and species. The primary ecological functions of wetlands can be grouped into the following categories (Sheldon et al. 2005):

Improving water quality

- Intercepting and detaining surface water runoff
- Sediment removal
- Filtering, removal, and transformation of pollutants
- Uptake of nutrients including phosphorous and nitrogen
- Shading

Maintaining the water regime in a watershed (i.e., hydrologic functions)

- Storage

- Velocity reduction
- Bank stabilization and erosion control
- Desynchronizing surface water flows and reducing flooding
- Groundwater recharge
- Maintaining base stream flows in the dry season

Providing habitat

- Suitability for water-dependent and water-associated organisms
- Supports unique plant assemblages
- Provides niche habitat requirements for certain species
- Surface water source
- Diversity of hydrologic regimes
- Structural complexity
- Connectivity to other ecosystems
- Climate/weather
- Topography/geology
- Nutrients
- Supports food webs

2.4 Key Protection Strategies

2.4.1 Wetland Identification and Classification

County- and national-scale online resources such as the King County iMap and the National Wetland Inventory provide modeled estimates of wetland locations. While these online databases are useful planning tools, site-level planning and development require individual studies by a qualified professional. Wetlands are more abundant than shown in inventory databases and may change over time.

The nationwide standard for wetland delineations is the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory 1987). In Mountlake Terrace, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* also applies (USACE 2010).

The Washington State Department of Ecology (Ecology) has developed a state-wide wetland rating system that has been periodically updated with one version for eastern Washington and one version for western Washington. The *Washington State Wetland Rating System for Western Washington, Version 2* (Hruby and Yahnke 2023) applies in Mountlake Terrace and is the regional standard. This current rating system version is similar to the prior 2014 publication. Changes were focused on clarifications, formatting improvements, updated website links, and annotations.

Ecology's rating system is a rapid assessment tool that evaluates wetland functions in the categories of water quality, hydrology, and habitat in the context of site potential, landscape potential, and societal

value (Hruby and Yahnke 2023). Using this system, wetlands are classified into one of four categories. This wetland classification system was designed to help agencies make decisions about protecting and managing wetlands. The rating system is also used to establish appropriate buffer distances from wetland categories based on the preservation of functions and values.

2.4.2 Management Resources and Standards

2.4.2.1 Wetland Buffers

Wetland buffers are a primary mechanism for protecting wetlands in Washington. Buffers provide similar ecological functions as wetlands, primarily related to water quality improvement and wildlife habitat functions (Sheldon et al. 2005). Buffers are effective in reducing impacts from adjacent land uses on wetlands, although effectiveness can vary based on a buffer's physical characteristics of buffers (e.g., slope, soils, vegetation, and width) (Hruby 2013; Sheldon et al. 2005). The following are summary of key conclusions from the *Update on Wetland Buffers: The State of the Science* report (Hruby 2013):

- *Wetland buffer effectiveness at protecting water quality varies in conjunction with several factors, including width, vegetation type, geochemical and physical soil properties, source and concentration of pollutants, and path of surface water through the buffer.*
- *Wider buffers are generally higher functioning than narrower buffers.*
- *Depending on site-specific environmental factors, different buffer widths may be needed to achieve the same level of protection.*
- *To protect wetland-dependent wildlife, a broader landscape-based approach that considers habitat corridors and connections is necessary.*
- *Many animals, particularly native amphibians, require undisturbed upland habitats for their survival.*

Ecology's (2022) *Wetland Guidance for CAO Updates* is a useful tool for local jurisdictions updating the CAOs and addresses a variety of topics typically covered under local wetland regulations. In this document, Ecology provides three wetland buffer approach options that local jurisdictions can consider when updating their CAOs. The buffer options presented are based on a moderate-risk approach to protecting wetland functions (Ecology 2022). The three buffer options, summarized below, assume that wetland buffer is well vegetated with native species. Further detail is provided in Appendix A of this report.

- **Option 1.** Buffer width is based on wetland category and habitat score, if minimization measures are applied, and a habitat corridor is provided. If a habitat corridor is not provided or minimization measures are not implemented, then buffer width requirements increase. Modified buffers should be not less than 75 percent of the otherwise required buffer. Option 1 provides the most flexibility.
- **Option 2.** Buffer width is based on wetland category and modified by the intensity of the impacts from proposed land use. Option 2 decreases regulatory flexibility and eliminates buffer

averaging and reduction provisions through the application of corridors and minimization measures.

- **Option 3.** Buffer width is based on wetland category only. Option 3 is the least flexible and simplest to administer.

Ecology's guidance also provides recommendations for when functionally disconnected buffers may be appropriate to exclude from regulated buffer area (Ecology 2022).

2.4.2.2 Wetland Mitigation

Mitigation Sequencing

Mitigation sequencing is the structured process of avoiding, minimizing, and mitigating all impacts to a particular resource. Mountlake Terrace has incorporated mitigation sequencing into existing critical areas regulations in MTMC 16.15.210. This is consistent with federal directives to achieve no net loss of wetland functions and values. Mitigation sequencing is also required by the Wetlands Compensatory Mitigation Rule issued by the U.S. Environmental Protection Agency in 2008 and WAC 197.11.768. Per current Ecology guidance for CAO updates, mitigation sequencing must be applied in the following order (Ecology 2022):

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

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

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

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

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

Monitoring the impact and taking appropriate corrective measures.

Compensatory Mitigation

Compensatory mitigation may be achieved through a programmatic approach or an approved permittee-responsible mitigation (PRM) plan. Programmatic approaches utilize third-party sponsors to obtain mitigation credits, such as a mitigation bank or in-lieu fee (ILF) program. PRM is an applicant-managed mitigation project. PRM is typically developed and implemented concurrently with wetland impacts, but it may be done in advance. Mitigation banks are state-certified to ensure ecological function replacement is achieved. ILF programs collect fees and apply the funds to restoration projects within the service area. USACE and Ecology review and approve ILF programs. Whereas, PRM applicants must complete installation, site maintenance, monitoring, and adaptive management as

needed to achieve approved mitigation plan goals and performance standards (Ecology, USACE, and EPA 2021).

State and federal agencies have determined an order of mitigation preference according to the 2008 Federal Mitigation Rule (33 CFR Part 332.3[b] and 40 CFR Part 230.93[b]). This establishes the following hierarchy:

1. Mitigation bank credits
2. In-lieu fee (ILF) program credits
3. Permittee-responsible mitigation (PRM) under a watershed approach
4. PRM that is on site and in kind
5. PRM that is off site and/or out of kind

Ecology's recommendations for mitigation ratios for projects in Western Washington depend on the wetland category and type of mitigation action (Granger et al. 2005). Mitigation ratios for direct wetland impacts are increased to account for temporal losses (Ecology 2022). Current mitigation ratio recommended by Ecology are provided in Appendix B of this report. When applying advanced mitigation, the Ecology-recommended ratios account for the wetland category and proposed mitigation actions (Ecology, USACE, and EPA 2021).

To address ecological priorities in Washington State's watersheds, Ecology has developed additional guidance and tools for applicants, including details on using a watershed approach for mitigation site selection and the credit-debit method (Hruby 2012; Hruby, Harper, and Stanley 2009). The credit-debit method is a system to calculate mitigation credits needed for a given project. The credit calculations can be used to determine compensation when utilizing in-situ mitigation, a mitigation bank, or an in-lieu fee program. Depending on specific site conditions, this may result in less or more mitigation than would be required under a set traditional mitigation ratio guidance (Hruby 2012).

Compensatory wetland mitigation methods in order of preference are (Ecology, USACE, and EPA 2021):

1. Restoration: Re-establishment,
2. Restoration: Rehabilitation-hydrologic processes restored,
3. Creation (establishment),
4. Preservation, and
5. Enhancement

Preservation and enhancement-only mitigation are least preferred since they result in a net loss of wetland area. Ecology prefers to see preservation or enhancement in combination with a no net loss mitigation method, such as wetland creation (Ecology, USACE, and EPA 2021).

Ecology recommends applying at least a one-to-one ratio to buffer impacts (Ecology, USACE, and EPA 2021). A ratio greater than 1:1 may be required to replace all lost critical area functions. Ecology also recommends evaluating indirect wetland impacts to determine appropriate compensatory mitigation (Ecology, USACE, and EPA 2021).

Monitoring

Evaluations of wetland mitigation outcomes found that most wetland mitigation does not fully replace impacted functions and falls short of the goal of no net loss (Ecology 2008; Johnson et al. 2002). The goal of no net loss of wetland function cannot be achieved through mitigation alone but may be met through several factors, including adequate monitoring and maintenance and appropriate performance standards. Compensatory mitigation sites typically require performance standard monitoring for a 3- to 10-year period, to ensure that implemented sites provide the functions which were planned. There are few studies of long-term compliance with performance standards, and one assessment found a reduction in site compliance 8 to 20 years following installation (Van den Bosch and Matthews 2017).

The National Research Council (2001) identifies factors that reduce the risk of mitigation failure, such as detailed functional assessment, high success standards, detailed mitigation plans, larger bonds with up-to-date market values, high replacement ratios, and greater expertise.

2.5 Climate Change Impacts and Mitigation

Climate change is predicted to significantly impact wetland ecosystems by altering hydrology, reducing biodiversity, disrupting carbon storage, modifying floral and faunal community composition, and increasing rates of disease (Aukema et al. 2017; Burkett and Kusler 2000). Anticipated hydrologic changes that impact wetlands include sea level rise and associated shifts in salinity (Burkett and Kusler 2000), increased ponding during wet seasons, and decreased water levels during dry seasons (Halabisky 2017; Mauger, Casola, Morgan, Strauch, Jones, Curry, Busch Isaksen, et al. 2015). Changes to wetland hydrology could result in loss of wetland area and shifts in plant communities. Changes to seasonal wetland hydrologic cycles can reduce the ability of wetland soil bacteria and plants to retain, process, and sequester pollutants (EPA 2015). Although wetlands are dynamic by nature, their ability to adapt to change is limited. Wetlands that are most vulnerable or likely to experience the greatest changes from the effects of global warming are those in coastal areas and those where surface water and stormwater are main sources of hydrology.

Wetlands provide functions that assist in the mediation of climate change impacts. Wetlands are important carbon sinks and help offset climate change through carbon storage by limiting the decomposition of organic carbon and sequestering greenhouse gas emissions (Gallagher, Zhang, and Chuan 2022). Wetlands and wetland buffers, like riparian corridors, support a shaded and cool microclimate that provides refuge for wildlife from higher temperatures as well as wildlife corridors at a local or landscape scale (Association of State Wetland Managers 2015). Wetlands attenuate flood waters, which are anticipated to increase in frequency and intensity with climate change.

While climate change is predicted to impact wetland systems, wetlands will also play a role in mitigating the extent and anticipated effects of climate change. The potential outcome of climate change impacts on wetlands is two-pronged: loss of wetland area may result in release of stored carbon; and loss of wetland area or impacts to wetland conditions may reduce or impair the functions that wetlands can provide. These “positive feedback” mechanisms can incrementally intensify climate change by releasing stored carbon into the atmosphere and magnify its adverse impacts on communities by reducing wetland areas and impairing their functions. Consequently, the value of wetland functions can be perceived as very high when considered in the context of climate change.

2.5.1 Strategies to Manage Climate Change Impacts on Wetlands

Current wetland protection standards Ecology (2022) utilize a moderate-risk approach to wetland protection, meaning there is a moderate risk that wetland functions would be impacted when these standards (primarily buffers) are applied. The BAS review indicates that wetlands are highly valuable for anadromous fish and climate resilience, and vulnerable to climate change. The additional strategies listed below may be considered by the City for managing their wetland resources:

- Consider creating and maintaining a database of wetlands located in the city.
- Identify wetlands they may be at risk from the effects of climate change (e.g., where surface water is a primary source of hydrology).
- Incorporate climate resiliency into mitigation sequencing.
 - Consider loss of wetland functions in the landscape within the context of climate change during mitigation sequencing.
 - Plan for climate change impacts when developing mitigation/restoration plans. For example, consider a broader range of hydrologic conditions and avoid/limit use of plant species predicted to be vulnerable to climate change stresses and pests.
 - Consider assisted migration for seed selection of native plants from locations that are better adapted to future climate conditions.
- Require applicants to document compliance with all applicable local, state, and federal permit requirements.

3. CRITICAL AQUIFER RECHARGE AREAS

3.1 Definitions

Critical aquifer recharge areas (CARAs) are defined in WAC 365-190-030(3) as follows:

Critical aquifer recharge areas are areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge.

Mountlake Terrace defines CARAs as follows (MTMC 16.15.500):

3.3 Functions and Values

CARAs provide communities with safe drinking water. CARA functions also have potential to influence other critical areas through groundwater, including fish-bearing streams. General CARA functions and values are summarized in the following documents:

- *Critical Areas Handbook* (Department of Commerce 2023)
- *Critical Aquifer Recharge Areas Guidance* (Ecology 2021)

3.4 Key Protection Strategies

DOH maintains a database of WHPAs, including locations and key attributes, that is publicly available online through the SWAP Mapping tool.

In Washington, drinking water systems are classified as follows (Asinas, Raymond, and Mehta 2022; WA Department of Health 2017).

- Private Wells: Individual wells that usually serve a single residence.
- Group A Systems: Serve 15 or more connections, and 25 or more people.
- Group B Systems: Serve fewer than 15 connections, and fewer than 25 people.

WHPAs typically have four or five zones: the sanitary control area, three zones based on different water time-of-travel rates, and a buffer zone if necessary.

The *Washington State Wellhead Protection Program Guidance Document* is a useful resource for WHPA management (WA Department of Health 2017). On the topic of addressing WHPAs as critical area, the guidance document notes the benefit of protecting noncontiguous buffer zones through CARA designations, which provide protection for the quality and quantity of public water supplies. The guidance document recommends considering number of system connections, system ownership (public or private), and contamination susceptibility when considering which WHPAs to designate as CARAs.

3.5 Climate Change Effects

Climate change impacts to drinking water systems are projected based on increased drought, increased wildfires, and increased flooding (Asinas, Raymond, and Mehta 2022):

- Groundwater resources may be at risk from prolonged, multi-year droughts, although the likelihood of multi-year droughts in the Pacific Northwest is unclear. More research is needed to understand past and future changes in groundwater within the context of climate change (Ecology 2024). Droughts may put pressure on groundwater supplies potentially causing aquifer depletion (Asinas, Raymond, and Mehta 2022).

- Demand for aquifers during hotter summers may increase to compensate for changes in precipitation patterns and temperatures.
- Wildfires will introduce more particulates and contaminants into the environment, which settle on surface water and infiltrate into groundwater (Burton et al. 2016; Mansilha et al. 2020).
- Heavy rainfall and flooding can introduce surface contaminants into groundwater resources (Asinas, Raymond, and Mehta 2022).

3.5.1 Strategies to Manage Climate Change Impacts on CARAs

The following are general BAS-supported strategies to minimize climate change impacts on CARAs that may be applicable for WHPA management in Mountlake Terrace:

- Ecology recommends understanding water resources, tracking water levels and recharge sources, and focusing on water conservation as a strategy to plan for climate change impacts (Ecology 2021).
- Manage stormwater to maintain groundwater recharge in CARAs. Utilize a 20-year planning horizon to manage supply and demand given climate trends and projections (Asinas, Raymond, and Mehta 2022).
- Design stormwater systems to better mimic natural systems and mitigate some of the functions lost elsewhere in the landscape due to changes in surface and groundwater inputs. For example, the use of roadside bioswales may be expanded. Stormwater treatment capacity may be increased as needed to protect water quality and manage water quantity.
- Planning and implementing flood mitigation strategies can reduce the likelihood of contaminated runoff events.
- Promote and incentivize low-impact development, specifically infiltration of clean runoff to support aquifer recharge.

4. FREQUENTLY FLOODED AREAS

4.1 Definitions

Frequently flooded areas (FFAs) are defined in WAC 365-190-030(8) as follows:

Frequently flooded areas are lands in the flood plain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater. These areas include, but are not limited to, streams, rivers, lakes, coastal areas, wetlands, and areas where high groundwater forms ponds on the ground surface.

The Mountlake Terrace definition is similar but excludes areas which flood due to high groundwater. The definition according to MTMC 16.15.500 is as follows:

"Frequently flooded areas" are lands in the floodplain subject to a one percent or greater chance of flooding in any given year and those lands that provide important flood storage, conveyance, and attenuation functions, as determined by the Director in accordance with WAC 365-190-080(3). Classifications of frequently flooded areas include, at a minimum, the 100-year floodplain designations of the Federal Emergency Management Agency and the National Flood Insurance Program (NFIP).

4.2 Floodplains in Mountlake Terrace

Floodplains are designated by FEMA in the Lyon Creek, Hall Creek, and McAleer Creek basins, including lands surrounding Lake Ballinger. These are depicted in Figure 3.

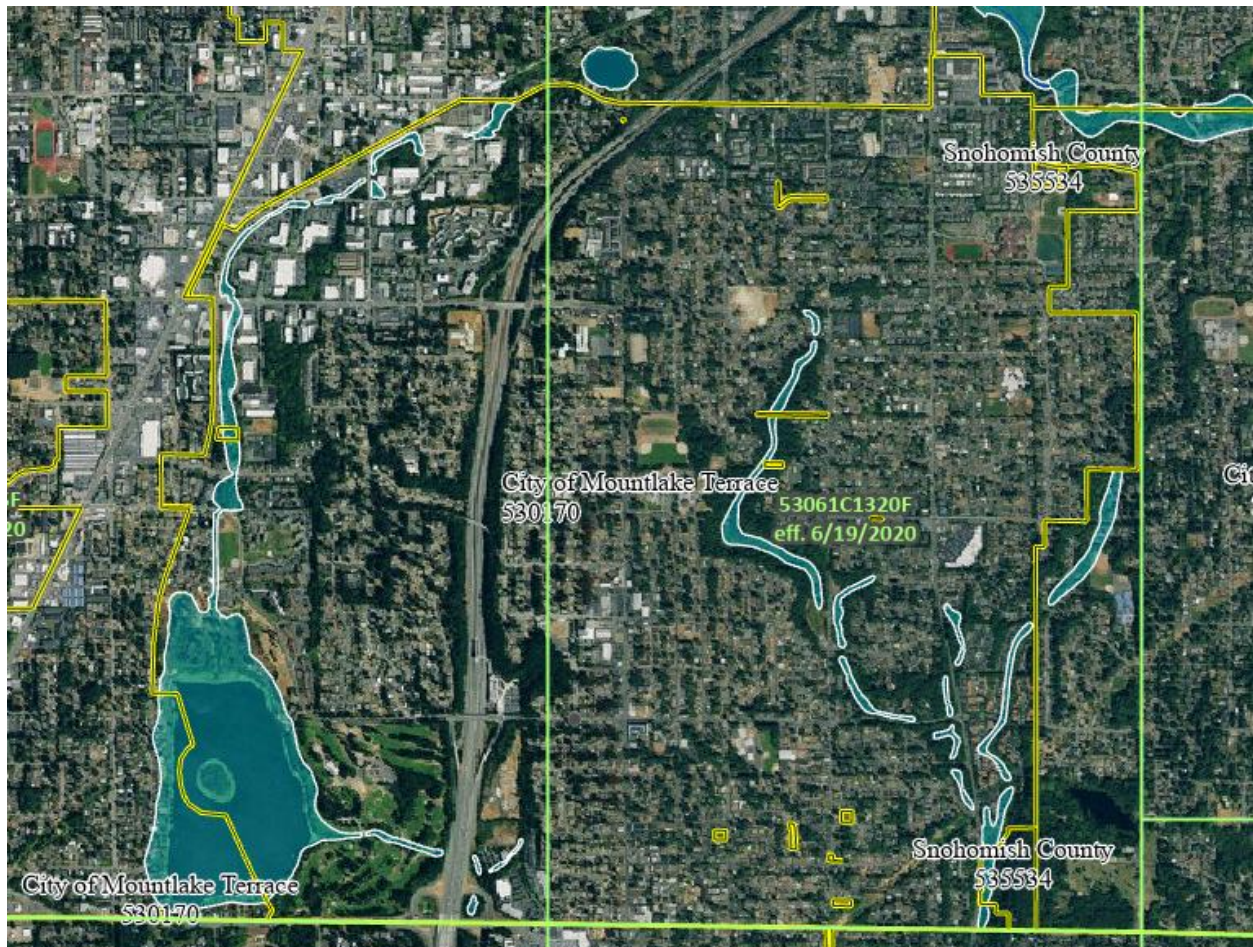


Figure 3. FEMA designated 100-year floodplain in Mountlake Terrace. Obtained from FEMA NFHL Viewer on May 6, 2025.

4.3 Functions and Values

Floods are events that can result in the destruction of property and loss of life but are also part of a natural ecological process that sustains river systems. Floods typically occur following large storm events but may also result from a release of impounded water, such as from a dam or levee failure, or beaver activity. FFAs are dynamic and ecologically productive environments that provide habitat for fish and wildlife and are an important component of watershed processes including:

- Flood water storage and conveyance,
- Nutrient and sediment deposition, and
- Mobilization of large woody debris.

Floodplains have been directly impacted by agriculture, residential development, and urbanization for centuries because the geographic locations tend to be well-suited for development during periods between floods. Floodplains have also been indirectly impacted by similar watershed-scale land use changes. Increased impervious surfaces and deforestation increase flooding magnitude and frequency (Booth et al. 2004). Increased flooding magnitude and frequency create greater risk for people and infrastructure within a floodplain.

Historically, approaches to mitigate floodplain risks have worsened downstream flood impacts and impacted fish and wildlife habitat (e.g., channel straightening and armoring, construction of dikes and levees, and floodplain fill). In landscape-level assessments, patterns of urban development, particularly impervious surface area and distribution, have been demonstrated to influence watershed functions (Alberti et al. 2006). Among these are stream channel downcutting, a process associated with watersheds that have frequent and short duration high peak flows, that further disconnects floodplains, increases in-stream erosion, and deposits sediment in downstream environments leading to blocked culverts (Booth 1990). Stream incision also affects surface and ground water interactions and may result in lower water table levels (Petrulia 2022).

Extreme floods have both positive and negative effects on stream health. Negative impacts include physical trauma and stress to aquatic organisms, displacement or stranding, erosion and sedimentation, loss of vegetation, pollution, disruptions to food webs and spawning, and disrupted migration. As a result, extreme floods have been documented to reduce fish densities (Milner et al. 2013). However, some studies show that fish assemblages are resilient to the effects of floods at a basin scale and recover quickly (George et al. 2015). Potential positive effects include the creation of new habitats and nutrient redistribution (Peters et al. 2015).

Flooding can result in significant economic costs from damaged homes and infrastructure, business disruption, and loss of life. The human and societal costs of flooding have increased over time as the population and amount of infrastructure in floodplains has increased and from climate change.

In 2008, the National Marine Fisheries Service (NMFS) issued a Biological Opinion under Section 7 of the Endangered Species Act, which found that the implementation of the National Flood Insurance

4.4 Key Protection Strategies

4.4.1 Identification and Classification

The Federal Emergency Management Agency (FEMA) maintains and updates flood maps, called Flood Insurance Rate Maps (FIRM). FEMA flood maps include any place considered to have a high risk of flooding, which is a one percent chance of flooding each year, or higher. FEMA maps are based on past flood events and do not include sea level rise or other climate impacts (Department of Commerce 2023).

4.4.2 Management Resources and Standards

The National Flood Insurance Program (NFIP), administered by FEMA, publishes basic building standards that can be implemented to protect both floodplain ecological functions and buildings, infrastructure, and people from flood risk. These standards are generally the minimum required, and local jurisdictions may choose to implement higher standards to further reduce risk (Department of Commerce 2023).

Program (NFIP) in the Puget Sound region jeopardized the continued existence of federally threatened salmonids and resident killer whales. As a result, NMFS established Reasonable and Prudent Alternatives to ensure that development within the Special Flood Hazard Area (100-year floodplain), floodway, Channel Migration Zone (CMZ), and riparian buffer zone do not adversely affect water quality, flood volumes, flood velocities, spawning substrate, or floodplain refugia for listed salmonids. Because the NFIP is implemented by the Federal Emergency Management Agency (FEMA) through participation by local jurisdictions that adopt and enforce floodplain management ordinances, FEMA has delegated responsibility to the local jurisdictions to ensure that development does not adversely affect listed species. Projects within FEMA-designated floodplains are required to prepare habitat assessments to ascertain their potential effects on federally-listed endangered species. In particular, floodplain storage volumes may not be decreased nor base flood level elevations increased.

4.5 Climate Change Effects

Climate change in the Pacific Northwest is anticipated to increase flood risks because of the increased precipitation paired with the increased frequency and intensity of extreme weather events (Ecology 2024). Climate change models predict that the frequency of atmospheric rivers, which contribute to severe deluges in rainwater and other extreme weather events, will become more frequent and severe (Mauger and Kennard 2017; Salathe et al. 2014). Increased floodwater elevation and expansion of floods to new areas threaten property and public safety. Stream channel migration can also drastically alter flood risks and migration dynamics are expected to shift as a result of climate change (Mauger and Kennard 2017).

The Department of Commerce's (2023) *Critical Areas Handbook* presents the following as an optional strategy to help local governments plan for flood risk, beyond the minimum standards:

Ecology's RiskMAP ("risk mapping assessment and planning") program provides additional maps that can help local governments plan for flood risk in their communities. It integrates several regulatory and nonregulatory products for hazard mitigation planning, including FEMA's National Flood Hazard Layer, 1000-year floodplain maps, depth grids (expected depth of flooding from a 100-year event), earthquake layers, landslide inventories, and building footprints for residential and critical facilities buildings. It also includes project data for RiskMAP assessment projects in certain counties. Maps of the 1000-year floodplain are included; floods of this magnitude are becoming more common with climate change and wildfires, and more communities are starting to plan for 500-year and 1000-year floods (instead of just 100-year floods). Communities may also see areas with urban flooding due to inadequate storm drainage, or issues with groundwater flooding or high sediment loads in certain streams causing them to meander into new areas. One of the most popular non regulatory products developed through RiskMAP is a map of the base flood elevation plus one, two and three feet. Base flood elevation is how high FEMA statistically predicts the water to rise in a 100-year flood event. This helps local communities understand the inundation in low lying areas. The map also shows information about buildings from local assessor's offices, like occupancy, use, value, and materials. It has a GIS model that was developed by FEMA to estimate damage to structures from a 100-year flood or an earthquake.

Other strategies include:

- Encourage and incentivize floodplain restoration actions to restore floodplain connectivity to streams and wetlands and protect or restore riparian corridors to maintain microclimate.
- Utilize the FEMA Climate Resiliency approach to support flood hazard management planning and follow grant funding opportunities.

5. GEOLOGICALLY HAZARDOUS AREAS

5.1 Definitions

Geologically hazardous areas are defined by Washington State as "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" (WAC 365-190-030). The four main types of geologically hazardous areas are erosion hazard areas, landslide hazard areas, seismic hazard areas, and areas subject to other geologic events such as coal mine hazards and volcanic hazards (WAC 365-190-120).

Mountlake Terrace defines a "geologic hazard areas" as *those areas that because of their susceptibility to erosion, landsliding, earthquake, volcanic lahar, liquefaction or other geological events, may not be suited to siting commercial, residential or industrial development consistent with public health or safety concerns.*

5.1.1 Erosion Hazard Areas

Washington State defines erosion hazard areas according to WAC 365-190-030(5) as follows:

"Erosion hazard areas" are those areas containing soils which, according to the United States Department of Agriculture Natural Resources Conservation Service Soil Survey Program, may experience significant erosion. Erosion hazard areas also include coastal erosion-prone areas and channel migration zones.

Furthermore, according to WAC 365-190-120(5), "erosion hazard areas include areas likely to become unstable, such as bluffs, steep slopes, and areas with unconsolidated soils."

Mountlake Terrace has established specific definitions for *erosion hazard areas* and *critical erosion hazard areas*, as defined by MTMC 16.15.500. Only the latter is classified as a critical area.

"Erosion hazard areas" means lands or areas that, based on a combination of slope inclination and the characteristics of the underlying soils, are susceptible to varying degrees of risk of erosion. These include, but are not limited to, those identified by the U.S. Department of Agriculture Natural Resource Conservation Service Soil Classification System, with a water erosion hazard of "severe" or "high."

"Critical erosion hazard areas" means lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resource Conservation Service as having "severe" or "very severe" erosion hazards.

5.1.2 Landslide Hazard Areas

Washington State defines landslide hazard areas as "areas at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors," under WAC 365-190-030(10).

In addition, according to WAC 365-190-120(6):

They include any areas susceptible to landslide because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other factors, and include, at a minimum, the following:

(a) Areas of historic failures, such as:

- (i) Those areas delineated by the United States Department of Agriculture Natural Resources Conservation Service as having a significant limitation for building site development;*
- (ii) 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*
- (iii) 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.*

(b) Areas with all three of the following characteristics:

- (i) Slopes steeper than 15 percent;*

- (ii) *Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and*
- (iii) *Springs or groundwater seepage.*
- (c) *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;*
- (d) *Slopes that are parallel or subparallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;*
- (e) *Slopes having gradients steeper than 80 percent subject to rockfall during seismic shaking;*
- (f) *Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action, including stream channel migration zones;*
- (g) *Areas that show evidence of, or are at risk from snow avalanches;*
- (h) *Areas located in a canyon or on an active alluvial fan, presently or potentially subject to inundation by debris flows or catastrophic flooding; and*
- (i) *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.*

Mountlake Terrace has established specific definitions for *landslide hazard areas* and *critical landslide hazard areas*, as defined by MTMC 16.15.500. Only the latter is classified as a critical area.

"Landslide hazard areas" means areas that, due to a combination of geologic, topographic, and/or hydrologic factors, are considered to be susceptible, in varying degrees of risk, to landsliding.

"Critical landslide hazard areas" means lands or areas where there is a high (Class III) or very high (Class IV) risk of landslide due to a combination of slope, soil permeability and water.

They are further specified by the following system (MTMC 16.15.430.A):

Landslide Hazard Areas. "Landslide hazard areas" are classified as "Class I," "Class II," "Class III" or "Class IV" as follows:

- a. Class I/Low Hazard. Areas with slopes of 15 percent or less.*
- b. Class II/Moderate Hazard. Areas with slopes of between 15 percent and 40 percent and that are underlain by soils that consist largely of sand, gravel or glacial till.*
- c. Class III/High Hazard. Areas with slopes between 15 percent and 40 percent that are underlain by soils consisting largely of silt and clay.*
- d. Class IV/Very High Hazard. Areas with slopes steeper than 15 percent with mappable zones of emergent water (e.g., springs or ground water seepage), areas of known (mappable) landslide deposits regardless of slope, and all areas with slopes 40 percent or greater.*

5.1.3 Seismic Hazard Areas

Washington State defines seismic hazard areas as *“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”* under WAC 365-190-030(18). In addition, seismic hazard areas also include areas subject to severe risk of damage as a result of subsidence and surface faulting (WAC 365-190-120).

Mount Lake Terrace has a similar definition: *“Seismic hazard areas means areas that, due to a combination of soil and ground water conditions, are subject to risk of damage as a result of earthquake-induced ground shaking, slope failure, subsidence or liquefaction of soils”* (MTMC 16.15.500). Those designated as critical areas, or *critical seismic hazard areas* *“means lands or areas where there is a high risk of seismic events and damage.”*

5.2 Hazard Characterization

5.2.1 Erosion Hazard Areas

Erosion hazard areas present risks to infrastructure, the environment, and public safety. For example, erosion may undermine the foundation of buildings or other structures and increase the risk of landslides which threaten property and human life. There is also a direct link between erosion and impacts to other aquatic critical areas including streams, ponds, and wetlands (Dubois et al. 2018).

Erosion and landslides are natural processes that contribute sediment, rocks, and large woody debris to streams and other waterbodies. The introduction of periodic pulses or chronic turbidity and suspended solids associated with erosion has been demonstrated to harm certain types of aquatic life, particularly salmonids (Bash, Berman, and Bolton 2001). This can occur from activities such as clearing vegetation and the creation of new impervious surfaces, which can introduce sediments and pollutants to natural waterways (Booth 1991).

The stability of erosion hazard areas is influenced by the vegetation composition, structure, and cover. Vegetation reduces erosion through rainwater interception and by anchoring soils within root networks (Booth et al. 2004; R.J. Naiman and Decamps 1997). In cleared areas, rainfall tends to concentrate in small channels, and sediment can be mobilized as the water gains depth, volume, and increased flow. Small channels or rills can eventually develop into gullies in these types of exposed soils.

Erosion hazard areas are present throughout Mountlake Terrace, as depicted in Figure 4. These generally occur along stream corridors and sloped areas.

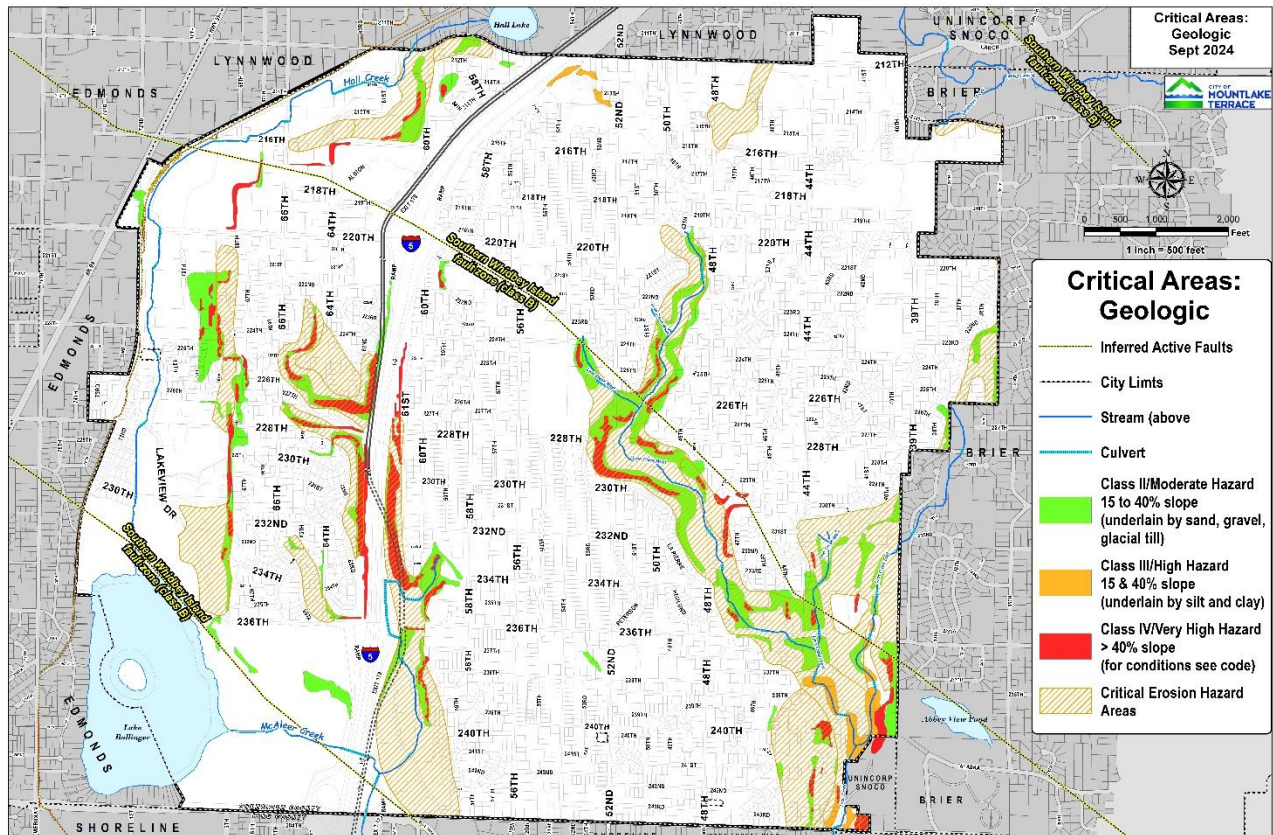


Figure 4. Map depicting geologically hazardous areas reproduced from Mountlake Terrace (2024b).

5.2.2 Landslide Hazard Areas

Landslides are difficult to predict because bluff geology, sediment composition, topography, and hydrology all influence risk of failure. Steeper slopes are more prone to failure due to increased gravitational stresses (Shipman 2004). Certain land use modifications and development activities have the potential to increase the likelihood of landslides to occur, such as vegetation removal and the creation of new impervious surfaces. In addition to anchoring sediments, the process of evapotranspiration by plants transforms groundwater into atmospheric vapor and intercepts rainwater (Schmidt et al. 2001; Watson and Burnett 1995). The anchoring and hydrologic functions of vegetation lower the risk of slope failure and shallow-rapid landslides (Schmidt et al. 2001).

Landslide hazard areas are mapped by Mountlake Terrace as depicted in Figure 4. The Washington Department of Natural Resources (WDNR) Geologic Information Portal provides mapping for historic landslide areas.

5.2.3 Seismic Hazard Areas

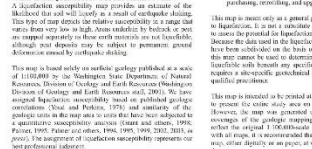
Seismic hazard areas are areas subject to damage resulting from earthquake-induced landslides, seismic ground shaking, dynamic settlement, fault rupture, soil liquefaction, or flooding caused by

tsunamis and seiches. Seismic hazards are identified in WDNR Geologic Information Portal³. The WDNR Geologic Information Portal contains information projecting the Cascadia, Seattle, and Tacoma Seismic Scenarios which include Mountlake Terrace in the study area.

Mountlake Terrace is located in an area of high seismic activity, as are all areas of Western Washington. There are between 1,000-2,000 earthquakes which occur annually between Washington and Oregon, although most are small and fewer than 25% are perceptible (Cooper 2006; McCrumb et al. 1989). The probability of occurrence and risk of earthquakes depends on location, and seismic hazard areas have been mapped to identify areas with the greatest risk.

Secondary hazards associated with seismic events include liquefaction of the soil, rockfall, landsliding, dam failure, levee failure, and tsunamis or seiches. Liquefaction hazard areas within Snohomish County are mapped by the Washington Department of Natural Resources (Figure 5), in addition to seismic site class and seismic design categories. Nearly all areas of Snohomish have some level of seismic risk, even outside of designated critical areas.

³ <https://geologyportal.dnr.wa.gov/>



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risk and may, in some cases, increase the potential for a hazardous event. There is public interest in regulating these areas because a geologic event occurring on one property can impact large surrounding areas. It is important to identify where such hazard areas are located to ensure that activities and development in those areas are managed for safety and stability.

5.3.1 Management Resources and Standards

The primary goal of protection measures for geologic hazards is to protect people and property. Risk management occurs at the stage of planning and development. Risks can be minimized by limiting the occupancy and development in geologically hazard areas. This risk of development in geologic hazard areas is evaluated with classification systems to inform site development restrictions and requirements. One method to manage risk is the protection of buffers around geologic hazard areas to restrict development in hazard areas. For development in erosion hazard or landslide hazard area, design and construction standards are necessary to prevent the development from reducing slope stability and ensuring that development is resilient to potential hazards. Any such development in the hazard area or its buffer should be evaluated on a site-specific basis by a licensed geotechnical engineer or engineering geologist. Methods used in site studies should adhere to best professional standards and include subsurface exploration and testing of soils at an appropriate frequency across the site as necessary.

Although the general protective approach is to avoid disturbing geologic hazard areas, WAC 365-190-080(4) states “Some geological hazards can be mitigated by engineering, design, or modified construction or mining practices so that risks to health and safety are acceptable”.

Additional protection strategies were identified by the SR-530 Landslide Commission following the Oso landslide that occurred in March 2014. Recommendations from the commission include integrating and funding Washington’s emergency management system, supporting a statewide landslide hazard and risk mapping program, establishing a geologic hazards resilience institute, conducting landslide investigations, and advancing public awareness of geologic hazards (SR530 Landslide Commission 2014). To improve landslide hazard and risk mapping, collaboration among agencies and landowners is recommended along with risk prioritization, utilization of lidar mapping and GIS database tools.

Per the SR-530 Landslide Commission’s 2014 findings, updates to critical area regulations are recommended to better identify and regulate land uses in geologic hazard areas.

Seismic hazards can be managed by applying earthquake-resistant building standards to at-risk areas. The Washington State Building Code (WAC 51-50) offers guidance from the 2018 International Existing Building Code with amendments specific to the State, including several directly related to seismic standards.

5.4 Climate Change Effects

Geologically hazardous areas, particularly erosion hazard areas, and landslide hazard areas, are influenced by climate change. Climate change models project warmer, drier summers, and increased

precipitation in other seasons while maintaining roughly the same amount of annual precipitation (Dalton, Mote, and Snover 2013). Extreme precipitation events modeled by the UW Climate Impacts Group are expected to increase in intensity and frequency (Mauger, Morgan, and Won 2021). Increased magnitude and frequency of rain events can lead to over-saturated soils and contribute to slope instability in hazard areas. Consequentially, geologic hazard risks are anticipated to increase because rainfall intensity and duration are known indicators of landslide events (Chleborad 2006; DNR 2020). Additionally, the severity and frequency of wildfire is expected to increase, heightening susceptibility to erosion and landslide hazards (Mauger et al. 2015).

Changing climate is also anticipated to affect vegetation community composition and native plant mortality due to shifts in plant hardiness zones and species ranges (Lenoir and Svenning 2015). Existing species assemblages, canopy types, and root systems may be disrupted and displaced by invasive species. Although plant provenance is not the only indicator of a plants capability to stabilize slopes, opportunistic invasive plants often have shallow root systems and short lifespans that are less effective at anchoring soils than native counterparts. Himalayan blackberry, for example, is a wide spread invasive plant likely to displace lost plants and has shallow root system and can cause soil erosion by preventing the establishment of native counterparts (Gaire et al. 2015). High levels of plant diversity also generally improve soil stability by combining multiple forms of root architecture (Ghestem et al. 2014).

- Encourage or require climate-informed design for development and infrastructure in or near geologic hazard areas (DNR 2020).
- Require appropriate surface and ground water management practices for development near coastal bluffs.
- Encourage utilization of soft shore protection strategies.
- Identify and prioritize geologic hazards within the City, then update mapping as needed using current practices such as LiDAR and GIS database tools.
- Keep in communication with the governor's office to ensure the City of Mountlake Terrace is included in statewide collaborative efforts to manage geologic hazard areas.
- Manage vegetation for climate resilience and slope stability.

6. FISH AND WILDLIFE HABITAT CONSERVATION AREAS

6.1 Definition

Washington State defines fish and wildlife habitat conservation areas (FWHCAs) in WAC 365-190-030(6) as follows:

- (a) *"Fish and wildlife habitat conservation areas" are areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered,*

may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness. Counties and cities may also designate locally important habitats and species.

- (b) *"Habitats of local importance" designated as fish and wildlife habitat conservation areas include those areas found to be locally important by counties and cities.*
- (c) *"Fish and wildlife habitat conservation areas" does not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of, and are maintained by, a port district or an irrigation district or company.*

The following FWHCAs must be considered for classification and designation (WAC 365-190-130):

- (a) *Areas where endangered, threatened, and sensitive species have a primary association;*
- (b) *Habitats and species of local importance, as determined locally;*
- (c) *Commercial and recreational shellfish areas;*
- (d) *Kelp and eelgrass beds; herring, smelt, and other forage fish spawning areas;*
- (e) *Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat;*
- (f) *Waters of the state;*
- (g) *Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; and*
- (h) *State natural area preserves, natural resource conservation areas, and state wildlife areas.*

Mountlake Terrace's definition of FWHCAs in MTMC 16.15.500 is substantially similar to the state definition and reads as follows:

"Fish and wildlife habitat conservation areas" 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.

Types of FWHCAs which are designated in the critical areas code are described in MTMC 16.15.420.A.2. These include the following groups.

- a. *"Critical habitats" are those habitat areas which meet the definition of "secondary habitat" and meet any one of the following criteria:*
 - i. *Shown on WDFW priority habitat maps; or*
 - ii. *The documented presence of species or habitat listed by federal or state agencies as "endangered," "threatened," "candidate," "sensitive" or "priority"; or*

- iii. *The presence of unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or*
- iv. *Located in or adjacent to a "Category I wetland," as defined in these regulations; or*
- v. *Located in or adjacent to a "Type S stream," as defined in these regulations.*
- b. *"Secondary habitats" are habitats which are valuable to wildlife and support a wide variety of species due to their undisturbed nature, a diversity of plant species and structure, presence of water, or the area's size, location or seasonal importance, and is not classified as a critical habitat.*

Mountlake Terrace has structured the code to separate stream and wildlife habitat under different sections, MTMC 16.15.4210 and 16.15.420, respectively. This section of the BAS covering FWHCAs includes both streams and wildlife habitat and is inclusive of both code sections.

6.2 FWHCAs in Mountlake Terrace

6.2.1 Waterbodies

There are three prominent stream systems in Mountlake Terrace which include Lyon Creek, McAleer Creek, Hall Creek, and their associated tributaries (Figure 1). Lake Ballinger is the only lake in the city, along the southwest city limits.

6.2.2 Wildlife and Habitats

Mountlake Terrace is heavily developed and contains few areas with high quality wildlife habitat. The WDFW PHS program has identified and mapped biodiversity areas and corridors throughout much of the Lyon Creek corridor and in Veterans Memorial Park. The only priority species which are mapped as having habitats in the city include waterfowl concentrations associated with Lake Ballinger and salmonid fish among instream habitat. One flyover of the endangered yellow-billed cuckoo (*Coccyzus americanus*) was observed in year 2000 near I-5, however, no suitable breeding habitat is present in Mountlake Terrace and the species is generally considered to be functionally extinct from the region.

A full list of priority habitats and species (PHS) by which WDFW has indicated may be present in King County is shown in Table 1. Many of the species included in this list are unlikely to be present in an urban area such as Mountlake Terrace, though, even rare species may be found infrequently. As WDFW notes, habitats and species can change over time as distributions expand or contract.

Table 1. List of WDFW-designated priority habitats and species which occur in King County. Not all species have range overlap with Mountlake Terrace city limits. Species and habitats associated with marine environments have been excluded from this table.

	Species and Habitats	State Status	Federal Status
Habitats	Biodiversity Areas and Corridors		
	Herbaceous Balds		
	Old-Growth/Mature Forest		
	Oregon White Oak Woodlands		

	Species and Habitats	State Status	Federal Status
	West Side Prairie		
	Riparian		
	Freshwater Wetlands and Fresh Deepwater		
	Instream		
	Caves		
	Cliffs		
	Snags and Logs		
	Talus		
Fishes	Pacific Lamprey		
	River Lamprey	Candidate	
	White Sturgeon		
	Olympic Mudminnow	Sensitive	
	Bull Trout/ Dolly Varden	Candidate	Threatened
	Chinook Salmon		Threatened
	Chum Salmon		Threatened
	Coastal Res./ Searun Cutthroat		
	Coho Salmon		Threatened–Lower Columbia
	Kokanee		
	Pink Salmon		
	Pygmy Whitefish	Sensitive	
	Rainbow Trout/ Steelhead/ Inland Redband Trout	Candidate	Threatened
	Sockeye Salmon		Threatened–Ozette Lake
Amphibians	Larch Mountain Salamander	Sensitive	
	Oregon Spotted Frog	Endangered	Threatened
	Western Toad	Candidate	
Reptiles	Northwestern Pond Turtle	Endangered	Proposed Threatened
Birds	Common Loon	Sensitive	
	Marbled Murrelet	Endangered	Threatened
	Western Grebe	Candidate	
	W WA nonbreeding concentrations of: Loons, Grebes, Cormorants, Fulmar, Shearwaters, Storm-petrels, Alcids		
	W WA breeding concentrations of: Cormorants, Storm-petrels, Terns, Alcids		
	Great Blue Heron		
	Western High Arctic Brandt		
	Cavity-nesting ducks: Wood Duck, Barrow's Goldeneye, Common Goldeneye, Bufflehead, Hooded Merganser		
	Western Washington nonbreeding concentrations of: Barrow's Goldeneye, Common Goldeneye, Bufflehead		
	Harlequin Duck		
	Trumpeter Swan		
	Tundra Swan		

	Species and Habitats	State Status	Federal Status
	Waterfowl Concentrations		
	Golden Eagle	Candidate	
	Northern Goshawk	Candidate	
	Sooty Grouse		
	W WA nonbreeding concentrations of: Charadriidae, Scolopacidae, Phalaropodidae		
	Band-tailed Pigeon		
	Yellow-billed Cuckoo	Endangered	Threatened
	Northern Spotted Owl	Endangered	Threatened
	Vaux's Swift		
	Black-backed Woodpecker	Candidate	
	Oregon Vesper Sparrow	Endangered	
Mammals	Roosting Concentrations of: Big-brown Bat, Myotis bats, Pallid Bat		
	Townsend's Big-eared Bat	Candidate	
	Cascade Red Fox	Endangered	
	Fisher	Endangered	
	Marten		
	Wolverine	Candidate	Threatened
	Columbian Black-tailed Deer		
	Mountain Goat		
Invertebrates	Elk		
	Blue-gray Taildropper	Candidate	
	Pacific Cluetail	Candidate	
	Beller's Ground Beetle	Candidate	
	Hatch's Click Beetle	Candidate	
	Western Bumble Bee	Candidate	Candidate
	Johnson's Hairstreak	Candidate	
	Valley Silverspot	Candidate	

6.3 Functions and Values

FWHCA functions include the biological, chemical, and physical habitat conditions and processes that affect wildlife. Since wildlife may include all species, from the largest megafauna to microorganisms, these functions encompass a complex web of interacting ecological processes. At the highest level, FWHCAs function to provide wildlife with suitable habitat. They also provide communities with sources of food and materials for consumptive and productive uses. Additionally, they are valued for a range of non-consumptive cultural, social, and economic benefits (Chardonnet et al. 2002).

6.3.1 Streams, Lakes and Ponds, and Riparian Areas

Streams, lakes, ponds, and their associated riparian areas provide critical habitat for a diverse array of wildlife species. They also provide various landscape and ecosystem functions. Commonly recognized

functions and processes that influence the habitat conditions within aquatic FWHCA types are outlined below.

Water Quality

- Fish and other wildlife like amphibians require cool, clean water to meet their life history needs.
 - Riparian vegetation influences stream temperatures and microclimate conditions such as air temperature, wind, light, and moisture. Factors affecting water temperature and microclimate include shade, orientation, relative humidity, ambient air temperature, wind, channel dimensions, groundwater, hyporheic exchange, and overhead cover (Quinn, Wilhere, and Krueger 2020).
 - Salmonids have been studied frequently due to their cultural and economic importance, relative sensitivity to high temperatures, and narrow thermal tolerance (Quinn, Wilhere, and Krueger 2020). Amphibians also have narrow thermal tolerances, and they are particularly sensitive to changes in microclimate conditions (Bury 2008).

Hydrologic

- Streams, lakes, and ponds may have complex and extensive connections to other surface waters and groundwater resources in a watershed.
 - Hydrologic forces move material downstream.
- Fish and wildlife are adapted to, and in some instances reliant upon, the natural variability in seasonal and flood flows within a system.
- Riparian vegetation reduces the quantity of surface water runoff through rainwater capture and evapotranspiration (Wynn and Mostaghimi 2007).
- Floodplains, wetlands, and sinuous stream channels attenuate flood flows, which protects downstream areas from flooding.

Physical Habitat Characteristics

- Riparian microclimate affects many ecological processes and functions, including plant growth, decomposition, nutrient cycling, succession, productivity, migration and dispersal of flying insects, soil microbe activity, and fish and amphibian habitat (Brosofske et al. 1997).
- Large woody debris (LWD) plays a significant role in the geomorphic formation of stream channels and in the creation of diverse channel habitat morphologies (Quinn, Wilhere, and Krueger 2020)
- Streams migrate naturally which often results in complex natural geomorphology, floodplains, and heterogeneous ecosystems.
 - Bank stability is influenced by factors such as bank material, hydraulic forces, and vegetation (Ott 2000).
- Beaver dams incorporate both small and large wood, and serve to slow water, retain sediment, and create pools and off-channel ponds used by rearing coho salmon and cutthroat trout (Pollock et al. 2004; Robert J. Naiman, Johnston, and Kelley 1988)

6.3.1.1 Urbanization Impacts

Urbanization affects natural surface waters and riparian areas (and associated fish and wildlife) in significant and numerous ways. This section outlines the mechanisms by which urbanization impacts the key functions and processes previously described.

Changing Landcover and Impervious Surfaces

- Removal of riparian vegetation impacts water quality by increasing stream temperatures (Beschta 1987; Murray, Edmonds, and Marra 2000; A. Moore and Palmer 2005; Gomi, Moore, and Dhakal 2006).
- Widespread removal of forested areas in a watershed is likely to create unstable channels (Booth et al. 2004). Increased erosion and bank instability coupled with a reduction of forest cover simplify stream morphology, leading to incised, wider, and straighter stream channels (Konrad and Booth 2005).
- Impervious surfaces impact hydrologic functions.
 - Impervious surface is positively correlated with high flow volumes, daily streamflow variability and negatively correlated with groundwater recharge rates and summer low flow volumes (Burgess, Wigmosta, and Meena 1998; Cuo et al. 2009; Konrad and Booth 2005)
 - Flows become more synchronized and become more variable and volatile (Sheldon et al. 2005).
 - Less dynamic stream morphology is linked to accelerated water transport and reduced temporary instream flood storage capacity (Kaufmann and Faustini 2012).
 - Hydrological functions are also altered through soil compaction, draining, and ditching across a landscape (R. D. Moore and Wondzell 2005; Booth et al. 2004).

Habitat Removal, Degradation, and Fragmentation

- Habitat loss, degradation, and fragmentation have profound impacts on wildlife and their ecosystems (Gaston 2010; Wiegand, Revilla, and Moloney 2005; Young et al. 2016).
- Anthropogenic inputs and disturbance from high-intensity land uses (e.g., noise, light, physical intrusions by people and pets, pollution, garbage, etc.) degrade retained habitats in urban settings.
- Fragmentation from roads, fences, buildings, and various land uses restrict interpatch movements and migrations in urban landscapes Wiegand, Revilla, and Moloney 2005.
- Urban areas tend to contribute a disproportionate amount of sediment and contaminants to receiving waters (Soranno et al. 1996). Heavy metals, bacterial pathogens, as well as PCBs, hydrocarbons, and endocrine-disrupting chemicals are aquatic contaminants that are commonly associated with urban and agricultural land uses.
 - Some contaminants have significant effects on aquatic organisms. For example, coho salmon pre-spawn mortality is caused by a breakdown product of tire wear, 6PPD-quinone (Tian et al. 2021). Coho pre-spawn mortality is also positively correlated with the relative proportion of roads, impervious surfaces, and commercial land cover within a basin (Feist et al. 2011).

- Fine sediment adversely affects stream habitat (Jensen et al. 2009; Galbraith et al. 2006; Knutson et al. 2004)
- Cumulative impacts of direct and indirect habitat alterations, including hydrologic changes, compromised water quality, and habitat fragmentation tend to reduce the habitat functions and values of wetlands and riparian areas (Azous and Horner 2010; Sheldon et al. 2005).

6.4 Key Protection Strategies

6.4.1 Identification and Classification

Numerous online resources are available that can be used to aid in determining likely presence or absence of the various types of FWHCAs. Several important online mapping tools are listed below; however, this list is not exhaustive. Not all FWHCAs are mapped, and anything identified online should be verified in the field by a qualified biologist.

- National Oceanic and Atmospheric Administration Fisheries Maps
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation online tool
- WDFW Priority Habitats and Species Database (PHS on the Web)
- Washington State Department of Natural Resources (DNR) Natural Heritage Program Data Explorer
- Streams are mapped by Mountlake Terrace and other Snohomish County and Washington State agency resources.

6.4.1.1 Waters of the State

Waters of the state include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands⁴ and all other surface waters and watercourses (RWC 90.48.020, WAC 173-201A-020). The ordinary high water mark (OHWM) is typically used to determine the edge of surface waters for jurisdictional purposes. However, for tidal waters, the USACE uses the high tide line to determine jurisdiction, while Ecology uses the OHWM if present or the line of mean higher high tide if the OHWM cannot be found. The definition and guidance for determining OHWM is slightly different between the USACE and Ecology, but are largely similar. The OHWM should be determined in the field by a qualified biologist using one of the following manuals:

- *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (David et al. 2025)
- *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et al. 2016)

DNR classifies streams and other water bodies using a the “water typing system” based on various characteristics, fish use, and functions of a natural water feature (WAC 222-16-030), summarized in

⁴ Wetlands, while considered a type of water of the state, are typically regulated in a separate section of a local jurisdiction’s critical areas regulations.

Table 2. Characteristics common to water typing systems are flow volume, fish use and accessibility, seasonality, and presence of salmonids. Mountlake Terrace currently uses this water typing approach with additional consideration for anadromous fish and threatened and endangered species. However, the latest riparian management zone guidance from WDFW does not use the water typing system, but instead treats all streams equally and differentiates protection based on soil type and associated dominant tree species (Rentz et al. 2020). This new riparian management zone guidance is discussed further in Section 6.4.2.2.

Table 2. Water type classifications using DNR’s water typing system.

Type	Description
Type S Shoreline	Streams and waterbodies that are designated “shorelines of the state” as defined in chapter 90.58.030 RCW.
Type F Fish	Streams and waterbodies that are known to be used by fish, or meet the physical criteria to be potentially used by fish. Fish streams may or may not have flowing water all year; they may be perennial or seasonal.
Type Np Non-Fish	Streams that have flow year round and may have spatially intermittent dry reaches downstream of perennial flow. Type Np streams do not meet the physical criteria of a Type F stream. This also includes streams that have been proven not to contain fish using methods described in Forest Practices Board Manual Section 13.
Type Ns Non-Fish Seasonal	Streams that do not have surface flow during at least some portion of the year, and do not meet the physical criteria of a Type F stream.

Hall Creek, McAleer Creek, and Lyon Creek are all basins which contain ESA listed salmon and trout, which can affect how stream buffers are regulated in the city. These streams are designated as gradient accessible in the Statewide Washington Integrated Fish Distribution map, indicating that the waters contain suitable habitat but are not documented to be present by field studies.

6.4.2 Management Resources and Standards

6.4.2.1 Buffers based on Water Typing

Most jurisdictions in Washington State have managed stream and riparian habitats using buffers which are determined by a specific water type classification. This protection mechanism arose in the forestry industry after stream habitats were impacted during the industrial forestry expansion in the mid-20th century (Richardson, Naiman, and Bisson 2012). The benefit of the set-width prescriptive buffer is that it is relatively simple to establish, implement, and administer. If fixed-width buffers are implemented, buffers should be sufficiently wide to ensure that riparian buffers are effective under a range of variable conditions. The latest BAS and state guidance recommends a conceptual shift from the fixed-width buffer approach regarding the way that streams and riparian areas are protected, as described in the next section.

6.4.2.2 Riparian Management Zones

In 2020, WDFW developed BAS guidance for the protection of riparian areas (Quinn, Wilhere, and Krueger 2020; Rentz et al. 2020). The guidance emphasizes a shift in terminology and framework from the concept of “stream buffers” to “riparian management zones” (RMZs). A RMZ is defined as “...a scientifically based description of the area adjacent to rivers and streams that has the potential to provide full function based on the SPTH [site potential tree height] conceptual framework.” Further, a RMZ is recommended to be regulated as a fish and wildlife habitat conservation area itself to protect its fundamental value, rather than as a buffer for rivers and streams (Rentz et al. 2020).

WDFW’s current recommendations for establishing RMZ widths are based primarily on a site potential tree height (SPTH) framework. The SPTH is defined as “...the average maximum height of the tallest dominant trees (200 years or more) for a given site class” (Rentz et al. 2020). To apply their methodology, WDFW has developed a web-based mapping tool for use in determining SPTH based on the 200-year site index. Modeled SPTHs range from 75-231 feet (Rentz et al. 2020).

WDFW recommends using the SPTH value as the basis for the RMZ width, measured from the edge of the channel migration zone or OHWM where a channel migration zone is not present. Exceptions may occur where the SPTH is less than 100 feet, in which case the agency recommends assigning an RMZ width of 100 feet at a minimum to provide adequate biofiltration and infiltration of runoff for water quality protection from most pollutants, but also in consideration of other habitat-related factors including shade and wood recruitment. A 100-foot-wide buffer is estimated to achieve 95 percent pollution removal and approximately 85 percent surface nitrogen (Rentz et al. 2020).

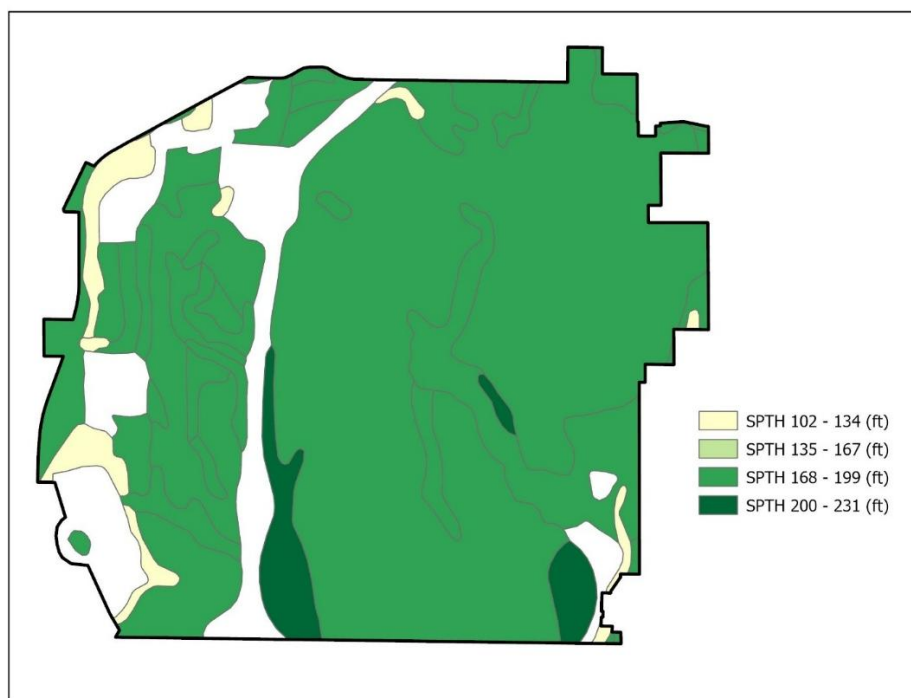


Figure 6. SPTH₂₀₀ distribution in Mountlake Terrace, white indicates no data. Map produced from data obtained from WDFW and NRCS (WDFW and NRCS 2024).

Acknowledging that establishing functional RMZs using the recommended methods may not be practical in many developed areas, WDFW recommends effective watershed management, preservation, and protection, resulting in nearly full restoration of riparian ecosystem habitat functions as is feasible within existing constraints. Other WDFW management recommendations for urban riparian ecosystems include delineating stream ordinary high water marks and associated riparian management zones, document current conditions and target degraded riparian areas for restoration, maintain or improve functions through regulations and voluntary measures, prioritize opportunities to maintain and restore in-stream and riparian connectivity, manage stormwater following latest Ecology manual, and require stormwater retrofit for redevelopment projects (Rentz et al. 2020).

BAS-based literature points to a range of recommended management measures and buffer considerations to help maintain habitat functions for fish and wildlife. Effective methods to reduce impacts from urbanization and manage associated runoff can include the following:

- Limiting or consolidating development densities and impervious surface coverage;
- Limiting vegetation clearing and retaining forest cover;
- Concentrating impact activities, particularly roads and pollutant sources, away from watercourses;
- Limiting the total area of roads and requiring joint use of new access roads;
- Protecting vegetation and limiting development on or near hydrologic source areas;
- Maintaining densely vegetated riparian buffers with native trees, shrubs, and groundcover species;
- Low impact development (LID);
- Municipal stormwater treatment;
- Public education.

To achieve improved water quality in the City's streams, lakes, and ponds, riparian buffer areas should be utilized effectively to provide both biofiltration of stormwater runoff and protection from adjacent land uses. Both goals can be achieved by providing dense, well-rooted vegetated buffer areas.

Biofiltration swales, created wetlands, and infiltration opportunities for specific stormwater runoff discharges can be utilized to intercept runoff before it reaches stream channels. Stormwater runoff that is conveyed through stream buffers in pipes or ditch-like channels and discharged directly to stream channels "short circuits" or bypasses buffer areas. To maintain buffer functions, including water quality treatment via biofiltration, discharges should be dispersed in outer buffer areas. In areas where stormwater flows untreated through riparian buffer areas, the buffer is underutilized and is prevented from providing the intended or potential biofiltration function.

6.4.2.3 Endangered, Threatened, or Sensitive Species; Species of Local Importance; and their Habitats

Effective BAS-based strategies can be applied to protect state and federally listed endangered or threatened species and WDFW-identified Priority Species and Habitats (PHS). WDFW, USFWS, and

NMFS provide information on species-specific management recommendations that can be used to guide management at the city-level or site-level. There is widely available information for high profile species, though many regulated species are poorly researched and lack specific management recommendations from state agencies. Where species or habitat-specific management recommendations are available from WDFW guidance documents, those should be followed or adapted to local regulations. General recommendations for management strategies to protect terrestrial habitat are listed below.

General Terrestrial Habitat Management Recommendations

- Existing high-quality habitats should be retained because habitat loss is one of the most important factors influencing biodiversity and loss of species (Beninde, Veith, and Hochkirch 2015).
- Generally, plan development to minimize fragmentation of native habitat, particularly large, intact habitat areas. Where large forest stands exist, manage for forest-interior species and avoid fragmentation (Donnelly and Marzluff 2004; Diffendorfer, Gaines, and Holt 1995; Mason et al. 2007; Pardini et al. 2005; WDFW 2009)
- Manage agricultural development to limit fragmentation and edge; preserve vegetative structural diversity whenever possible in agricultural areas by retaining hedge rows and areas of native vegetation (Southerland 1993).
- Protect priority habitats that have a primary association with an ESA-list species or species of local importance by continuing to regulate for adherence to WDFW management recommendations and other applicable regulatory requirements.
- Control invasive species where needed on a site- and species-specific basis. Address invasive species specifically in areas where environmental conditions tend to promote infestation, including created edges, roadways, and riparian zones where they are contiguous with developed areas that may act as a seed source (McKinney 2002; Olden et al. 2004; Pimentel, Zuniga, and Morrison 2005).
- Maintain or provide habitat connectivity with vegetated corridors between habitat patches (Gilbert-Norton et al. 2010).
- Protect, maintain, and promote habitat features such as snags and downed wood (Blewett and Marzluff 2005).
- Manage for increase native vegetative cover in landscaping and discourage lawns (Nelson and Nelson 2001).
- Plan habitat areas away from roads (Fahrig et al. 1995; Lehtinen, Galatowitsch, and Tester 1999).
- Promote buffers of adequate width to support wildlife guilds in adjacent habitat (Ficetola, Padoa-Schioppa, and De Bernardi 2009; Semlitsch and Bodie 2003; Crawford and Semlitsch 2007).
- Identify existing habitat patches and corridors and maintain connectivity with vegetated corridors to limit fragmentation and edge habitat (Gillies and St. Clair 2008; Gilbert-Norton et al. 2010). Preserve habitat patches of at least moderate size 35 ha (86 ac) within developed areas (Kissling and Garton 2008).

- Promote restoration of FWHCAs, buffers, and other management zones through critical area regulations and public outreach. Encourage stewardship on a parcel by parcel and county-wide scale.

6.5 Climate Change Effects

6.5.1 Strategies to Manage Climate Change Impacts on FWHCAs

Climate change is predicted to result in significant and irreversible impacts to fish and wildlife, and their habitats. Global climate change is anticipated to result in habitat loss and modification through temperature changes, sea level rise, ocean acidification, extreme weather events, changes in precipitation, biological invasions, food web disruptions, and disease (Lyons, LeDee, and Boyles 2022; Nagelkerken et al. 2023). The range of effects on fish and wildlife depend on species specific interactions and may include range shifts, phenological shifts, changes to morphology and behavior, biodiversity loss, and extinction (Sattar et al. 2021). The cumulative impact of these factors on wildlife is anticipated to result in loss of biodiversity and increases to extinction rates (Sattar et al. 2021).

Changes in temperatures and seasonal precipitation patterns are projected to place additional stressors on FWHCAs. Some loss of riparian vegetation is anticipated due to the stresses of climate change, primarily warmer and drier summers. A reduction in riparian vegetation potentially triggers a cascading effect. A decrease in riparian vegetation would decrease shading, increase stream temperature, decrease detrital inputs, reduce available habitat structure, and reduce stream bank stability. Changes in seasonal hydrologic cycles may increase frequency and magnitude of flashy runoff events, mobilize greater volumes of sediments and pollutants into streams, and reduce groundwater recharge that supports base stream flows in summer. Instream habitats are particularly negatively impacted by excess sediment discharge and deposition.

Hot dry summers are projected to reduce stream flow volumes and increase instream temperatures. This stressor is compounded by extreme precipitation events, flooding and erosion. All these stressors reduce instream habitat quality and stress salmonid populations, including Chinook salmon, the preferred food source for Orca whales. Global warming poses a threat to freshwater fish habitat (Crozier, Zabel, and Hamlet 2008).

The following actions or policies have been developed for other local jurisdictions in coordination with the University of Washington Climate Impacts Group, and are potential strategies that Mountlake Terrace could use to reduce negative climate change impacts on FWHCAs (Redmond et al. 2022).

- Promote retention of trees and forests and maintain tree replacement and reforestation requirements.
- Encourage and incentivize enhancement and restoration of native forest patches throughout the City, particularly where connectivity to one or more FWHCAs is identified. Both voluntary and required restoration planting should be paired with monitoring and maintenance that allows for dry season irrigation and adaptive management.

- Consider assisted migration for seed selection of native plants from locations that are better adapted to future climate conditions.
- Manage stormwater infrastructure to avoid and minimize discharges of increased and/or untreated runoff to streams and thereby offset the anticipated increase in intensive rainfall events. Promote the use of LIDs as a tool to effectively manage stormwater for minimal downstream impacts.
- Update and maintain regulations for habitats and species of local importance. This may include adding mapping resources to help identify the locations of potential habitats and species requiring protection and management.
- Prioritize protection of streams and riparian corridors to reduce the stresses of climate change on native fish species and anadromous fish, such as chinook salmon.
- Identify and protect cold water refugia in waterbodies.
- Conduct vulnerability assessments and climate action plans.

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APPENDIX A. Ecology Wetland Buffer Guidance

Appendix C. Buffer Approaches for Western Washington

Option 1

Table 1. Wetland buffer width requirements, in feet, if Table 2 is implemented and a habitat corridor is provided

Category of wetland	Habitat score 3-5 points (corridor not required)	Habitat score 6-7 points	Habitat score 8-9 points	Buffer width based on special characteristics
Category I or II: Based on rating of wetland functions (and not listed below)	75	110	225	NA
Category I: Bogs and Wetlands of High Conservation Value	NA	NA	225	190
Category I: Interdunal	NA	NA	225	NA
Category I: Forested	75	110	225	NA
Category I: Estuarine and wetlands in coastal lagoons	NA	NA	NA	150
Category II: Interdunal	NA	NA	NA	110
Category II: Estuarine and wetlands in coastal lagoons	NA	NA	NA	110
Category III: All types except interdunal	60	110	225	NA
Category III: Interdunal	NA	NA	NA	60
Category IV: All types	40	40	40	NA

Impact minimization measures

Developments that produce the listed disturbances and are requesting a buffer reduction are required to address the disturbance through the use of applicable minimization measures.

This is not a complete list of measures, nor is every example measure required. Though not every measure is required, all effort should be made to implement as many measures as possible. Regulatory staff should determine, in coordination with the applicant, which measures are applicable and practicable.

Table 2. Impact minimization measures

Examples of disturbance	Activities and uses that cause disturbances	Examples of measures to minimize impacts
Lights	• Parking lots • Commercial/Industrial • Residential • Recreation (e.g., athletic fields) • Agricultural buildings	• Direct lights away from wetland • Only use lighting where necessary for public safety and keep lights off when not needed • Use motion-activated lights • Use full cut-off filters to cover light bulbs and direct light only where needed • Limit use of blue-white colored lights in favor of red-amber hues • Use lower-intensity LED lighting • Dim light to the lowest acceptable intensity
Noise	• Commercial • Industrial • Recreation (e.g., athletic fields, bleachers, etc.) • Residential • Agriculture	• Locate activity that generates noise away from wetland • Construct a fence to reduce noise impacts on adjacent wetland and buffer • Plant a strip of dense shrub vegetation adjacent to wetland buffer
Toxic runoff	• Parking lots • Roads • Commercial/Industrial • Residential areas • Application of pesticides • Landscaping • Agriculture	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft. of wetland • Apply integrated pest management (These examples are not necessarily adequate for minimizing toxic runoff if threatened or endangered species are present at the site.)

Examples of disturbance	Activities and uses that cause disturbances	Examples of measures to minimize impacts
Stormwater runoff	• Parking lots • Roads • Residential areas • Commercial/industrial • Recreation • Landscaping/lawns • Other impermeable surfaces, compacted soil, etc.	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized or sheet flow from lawns that directly enters the buffer • Infiltrate or treat, detain, and disperse new runoff from impervious surfaces and lawns
Pets and human disturbance	• Residential areas • Recreation	• Use privacy fencing • Plant dense native vegetation to delineate buffer edge and to discourage disturbance • Place wetland and its buffer in a separate tract • Place signs around the wetland buffer every 50-200 ft., and for subdivisions place signs at the back of each residential lot • When platting new subdivisions, locate greenbelts, stormwater facilities, and other lower-intensity uses adjacent to wetland buffers
Dust	• Tilled fields • Roads	• Use best management practices to control dust

Table 3. Wetland buffer width requirements, in feet, for applicants not providing a habitat corridor or implementing measures in Table 2

Category of wetland	Habitat score 3-5 points	Habitat score 6-7 points	Habitat score 8-9 points	Buffer width based on special characteristics
Category I & II: Based on rating of wetland functions (and not listed below)	100	150	300	NA
Category I: Bogs and Wetlands of High Conservation Value	NA	NA	300	250
Category I: Interdunal	NA	NA	300	NA
Category I: Forested	100	150	300	NA
Category I: Estuarine and wetlands in coastal lagoons	NA	NA	NA	200
Category II: Interdunal	NA	NA	NA	150
Category II: Estuarine and wetlands in coastal lagoons	NA	NA	NA	150
Category III: All types except interdunal	80	150	300	NA
Category III: Interdunal	NA	NA	NA	80
Category IV	NA	NA	NA	50

Conditions for implementing Tables 1, 2, and 3

1. Wetlands that score 6 points or more for habitat function: the buffers in Table 1 can be used only if all of the following criteria are met:
 - a. A relatively undisturbed, vegetated corridor at least 100 feet wide is protected between the wetland and:
 - i. A legally protected, relatively undisturbed and vegetated area (e.g., Priority Habitats, compensatory mitigation sites, wildlife areas/refuges, national, county, and state parks where they have management plans with identified areas designated as Natural, Natural Forest, or Natural Area Preserve, or
 - ii. An area that is the site of a Watershed Project identified within, and fully consistent with, a Watershed Plan as defined by RCW 89-08-460, or
 - iii. An area where development is prohibited according to the provisions of the local shoreline master program, or
 - iv. An area with equivalent habitat quality that has conservation status in perpetuity, in consultation with WDFW.
 - b. The corridor is permanently protected for the entire distance between the wetland and the shoreline or legally protected area by a conservation easement, deed restriction, or other legal site protection mechanisms.
 - c. Presence or absence of the shoreline or Priority Habitat must be confirmed by a qualified biologist or shoreline Administrator.
 - d. The measures in Table 2 are implemented, as applicable, to minimize the impacts of the adjacent land uses.
2. For wetlands that score 5 or fewer habitat points, only the measures in Table 2 are required for the use of the buffers in Table 1.
3. If an applicant does not apply the mitigation measures in Table 2 or is unable to provide a protected corridor, then the buffers in Table 3 shall be used.
4. The buffer widths in Tables 1 and 3 assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer must either be planted to create the appropriate native plant community or be widened to ensure that the buffer provides adequate functions to protect the wetland.

Note: An expanded table with graduated buffer widths based on habitat score is also outlined in the [July 2018 Appendix 8-C](#)⁷⁶ of *Wetlands in Washington State, Volume 2*. This is an approach that assigns unique buffer widths to each habitat score in seven increments. It is a gradual increase in buffer width with each point. Compared to Option 1, this avoids a marked increase in buffer width resulting from an increase of one point in the habitat score.

Option 2

Table 1. Width of buffers, in feet, needed to protect wetlands from impacts of proposed land uses (used with Table 2)

Category of wetland	Land use with low impact*	Land use with moderate impact*	Land use with high impact*
I	150	225	300
II	150	225	300
III	75	110	150
IV	25	40	50

*See Table 2 below for types of land uses that can result in low, moderate, and high levels of impacts to wetlands

Table 2. Levels of impacts from proposed land use types

[Local governments are encouraged to ensure the uses in this table match the uses specified in their development and land use regulations and are consistent with the principles in this example.]

Level of impact from proposed land use	Types of land use
High	• 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 • Agriculture with high-intensity activities (dairies, nurseries, greenhouses, growing and harvesting crops requiring annual tilling, raising and maintaining animals, etc.)

⁷⁶ <https://apps.ecology.wa.gov/publications/parts/0506008part3.pdf>

Level of impact from proposed land use	Types of land use
	• Open/recreational space with high-intensity uses (golf courses, ball fields, etc.) • Solar farms (utility scale)
Moderate	• 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.) • Agriculture with moderate-intensity uses (orchards, hay fields, light or rotational grazing, etc.) • Utility corridor or right-of-way used by one or more utilities and including access/maintenance road • Wind farm
Low	• 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

Option 3

Table 1. Wetland buffer width requirements, in feet, based solely on wetland category

Category of wetland	Buffer width
I	300
II	300
III	150
IV	50



Formerly DCG/Watershed

TECHNICAL MEMORANDUM

Date:	September 26, 2025
To:	Sara Pizzo, AICP, Senior Planner
From:	Alex Capron, AICP, Senior Planner; Nathan Burroughs, GIS Analyst
CC:	Dan Nickel, MSc, Long Range Planning Director; Christy Osborn, Planning Director (Mountlake Terrace)
Project Name:	Mountlake Terrace CAO Update
Facet Number:	2411.0456.00

GMA Compliance & Stream Buffer Regulation Options

This memo presents options for regulating stream buffers under the Critical Areas Ordinance (CAO) in Mountlake Terrace. The City is considering updates to improve stream function and protection over existing conditions, improve consistency with state and federal guidance, and support restoration goals in a highly urbanized environment. Further, staff are considering alternative options to balance the Best Available Science (BAS) with Growth Management Act mandates for growth in both population and jobs over the next 20 years.

Staff are evaluating changes to buffer measurement methods city-wide and ramifications from an acreage perspective. The following options compare varying levels of protection, implementation complexity, and ecological benefit to support informed decision-making during the CAO update process.

Growth Management Act

With a growth expectation of 1.8% between 2023 and 2044, Mountlake Terrace is expected (and assigned) to receive 7,683 additional housing units and 2,717 jobs over the next 20 years¹. As a compact City currently undergoing modest infill and redevelopment, Mountlake Terrace has a unique opportunity to further and continually accelerate middle housing goals (per the City's adopted Housing Action Plan) and employment efforts in the coming years, as required by Puget Sound

¹Source: *Vision 2044 Mountlake Terrace Comprehensive Plan. Growth Targets, Table 02 (P. 32)*. Accessed Sept 2025.

Regional Council (PSRC) and highlighted recently in various adopted Comprehensive Plan lawsuits filed successfully by Futurewise².

As noted within the Comprehensive Plan Housing Element, the City has received no 2-4 unit dwelling unit applications since 2002 (includes fee simple unit lot subdivision, and/or short plat and), exacerbating the effects of needed affordable middle housing within originally platted, large grid-style single-family properties found within the original City limits, when incorporated in 1954³.

Impacts to single-family residential lots, not to mention multi-family, town center and commercial areas will impact both PSRC mandated housing and jobs for an incredibly compact City, currently the 11th highest density City in Washington State (20,318 population over four-square miles) at 4,881.8 residents/sq mi⁴.

Comparison of Stream Buffer Options

As part of Mountlake Terrace's Critical Areas Ordinance (CAO) update, staff are evaluating revisions to stream buffer standards to reflect BAS, implementation efficiency, and restoration incentives. Recent policy directions include:

1. Retain legacy buffers where a recorded Native Growth Protection Area (NGPA) exists.
2. Add stream daylighting and stream meandering standards to encourage ecological restoration.

The table below outlines four policy options for stream buffer regulations in Mountlake Terrace, ranging from retaining existing buffer widths to adopting Site Potential Tree Height (SPTH) for trees, based on WDFW-mapped SPTH₂₀₀-based buffers, as discussed in our BAS and Gap Analysis Reports.

Each option is evaluated for its ecological alignment, regulatory complexity, and impact on land use (see Pros and Cons column). While maintaining current buffers offers predictability, it underperforms relative to BAS. Increasing Type N streams to minimum 100-foot buffer provides moderate ecological improvement with manageable implementation. The SPTH₂₀₀-based approach offers the highest ecological benefit but would significantly expand buffer areas and require more technical resources.

Table 1. Comparison of Buffer Policy Options

Option	Description	Pros	Cons
Keep Buffers the Same, 100-foot Type F Streams, 50-	1. Retain current widths	1. Familiar and predictable	1. Inconsistent with WDFW SPTH guidance

² Source: Futurewise Active Legal Appeals. <https://futurewise.org/active-legal-appeals/>. Accessed Sept 2025.

³ Source: Mountlake Terrace History. <https://www.cityofmlt.com/405/History#:~:text=The%20City%20of%20Mountlake%20Terrace,Council%20Manager%20form%20of%20government>. (Accessed Sept. 2025)

⁴ Source: <http://www.usa.com/rank/washington-state--population-density--city-rank.htm> (Accessed Sept. 2025)

foot Type N (reference only; City not considering at this time, retains 15-foot building setback)	2. Must be measured from OHWM in field, per regulation. Utilizes GIS polyline for measurements.	2. Minimal regulatory change 3. Easier transition to OHWM baseline	2. Under protects stream functions 3. Falls short of ecological function targets 4. This impacts 223 parcels ⁴ (see assumption below)
1. Increase Type F to 150' and Type N (Np and Ns) to 100', retain slightly reduced 10-foot building setback (from 15-feet originally, per current CAO)	1. Increase Type F to 150', retain 10-ft building setback 2. Increase Type N to 100', retain 10-ft building setback.	1. High ecological function across all stream types 2. Closely aligns with SPTH200 averages 3. Retains stream classification distinctions	1. Increase in regulated area – 190.5 acres for Type F Streams; 26.8 acres for Type N Streams 2. Adjusts the number of properties subject to critical area permitting, 321 parcels for Type F streams; 33 parcels for Type N streams
1a. Increase Type F to 150' and Type Ns and Type Np to 100'	1. Increase Type F to 150' 2. Increase Type Ns and Np to 100'	1. High ecological function across all stream types 2. More closely aligns with SPTH200 averages 3. Retains stream classification distinctions	1. Increase in regulated area – 178.7 acres for Type F Streams; 24.4 acres for Type N Streams 2. Increases the number of properties subject to critical area permitting, 309 parcels for Type F streams; 31 parcels for Type N streams

2. Incremental Increase of all streams by 25 ft. + retain 10-foot (reduced) building setback <i>(from 15-feet originally)</i>	1. Increase Type F to 125' (135' total protected area) 2. Increase Type N to 75' (85' total protected area)	1. Improves habitat function for Type N streams 2. Moves closer to BAS compliance 3. Moderate impact on development	1. Still below SPTH200 average of 173 feet 2. May under protect high-SPTH corridors 3. Impacts include: 279 parcels for Type F buffers, 178.1 additional acres for Fish bearing streams. 31 properties for Type N streams (Ns and Np) with 24.4 additional acres impacted
2a. Incremental Increase of all streams by 25 ft.	1. Increase Type F to 125' 2. Increase Type Ns to 75' 3. Increase Type Np to 75'	1. Improves habitat function for Type N streams 2. Moves closer to BAS compliance 3. Moderate impact on development	1. Below SPTH200 average of 173 feet 2. May under protect high-SPTH corridors 3. Does not allow for clearly delineated maintenance areas around permitted structures 3. Impacts include: 255 properties for Type F buffers, 149.1, additional acres for Fish bearing streams. 25 properties for Type N streams (Ns and Np) with 18.3 additional acres impacted
E. Adopt SPTH200 (WDFW Riparian Management Zone)	1. 102-foot minimum to 231-foot max 2. For this exercise, measured from	1. Fully aligned with BAS and WDFW Vol. 1 & 2	1. Requires extensive mapping & review 2. Significant increase in regulated

BAS) (no building setback analyzed)	stream polyline, not OHWM area (Source: City of MLT GIS, 2025) as well as WDFW SPTH mapped data (see BAS and SPTH Memo, dated September 2025) ⁴	2. Highest ecological benefit 3. Targets function by site	area (~266 new buffer acres) and 412 parcels between. 196 new parcels affected 3. Limits infill/redevelopment as mandated by PSRC under GMA (2044 Comprehensive Plan) 4. 17 parcels not affected by SPTH that are not affected by current regulations (reduction in regulation over existing conditions)
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GIS Data Assumptions:

1. 475 parcels are currently impacted under Type F of 100-foot buffers and Type N of 50-foot buffers. 654 additional ones will be impacted under SPTH mapping. 671 affected by both existing buffers and SPTH. 196 new parcels affected.
2. Buffers measured by polyline, not OHWM.
3. SPTH₂₀₀ measurements are based upon WDFW data and NRCS soils layers. See SPTH Memo (Dated September 2025, prepared by Facet) for details.
4. For planning purposes only – field measurements will require OHWM delineation, not stream represented as polylines, as done through this GIS analysis.

Stream Restoration Standards

Other alternatives to consider when reviewing stream buffer standards in light of revised buffers proposed by the City include incentives for baseline stream standard improvements.

- A. Stream Daylighting
 - a. Applicability: Applies to removal of culverts or restoration of buried stream segments.
 - b. Standard Buffer: A 50-foot buffer from OHWM shall apply to all newly daylighted stream segments, regardless of stream type.
 - c. Performance Criteria:
 - i. Install habitat structures (e.g., LWD, root wads, boulder clusters)
 - ii. Design for channel complexity (e.g., pool-riffle, variable widths)
 - iii. Plant native riparian vegetation (trees, shrubs, groundcover)



iv. Incorporate stormwater pretreatment where feasible

d. Buffer Flexibility:

- i. May be reduced to 25 feet where full buffer is infeasible (i.e. providing prescriptive code standards where existing development is not possible to be altered) and performance criteria are fully met
- ii. Buffer averaging permitted per standard CAO provisions
- iii. Buffer width may supersede legacy NGPA if ecological uplift is demonstrated

Commented [DN1]: Are there any stipulations on this? I.e. where existing development is not possible to be altered?

B. Stream Meandering and Reconfiguration

- a. Purpose: Encourages reconfiguring straightened or confined stream channels to improve natural processes.
- b. Standards
 - i. Allowed within existing stream buffer if results in net ecological gain
 - ii. Must include riparian enhancement, bank stabilization, and instream complexity
 - iii. A critical areas report must show improved function (e.g., habitat, flow attenuation, sediment retention)



FACET

Formerly DCG/Watershed

Critical Areas Ordinance Gap Analysis

Mountlake Terrace Municipal Code, CAO Update

CHAPTER 16.15 CRITICAL AREAS

MAY 2025

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The information contained in this report is based on the application of technical guidelines currently accepted as the best available science. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state and federal regulatory authorities. No other warranty, expressed or implied, is made.

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Appendices

APPENDIX A. Ecology's Wetland Buffer Width Recommendations

1. Introduction

With passage of the Growth Management Act (GMA), local jurisdictions throughout Washington State, including the City of Mountlake Terrace (City), were required to develop policies and regulations to designate and protect critical areas. Critical areas are defined in the GMA and the Revised Code of Washington (RCW) 36.70A.030(5) to include wetlands, fish and wildlife habitat conservation areas, frequently flooded areas, critical aquifer recharge areas, and geologically hazardous areas. The GMA requires local jurisdictions to periodically review and evaluate their adopted critical areas policies and regulations.

An ongoing requirement of the GMA is for local jurisdictions to periodically review and evaluate their adopted critical areas policies and regulations. In accordance with the GMA, the City last completed a comprehensive update of its critical areas policies and regulations in 2004. The City is now required to update its critical areas policies and regulations by December 31, 2025. This includes the requirement to review and incorporate best available science (BAS). Any deviations from science-based recommendations should be identified, assessed and explained (Washington Administrative Code [WAC] 365-195-915). In addition, jurisdictions are to give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. A BAS review for this code update is summarized in the *Best Available Science Review* (Facet, May 2025).

The City's critical areas policies are currently contained in the Environmental Element chapter of the Mountlake Terrace Vision 2044 Comprehensive Plan (Comprehensive Plan) adopted October 2024. The City's critical areas regulations are currently codified in the Mountlake Terrace Municipal Code (MTMC), Title 16, Chapter 15 Critical Areas.

This gap analysis is a review of the current critical areas regulations with evaluation of gaps in consistency between the existing regulations and BAS or the GMA. This analysis also includes recommendations for improvements to general aspects of the critical areas ordinance (CAO) such as clarity, consistency, and ease of use. The primary intention of this gap analysis is to help guide the update of the City's critical areas policies and regulations.

Recommendations for updating the City's existing critical area regulations are provided in Sections 2 through 8. Section 2 addresses the general provisions that are applicable to all critical areas; Sections 3 through 8 address the different types of critical areas covered by the GMA, according to how they are organized in the current code and Section 9 provides definitions for terms found throughout the chapter. To highlight findings of the gap analysis, a code review summary table is provided at the beginning of each section. Where a potential gap is identified, subsections provide further discussion.

2. General Provisions (Sections 16.15.010 – 16.15.390)

This section addresses code sections that are applicable to all types of critical areas. This includes MTMC 16.15.010 through 16.15.390. A summary of recommended updates is provided in Table 1.

Table 1. General Provisions review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.010	Purpose and intent.	None	
16.15.020	Applicability.	Update areas considered adjacent to critical areas	Consistency with GMA
16.15.030	Designation, classification and delineation of critical areas.	None	
16.15.040	Critical area buffers and setbacks.	None	
16.15.050	Decision authority.	None	
16.15.060	Conflicts.	None	
16.15.070	Relationship to other codes and regulations.	None	
16.15.080	Lands to which	None	
16.15.090	Regulated Activities	None	
16.15.100	Exempt activities.	Provide regulations for nonconforming land uses. Update adjacent areas.	Clarify relation to other titles in the MTMC
16.15.110	Emergencies.	None	
16.15.115	Trees and vegetation – Activities and standards.	None	
16.15.120	Critical area review – process and procedures.	Review and update information to be consistent with available resource, methods, and the standard city review processes	Consistency with BAS and city administration
16.15.130	Applications.	None	
16.15.140	Notice of application.	None	

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.150	Preapplication meeting.	None	
16.15.160	Critical area review – preliminary assessment.	None	
16.15.200	Critical area reports.	None	
16.15.210	Mitigation – Preferred sequencing	Rename for clarity	Consistency with BAS
16.15.220	Mitigation plan – Requirements	None	
16.15.230	Mitigation plans – performance standards.	None.	
16.15.240	Maintenance and monitoring plan.	Clarify the monitoring period starts after an as-built report is approved.	Clarity
16.15.250	Notice on title.	None	
16.15.260	Signs and fencing.	None	
16.15.270	Protective covenants.	None	
16.15.310	Alteration of critical areas.	Recommend noting avoidance is the first step required per MTMC 16.15.210.	BAS
16.15.320	Unauthorized alterations of critical areas.	None.	
16.15.330	Restoration plan.	None	
16.15.340	Guarantees to ensure mitigation, maintenance and monitoring.	None	
16.15.350	Variances.	Recommend removing variance section.	Consistency with BAS
16.15.360	Reasonable use exemptions.	Consider added analysis	Clarity, Administration
16.15.380	Enforcement and penalties.	Review fines and penalties	Consistency with BAS
16.15.385	Appeals of critical area decisions.	None.	
16.15.390	Fees.	Review fees and revise for inflation.	Consistency with BAS

2.1 Applicability (MTMC 16.15.020)

Compliance with GMA regulations requires adding further specifications to areas adjacent to critical areas, a distance equal to or less than three hundred (300) feet upland from a stream, wetland, or water body, within the channel migration zone; and a distance equal to or less than two hundred (200) feet from a critical aquifer recharge area. Review and update MTMC 16.15.020.E to cover these distances.

2.2 Exempt Activities (MTMC 16.15.100).

It is recommended that right-of-way activities that impact wetlands or watercourses—whether directly through alteration or indirectly through transportation-related effects or increased stormwater runoff—should require an increase in buffer widths equivalent to the width of the right-of-way improvement, including all disturbed areas. Additionally, native vegetation within and adjacent to the right-of-way should be retained where possible, and disturbed areas should be replanted with appropriate native species to restore ecological function. Review and consider updates to MTMC 16.15.100.B.17.

2.3 Critical area review – process and procedures (MTMC 16.15.120)

It is recommended that the application requirements be reviewed to ensure they are consistent with the city review process, natural resource data sources, and applicable methods.

2.4 Mitigation – preferred sequencing (MTMC 16.15.210)

Recommend updating title for MTMC 16.15.210 to Mitigation – Sequencing and location. Current use of the term preferred implies the sequencing is optional. However, it is required and central to demonstrating compliance with best available science and associated Ecology guidance.

2.5 Maintenance and monitoring plan (MTMC 16.15.240)

Recommend detailing that a monitoring period starts after an as-built report is submitted and approved by the City. Additionally, the number of monitoring events may be reduced in the first year as is typically standard.

2.6 Alteration of critical areas (MTMC 16.15.310)

This code section appropriately references mitigation sequencing criteria by cross-referencing MTMC 16.15.210. However, MTMC 16.15.310.B.2 should note impact avoidance is required for consistency with mitigation sequencing, a BAS best practice.

2.7 Variances (MTMC 16.15.350)

Recommend updating or removing the variance section to ensure adherence to BAS-based critical area protections. Currently the variance code allows for deviations from development standards, allowed uses, exceptions and exemptions. This is not consistent with BAS-based recommendations.

2.8 Reasonable use exceptions (MTMC 16.15.360)

Improve clarity by requiring a neighborhood land analysis as part of report requirements to be submitted with all reasonable use exception applications. This analysis would evaluate the surrounding conditions within the immediate vicinity to verify that the request is consistent with the reasonable use exception criteria.

2.9 Enforcement and penalties (MTMC 16.15.380)

Review fines and penalties to ensure those figures are in keeping with inflation. If fines and penalties are less than the cost of bringing a project into code compliance, the incentive would not be sufficient. The City may choose to reference a rate sheet rather than stating values in the code. That would give more flexibility in establishing rate values.

3. Wetlands (Sections 16.15.400)

This section addresses code sections that are applicable to wetland critical areas as located in MTMC 16.15.400. A summary of recommended updates is provided in Table 2.

Table 2. Wetlands review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.400.A	Wetland Designations.	None	
16.15.400.B	Wetland Classification.	Revise wetland rating system to most recent iteration	Consistency with BAS
16.15.400.C	Mapping.	None	
16.15.400.D	Allowed Activities and uses in Wetlands and Wetland Buffers.	None	
16.15.400.E	Critical Area Report Requirements – Wetlands.	Review and simplify content requirements	

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.400.F	Wetland Buffers and Setbacks.	Specify native vegetation requirement, review buffer approach, consider removing buffer reduction allowances, address disconnected buffers	Consistency with BAS, clarification of ambiguity
16.15.400.G	Alteration of Wetlands.	Reconsider allowances for wetland alteration	Consistency with BAS
16.15.400.H	Wetland mitigation ratios.	Update mitigation ratios and consider including the Debit-Credit Method	Consistency with BAS
16.15.400.I	Mitigation	None	
16.15.400.J	Wetland Protection.	None	

3.1 Wetland classification (MTMC 16.15.400.B)

A new version of the wetland rating system was released since the code was last revised. The current version of the wetland rating system is the Washington State Wetland Rating System for Western Washington: 2014 Update, Version 2.0 (Hruby & Yahnke 2023). The current Ecology publication number is 23-06-009. We recommend updating this publication reference.

3.2 Critical Area Report Requirements – Wetlands (MTMC 16.15.400.E)

Review critical areas wetland analysis criteria and consider simplifying content requirements. For example, topographic elevations are not necessary in all cases. A detailed analysis of hydrologic conditions is generally not necessary unless on-site wetland re-creation/rehabilitation is proposed.

3.3 Wetland buffers and setbacks (MTMC 16.15.400.F)

Native Vegetation Requirement

It is recommended that standard thresholds for native vegetation requirements be provided with additional detail and clarity so they can be consistently applied and interpreted. BAS buffer recommendations are based on the assumption that the buffer is well vegetated with native species appropriate to the ecoregion. This is not currently stated in the Code. If the buffer does not consist of vegetation adequate to provide the necessary protection, then either the buffer area should be planted or the buffer width should be increased. Ecology suggests the following language be added in the description of required standard buffer widths to ensure a buffer condition that is adequate to protect the wetland resource:

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

To further clarify requirements, the City may choose to include cover requirements for native plant strata and limits for invasive plant cover.

Buffer Widths

The most recent Ecology buffer guidance is the *2022 Wetland Guidance for Critical Areas Ordinance (CAO) Updates*. Our correspondence with Ecology confirms that the 2022 guidance does not supersede the Freshwater Wetlands in Washington State, Volume 2: Managing and Protecting Wetlands, Appendix 8C (updated 2018) and both are considered valid as BAS. However, there are differences in the buffer width frameworks in each of the systems. First is a distinction of terminology, since the 2018 guidance refers to *buffer alternatives* and the 2022 guidance refers to *buffer options*. Hereafter, *2018 buffer alternatives* refer to Ecology (2018), *2022 buffer options* refer to Ecology (2022).

Mountlake Terrace uses a buffer classification system in accordance with Option 1 and meets all of the Department of Ecology's current wetland buffer guidance in the *2022 Wetland Guidance for Critical Areas Ordinance (CAO) Updates*.

Mountlake Terrace considers wetland category and habitat score when assigning buffer widths. Those standard widths can be reduced when applicable minimization measures and potential habitat corridor are applied. The criteria for determining if a habitat corridor is available for a given site is detailed in the Ecology model ordinance, which is part of the 2022 publication.

Buffer Reductions

Ecology recommendations and current BAS do not support buffer reductions. If a buffer reduction is allowed, it is recommended to ensure species have adequate access to habitat without providing a connective corridor. Consider removing the buffer reduction provision and creating a permitted alterations list, as necessary.

Buffer Increases

Mountlake Terrace does not require buffer increases on slopes. Ecology (2018) recommends that buffers are increased by 50% on areas with slopes greater than 30%. The degree of protection that buffers will provide on slopes will differ depending on site-specific circumstances. In practice, this method is reasonable in our opinion to meet the intent of increase buffer width requirements on steep slopes.

Disconnected Buffers

Additionally, Ecology recommends adding a code provision to address functionally disconnected buffers. These are buffer areas that are functionally separated from the wetland by legally established

roads or other significant development. Clear direction should be provided for practical application of buffers.

3.4 Alterations of Wetlands (MTMC 16.15.400.G)

MTMC 16.15.400(G) states that alterations to wetlands and wetland buffers may be permitted given a no net loss of ecological functions and values are provided. This offers wide latitude for impacts to wetlands and buffers in a manner that is inconsistent with the recommendations for critical areas ordinances in Ecology (2022). It is recommended that such alterations be routed through a variance or reasonable use exception and assessed by a hearing examiner rather than administrative channels, and be limited to circumstances that allow reasonable use of the property.

3.5 Wetland mitigation ratios (MTMC 16.15.400.H)

Credit-Debit Method

Ecology encourages allowing the use of the Credit-Debit Method described in Calculating Credits and Debits for Compensatory Mitigation in Wetlands of [Western Washington (Ecology Publication #10-06-011). In addition to the existing mitigation ratios, Mountlake Terrace may consider an option of utilizing this method.

Mitigation Ratios

The mitigation ratios in the MTMC 16.15.400(H) are similar to Ecology's 2018 recommendations, with several noted differences. Specifically, the ratios for *Category IV (All)* per the Wetland Mitigation Ratios table are mitigated less than Ecology's recommendations for *All Category IV* wetlands. Additionally, the *Modified from Appendix 8-C: Guidance on Buffers and Ratios for Western Washington* does not categorize Category I by Mature Forest or Category II by Based on Total Score for Functions. It is recommended that Mountlake Terrace revise the table to match either recommendations in Ecology (2018) or Ecology (2022).

4. Streams (16.15.410)

This section addresses code sections that are applicable to stream critical areas as located in MTMC 16.15.410. A summary of recommended updates is provided in Table 3.

Table 3. Streams review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.410	Streams	Consider combining streams (MTMC 16.15.410 and Wildlife Habitat	Consistency with GMA, state law

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
		(MTMC 16.15.420) into one Fish and Wildlife Habitat Conservation Areas section to align with the GMA.	
16.15.410.A	Stream definition	None	
16.15.410.B	Classification and Rating of Streams.	Review BAS and WDFW guidance and consider updating	BAS, administration
16.15.410.C	Mapping.	Update critical area maps as necessary	
16.15.410.D	Stream Buffer Areas and Setbacks.	Review buffer width against 2020 WDFW guidance and recommendations for Site Potential Tree Height (SPTH). Note: A minimum 100-foot buffer is recommended for all streams to protect water quality. Note: If the city chooses to assign buffer widths that are less than WDFW recommends, the code should address buffer condition requirements and associated native vegetation enhancement requirements. Further, for activities surrounding streams and in consideration of master plans and future recreational access, consider specifying trail width allowances and address disconnected buffers.	Regulatory flexibility
16.15.410.E	Buffer Width Variances.	None	
16.15.410.F	Critical Area Report Requirements – Streams.	None	

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.410.G	Alteration or Development of Stream Areas.	None.	
16.15.410.H	Mitigation Requirements.	None.	
16.15.410.I	Performance Standards for Stream Mitigation Plans.	None.	
16.15.410.J	Stream Protection.	None.	

4.1 Streams

The GMA includes streams in the critical area designation, Fish and Wildlife Habitat Conservation Areas. Consider reorganization to align terminology in with state law.

4.2 Classification and rating of streams (MTMC 16.15.410.B)

Stream Type Classification

The City needs to consider current BAS, including WDFW's site potential tree height (SPTH) model. The SPTH model relies on soil mapping to determine the dominant tree species. It does not use the water typing system. This is summarized in Section 4.2 below.

Shorelines of the State

Shorelines of the State are managed according to MTMC 16.10 Shoreline Master Program (SMP). It is recommended that the critical areas code not include regulations specific to Type S waters which are regulated according to the SMP.

4.3 Stream buffer areas and setbacks (MTMC 16.15.410.D)

Stream Buffers and Riparian Management Zones

In 2020, the WDFW published new guidance for the protection of riparian areas (Quinn et al. 2020). The guidance emphasizes a shift in terminology from the concept of "*stream buffers*" to "*riparian management zones*" (RMZs). An RMZ is defined as "*...a scientifically based description of the area adjacent to rivers and streams that has the potential to provide full function based on the SPTH [site potential tree height] conceptual framework.*" Further, an RMZ is recommended to be regulated as a fish and wildlife habitat conservation area itself to protect its inherent value, rather than as just a buffer for rivers and streams (Rentz et al. 2020). Stream buffers are established in local critical areas ordinances based on the best available science and are intended to protect streams but may or may not provide full riparian function. To achieve full riparian function, the WDFW guidance recommends that RMZs be

considered a delineable, regulatory critical area and that the guidance be applied to all streams and rivers, regardless of size and type.

Site Potential Tree Height (SPTH)

WDFW's current recommendations for establishing RMZ widths are based primarily on a site potential tree height framework, which does not use the DNR water typing system. The site potential tree height is defined as "...the average maximum height of the tallest dominant trees (200 years or more) for a given site class." WDFW refers to this as SPTH₂₀₀. Exceptions may occur where the site potential tree height is less than 100 feet, in which case the agency recommends assigning an RMZ width of 100 feet at a minimum to provide adequate biofiltration and infiltration of runoff for water quality protection from most pollutants, but also in consideration of other habitat-related factors including shade and wood recruitment. A 100-foot-wide buffer is estimated to achieve 95% pollution removal and approximately 85% removal of surface nitrogen (Rentz et al. 2020). WDFW recommends measuring RMZ widths from the outer edge of the channel migration zone, where present, or from the ordinary high-water mark where a channel migration zone is not present.

Riparian management zones or buffers that vary by location may present practical challenges for implementation and have considerations in equity. To analyze the potential range of SPTH₂₀₀ in Mountlake, we conducted a review of the data available from the WDFW Site Potential Tree Height Mapping Tool, as described below. All overlaps were removed so only polygons with the greatest SPTH in each area were included. The WDFW SPTH dataset is not inclusive of all lands in Mountlake but is believed to be representative. Per BAS Report Figure 6 on page 35, the mean SPTH₂₀₀ in Marysville is 167 ft; with a minimum of 102 ft, a first quartile of 134 ft, a median of 168 ft, a third quartile of 199 ft, and a maximum of 231.

As a part of the CAO update, we recommend that Mountlake Terrace consider whether to follow WDFW recommended RMZ approach to stream classifications and buffer widths, including whether to incorporate the SPTH₂₀₀ Mapping Tool as part of stream buffer protection standards. This includes consideration of extending the buffer from the ordinary high water mark (OHWM) or channel migration zone, whichever is greater, to align with the RMZ buffer recommendations in Rentz et al. (2020). Current BAS on water quality buffer functions must also be considered. We recommend reviewing water quality buffer functions along with stormwater management regulations. The City must review the BAS-based recommendations and determine the best regulatory approach for Mountlake Terrace.

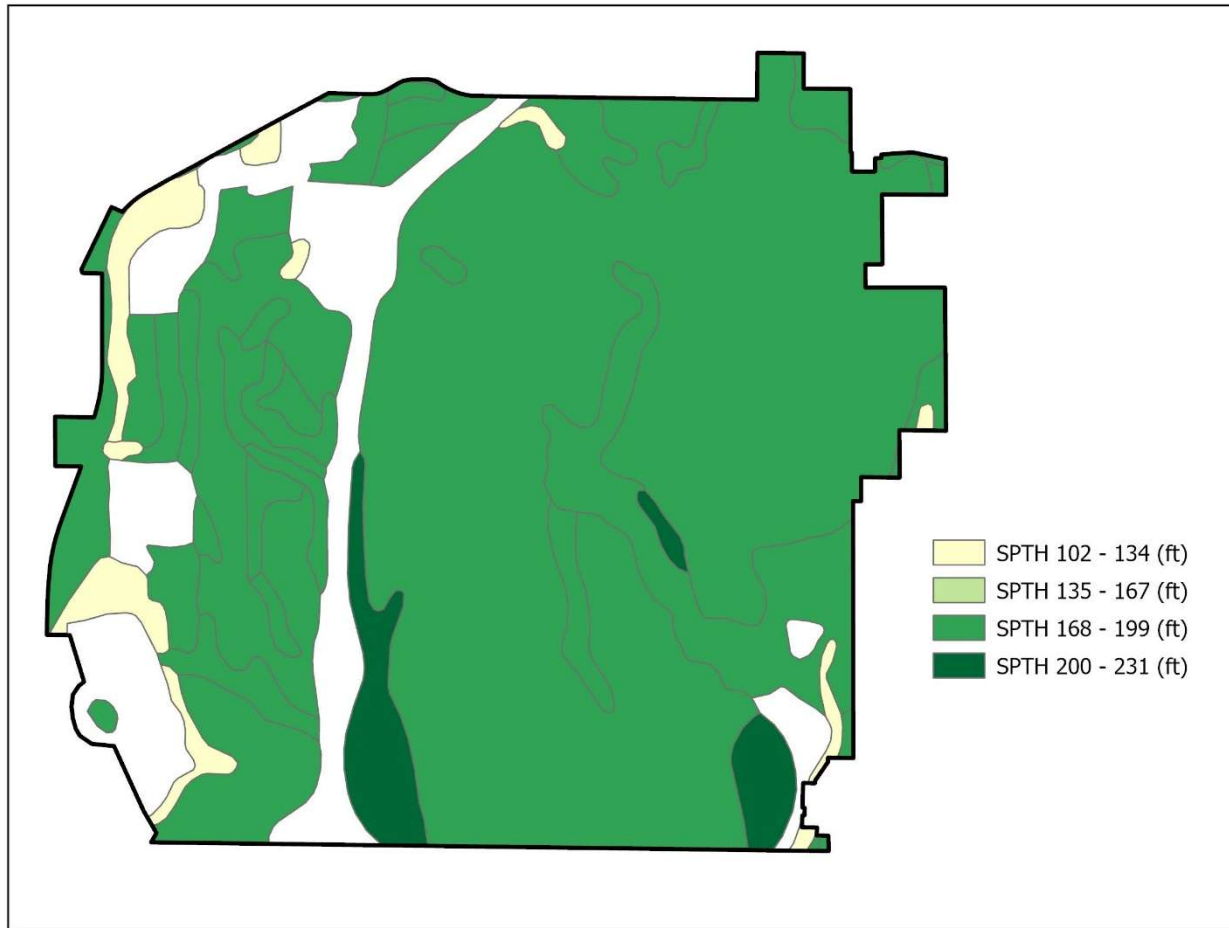


Figure 1. Map of SPTH₂₀₀ distribution in Mountlake Terrace (WDFW SPTH₂₀₀ Mapping Tool data accessed 5/9/25).

5. Wildlife Habitat (16.15.420)

This section addresses code sections that are applicable to wildlife habitat conservation areas (FWHCAs) as located in MTMC 16.15.420. A summary of recommended updates is provided in Table 4.

Table 4. Wildlife habitat areas review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.420.A	Applicability.	Provide a FWCA definition. Consider revising wildlife habitat classifications to be consistent with state definitions.	Consistency with GMA clarification of ambiguity

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.420.B	Buffer and Setbacks from Wildlife Habitat.	Recommend Mountlake Terrace retain authority to determine a buffer Consider alternative regulations for eagles Consider adding a code provision to address functionally disconnected habitat buffers	
16.15.420.C	Critical Area Report Requirements – Wildlife Habitat.	None	
16.15.420.D	Alteration of Wildlife Habitat Areas.	None	
16.15.420.E	Mitigation of Wildlife Habitat.	Updates to species/habitat management, and trails	Consistency with BAS and state agencies
16.15.420.F	Wildlife Habitat Protection	Add monitoring program and contingency plan for FWHCAs.	

5.1 Applicability (MTMC 16.15.420.A)

The code provides classifications for wildlife habitat in MTMC 16.15.420.A(2) that states that the documented presence of a “priority” species is considered critical habitat. Review the definition for clarity and practical application.

It is recommended that the language regarding nesting or resting sites be clarified to improve accuracy and enforceability. The current reference to “unusual” nest sites is overly broad and subjective—what constitutes “unusual” may vary depending on context and interpretation. Additionally, given the high number of raptor nests, many areas within Mountlake Terrace would be considered wildlife habitat. A more specific and measurable criterion should be considered to ensure consistent application and effective protection.

The definition for “secondary habitats” should be revised for greater clarity and specificity. As currently written, it lacks clear criteria and may lead to inconsistent interpretation. Additionally, because both conditions (A and B) must be met for an area to qualify as critical habitat, certain important sites—such as a heron colony that does not support a wide variety of species—may not be recognized under this definition. Consider revising the language to ensure that ecologically valuable habitats are not inadvertently omitted.

Additionally, wildlife habitat classifications provided do not include many of the FWHCA that need to be considered per WAC 365-190-130. It is advised that if there is a process of designating species of local importance as FWHCAs that they also be designated as FWHCAs in MTMC 16.15.420.A(2).

5.2 Buffer and setbacks from Wildlife Habitat (MTMC 16.15.420.B)

Federal, State, and Local Habitats and Species

Regarding buffers for habitats and species, it is recommended that Mountlake Terrace retain authority to determine a buffer rather than rely on information provided in applicant provided biological/habitat reports, either through its own expertise or third-party review. WDFW may not be able to provide a habitat management plan in all circumstances, and there is no comprehensive management recommended for all listed species for site-specific management. Additionally, management does not need to be limited to the establishment of buffers. For instance, a critical areas report may also include minimization and conservation measures, habitat retention, mitigation, or corridors in lieu or in addition to buffers depending on the specific species.

Bald Eagle Management

The MTMC requires that bald eagles be protected according to the Washington State Bald Eagle Protection Rules in WAC 232-12-292. These are now codified in WAC 220-610-100, but only apply when bald eagles are listed as threatened or endangered. Bald eagles have been delisted from both state and federal endangered and threatened species lists, so this requirement in the MTMC would no longer be applicable. However, bald eagles are still federally regulated through the Bald and Golden Eagle Protection Act of 1940 and the Migratory Bird Treaty Act of 1918. These regulations prevent 'take' and also require permits for activities within a certain distance of nest trees. This may be updated by repealing this code or considering alternative regulations. These may include requiring an applicant to obtain an eagle permit from the United States Fish and Wildlife Service (USFWS) for approval or a project within 660 feet of a nest tree.

Disconnected Buffers

Consider adding a code provision to address functionally disconnected habitat buffers for consistency with wetland buffer recommendations. These are buffer areas that are functionally separated from the stream by legally established roads or other significant development.

5.3 Mitigation of Wildlife Habitat (MTMC 16.15.410.E)

The recommendations for wetland monitoring program and contingency plan should also apply to FWHCAs.

6. Geologic Hazard Area (16.15.430)

This section addresses code sections that are applicable to geologically hazardous areas, as located in MTMC 16.15.430. A summary of recommended updates is provided in Table 5.

Table 5. Geologic hazard areas review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.430.A	Geologic Hazard Classifications.	Consider integrating landslide hazard area factors provided in WAC 365-190-120(6) into classifications.	Consistency with BAS
16.15.430.B	Buffer Areas and Setbacks.	None	
16.15.430.C	Alterations.	None	
16.15.430.D	Critical Area Report Requirements – Geotechnical.	Add cumulative impact assessment to criteria	BAS, climate change
16.15.430.E	Mitigation Planning.	None	
16.15.430.F	Mitigation	None	
16.15.430.G	Geologic Hazard Protection	None	

6.1 Geologic Hazard Classifications (MTMC 16.15.430.A)

The landslide hazard areas classification does not include many of the susceptibility factors that qualify a landslide hazard area. To add clarity, the definition of landslide hazard areas should include qualifying factors and be reviewed for consistency with WAC 365-190-120(6):

6.2 Critical Area Report Requirements – Geotechnical (MTMC 16.15.430.D)

The City can consider adding an assessment of cumulative impacts to the report requirements for geologically hazardous areas to this section.

7. Flood Hazard Areas (16.15.440)

This section addresses code sections that are applicable to flood hazard areas as located in MTMC 16.15.440. A summary of recommended updates is provided in Table 6.

Table 6. Flood hazard area review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.440.A	Purpose and Applicability.	None (Keep as-is)	
16.15.440.B	Location and Designation of Flood Hazard Areas.	None	
16.15.440.C	Allowed Activities and Standards.	None	
16.15.440.D	Variances.	None	
16.15.440.E	Mitigation	None	
16.15.440.F	Flood Hazard Area Protection.	None	
16.15.440.X	NFIP Compliance – FEMA Habitat Assessment	Section not currently included, recommend added.	BAS, Administration.

7.1 Purpose and Applicability (MTMC 16.15.440.A)

Frequently flooded areas are designed and regulated as critical areas. Recommend keeping these recognized as critical areas.

7.2 NFIP Compliance (MTMC 16.15.440.X *NEW*)

In 2008, the National Marine Fisheries Service (NMFS) issued a Biological Opinion under Section 7 of the Endangered Species Act, which found that the implementation of the National Flood Insurance Program (NFIP) in the Puget Sound region jeopardized the continued existence of federally threatened salmonids and resident killer whales. As a result, NMFS established Reasonable and Prudent Alternatives to ensure that development within the Special Flood Hazard Area (100-year floodplain), floodway, Channel Migration Zone (CMZ), and riparian buffer zone do not adversely affect water quality, flood volumes, flood velocities, spawning substrate, or floodplain refugia for listed salmonids.

Because the NFIP is implemented by the Federal Emergency Management Agency (FEMA) through participation by local jurisdictions that adopt and enforce floodplain management ordinances, FEMA has delegated responsibility to the local jurisdictions to ensure that development does not adversely affect listed species.

Projects within FEMA-designated floodplains are required to prepare habitat assessments to ascertain their potential effects on federally-listed endangered species. In particular, floodplain storage volumes may not be decreased nor base flood level elevations increased.

It is recommended that Mountlake Terrace include FEMA habitat assessment requirements to this code section. FEMA offers two alternatives to meeting the ESA requirements including (1) prohibition of all development in the floodway and other areas, (2) a permit-by-permit basis for ESA compliance.

8. Aquifer Recharge Areas (16.15.440)

This section addresses code sections that are applicable to aquifer recharge areas as located in MTMC 16.15.440. A summary of recommended updates is provided in Table 6.

Table 7. Aquifer recharge areas review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
16.15.450.A	Classification	Consider replacing "significance" with "susceptibility" Include wellhead protection areas (WHPA). Consider number of WHPA system connections, system ownership (public or private), and contamination susceptibility when considering which WHPAs to designate as CARAs	Consistency with GMA and BAS
16.15.450.B	Allowed Activities	None	
16.15.450.C	Mapping	Consider adding CARA map resource	BAS
16.15.450.D	Alteration or Development of Aquifer	None	

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
	Recharge Areas – Standards and Criteria.		
16.15.450.E	Reporting Requirements.	When present, add wellhead protection	
16.15.450.F	Mitigation Planning.	None	
16.15.450.G	Aquifer Recharge Area Protection.	None	

The City's existing Critical Aquifer Recharge Areas (CARA) regulations are generally in line with BAS, however some modifications could be made to strengthen the regulations and facilitate ease of use and implementation.

8.1 Classification (MTMC 16.15.450.A)

Consider replacing the term 'significance' with 'susceptibility' under A 1, 2 and 3 high, medium and low rankings.

Wellhead protection areas (WHPA)

The Washington State Wellhead Protection Program Guidance Document (DOH 2017) notes the benefit of protecting noncontiguous buffer zones through CARA designations, which provide protection for the quality and quantity of public water supplies. The guidance document recommends considering number of system connections, system ownership (public or private), and contamination susceptibility when considering which WHPAs to designate as CARAs.

8.2 Mapping (MTMC 16.15.440.C)

Consider adding CARA map resource for better identification and regulation of these areas. The Washington State Department of Health Source Water Assessment Program mapping tool may be a good reference for the City ([Source Water Assessment Program \(SWAP\) Mapping Tool | Washington State Department of Health](#)).

8.3 Reporting Requirements (MTMC 16.15.440.E)

Including a wellhead protection area (WHPA) in the analysis for Critical Aquifer Recharge Areas (CARAs) is essential to ensure the protection of public and private drinking water sources from potential contamination. Protection measures should be addressed and evaluated if WHPA is near the site. These areas are particularly vulnerable to pollutants that can infiltrate groundwater supplies, and incorporating wellhead protection zones helps identify and mitigate risks to water quality within designated recharge zones.

9. Definitions (16.15.500)

Critical Aquifer Recharge Areas

The definition of critical aquifer recharge areas excludes areas with little or no contaminant loading potential, presumably because they are *susceptible* but not *vulnerable*. *Vulnerability* is dependent on contaminant loading, a condition that will change based on land use. We recommend that the City review this definition because the change of site use may determine the outcome of whether or not a property meets the technical definition of a CARA. An alternative approach would be to exempt such lands from performance standards rather than excluding them from the definition.

Exotic Animals

Exotic species are defined to be any species of plant or animal that is *foreign* and not indigenous to the Mountlake Terrace area. Foreign may be legally construed to mean only species not native within national jurisdictional boundaries, and therefore, exclude invasive species from other regions of the conterminous U.S. We recommend updating this definition to include and non-native invasive species.

Hazard Tree

Consider revising the hazard tree definition to more closely follow guidelines for ISA and/or ANSI standards. A hazard tree should be designated by a certified arborist to be considered a moderate or high risk and that will have unacceptable residual risk after hazard mitigation options have been exhausted.

Significant Tree

Trees diameters are measured at 4.0 feet above grade rather than the industry standard of 4.5 feet, known as *diameter at standard height* or *diameter at breast height*. Note that *health* is a subjective term in the context of tree management, and further refinement of the definition to align with ISA and ANSI standards may be helpful in code interpretation and application.

Stream

The definition of a stream excludes certain features such as ditches, canals, and other artificially constructed surface features. Such exclusions are common in critical areas code, but should not be construed to exclude natural streams which have been diverted to artificially constructed surface features. We recommend that the definition of stream be updated to clarify this nuance.

Wetland Classification

A newer version of the wetland classification system is available that can be referenced in this definition.

Update to reflect changes recommended in this report

Certain recommendations in this report may result in updates to the underlying definitions of terms, such as those occurring for critical habitat, and fish and wildlife critical habitat areas.

Definitions Not Cited in Code

Certain terms are defined which are not used in the critical areas code, these may be removed.

References

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APPENDIX A. Ecology's Wetland Buffer Width Recommendations

Errata (April 2024)

Wetland Guidance for Critical Area Ordinance (CAO) Updates: Western and Eastern Washington, October 2022



Appendix E, Table 2 on page E-2

The compensation ratios for unavoidable impacts to Category I and II Estuarine wetlands in western Washington were mistakenly reversed. Table 2 (Western) should be replaced with the following table.

Table 2. Western

Category of impacted wetland (based on special characteristics)	Re-establishment or creation	Rehabilitation	Preservation	Enhancement
Category I forested	6:1	12:1	24:1	24:1
Bogs	NA	NA	24:1	NA
Wetlands of High Conservation Value	Consult with WA DNR	Consult with WA DNR	24:1	Consult with WA DNR
Category I Estuarine wetlands	4:1 (re-establishment only)	8:1	16:1	Limited circumstances (case by case)
Category II Estuarine wetlands	3:1 (re-establishment only)	6:1	12:1	Limited circumstances (case by case)
Category I Interdunal wetlands	4:1	8:1 (limited circumstances)	16:1	Not considered an option
Category II Interdunal wetlands	2:1	4:1 (limited circumstances)	8:1	Not considered an option
Category III and IV Interdunal wetlands	1.5:1	3:1 (limited circumstances)	6:1	Not considered an option
Category I Wetlands in coastal lagoons	4:1 (re-establishment only)	8:1	16:1	Not considered an option
Category II Wetlands in coastal lagoons	3:1 (re-establishment only)	6:1	12:1	Not considered an option

TECHNICAL MEMORANDUM

Date:	September 26, 2025
To:	Sara Pizzo, AICP, Senior Planner City of Mountlake Terrace
Cc:	Dan Nickel, Principal of Planning
From:	Tami Camper, PWS, Environmental Planner; Nell Lund, PWS, Principal Ecologist
Project Name:	City of Mountlake Terrace CAO Update
Facet Number:	2501.0517.00

Site Potential Tree Height Analysis

Purpose

The Washington Department of Fish and Wildlife (WDFW) published guidance on riparian management in 2020 (Rentz et. al. 2020) based on their synthesis of best available science (Quinn et. al. 2020). The WDFW guidance recommends several key shifts in riparian protection strategies that differ from the City of Mountlake Terrace's current stream buffer protection approach. In this study, Facet evaluated the spatial differences between implementing WDFW guidance and current stream buffers per the City of Mountlake Terrace's Critical Areas Ordinance (CAO), Mountlake Terrace Municipal Code (MTMC), 16.15.410 (Streams). Differences between the two scenarios were mapped and quantified by stream length, and land use planning considerations were assessed.

Background

Facet completed both a Best Available Science (BAS) and CAO Gap Analysis review of streams and riparian areas for their forthcoming CAO Update, tentatively scheduled for adoption in the fall of 2025. Riparian Management Zones (RMZs) and Site Potential Tree Height (SPTH) are discussed concerning Fish and Wildlife Habitat Conservation Areas (FWHCA), the latter of which are defined as a critical area under the Growth Management Act. BAS will be used to draft a gap analysis of the code and revise the CAO as appropriate. This document and GIS analysis compares RMZs using SPTH to stream buffers based on current City of Mountlake Terrace regulations.

Existing Conditions

Aerial imagery indicates Mountlake Terrace is primarily developed, with some remaining forests and wetlands focused in pockets and stream and/or steep slope corridors throughout the city. WDFW's Draft Washington Habitat Connectivity Mapper assigns the lands within the City of Mountlake Terrace

a low landscape connectivity value of 0-1 (out of 24). Vegetation cover maps show the forested areas dominated by Douglas fir (*Pseudotsuga menziesii*) and red alder (*Alnus rubra*) (WDFW 2025). The topography is relatively flat through most stream corridors, with some incised stream areas that contain steep slopes near one or both stream banks. The City has three fish-bearing streams, Hall Creek, McAleer Creek, and Lyon Creek, within City limits (see Figure 2 below).

The City of Mountlake Terrace lies in the Lake Washington watershed subbasin (HUC 17110012) of the Cedar-Sammamish watershed (Water Resource Inventory Area 8). It contains portions of the Swamp Creek (171100120303) and Lake Washington Sammamish (171100120400) subwatersheds.

RMZ Width

The functional characteristics of riparian areas have been extensively studied, including stream morphology, erosion and sedimentation processes, instream woody debris, stream temperature, pollution, pathogens, and nutrient dynamics. The studies found that riparian buffer widths required for pollution attenuation vary considerably depending on the site-specific conditions (e.g., slope, area of adjacent uplands, drainage paths, vegetation density). Furthermore, the relationship between buffer width and pollutant removal efficacy is non-linear, necessitating a disproportionate increase in width to achieve an incremental rise in pollutant removal (Quinn et al 2020).

In 1993, the Forest Ecosystem Management Assessment Team (FEMAT) developed a model known as the FEMAT curves to guide the protection of riparian areas in forested landscapes. The FEMAT curves show how essential functions of riparian ecosystems change with distance from the stream channel (see Figure 1). Two key insights from the model are: (1) four out of five essential functions occur within one SPTH; and (2) the rate of cumulative effectiveness of each function decreases with increasing distance from the stream. Rentz (2020) proposes that defining riparian areas based on these measures is an effective strategy for preserving the functionality of riparian ecosystems, for aquatic habitats and species, including salmon. The FEMAT curves and SPTH help determine the recommended width of RMZs.

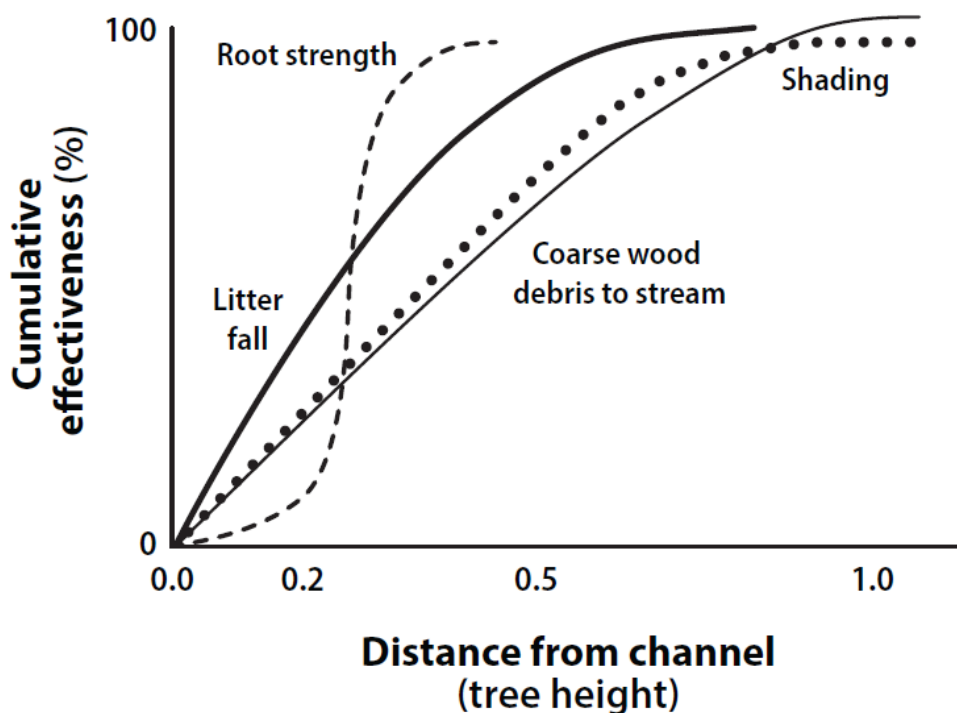


Figure 1. FEMAT curve, reproduced from Quinn et al 2020.

Methods

To assess the difference between the City of Mountlake Terrace's current regulations and WDFW's SPTH recommendations and RMZ BAS, Facet aggregated current and relevant data into a geodatabase within ESRI's ArcPro GIS program, projected to Washington State Plane North HARN. The data sources are detailed in Table 1 below.

The area analyzed includes the City of Mountlake Terrace with SPTH data, as the CAO applies to all zones within city limits. Shorelines of the State were excluded as they are managed under the Shoreline Management Act (Chapter 90.58 RCW) and not subject to the CAO. The rivers excluded are Type S waters from the Washington Department of Natural Resources (DNR) Hydrocourses layer (covered by City's Adopted SMP). Channel migration zones (CMZ) were not assessed as CMZs are not currently mapped within city limits (See Figure 2).

Streams were buffered according to their stream type per the DNR data, using the values from the City's current CAO (Table 2). These are referred to as "*current CAO buffers*."

The SPTH polygon dataset for 200-year SPTH values adjacent to streams in the National Hydrography Dataset (NHD) within forested areas of Washington State (by county) was used to determine SPTH values. Using these values, WDFW RMZs were established for streams.

Table 1. Data and sources used in this analysis.

Stream Type	Data Source	Last Updated
Streams	DNR Watercourses	Updated 2022
CMZ	NA	NA
SPTH	WDFW: Snohomish200YearSiteIndex_sv	2024
County Boundary	WA Geospatial data portal	2023
Zoning	Mountlake Terrace Zoning GIS	2024
City Boundaries	Snohomish GIS	2024

Table 2. Currently adopted regulatory stream buffers per the Mountlake Terrace Municipal Code (MTMC) 16.15.400410.D.2(a).

Stream Type	Minimum Buffer Width (in Feet)	Additional Buffer for Threatened or Endangered Species (in Feet)	Building Setback (in Feet)
Type S	150	75	15
Type F	100	50	15
Type Np	50	0 (no anadromous fish)	15
Type Ns	Determined based on review of technical information	0 (no anadromous fish)	15

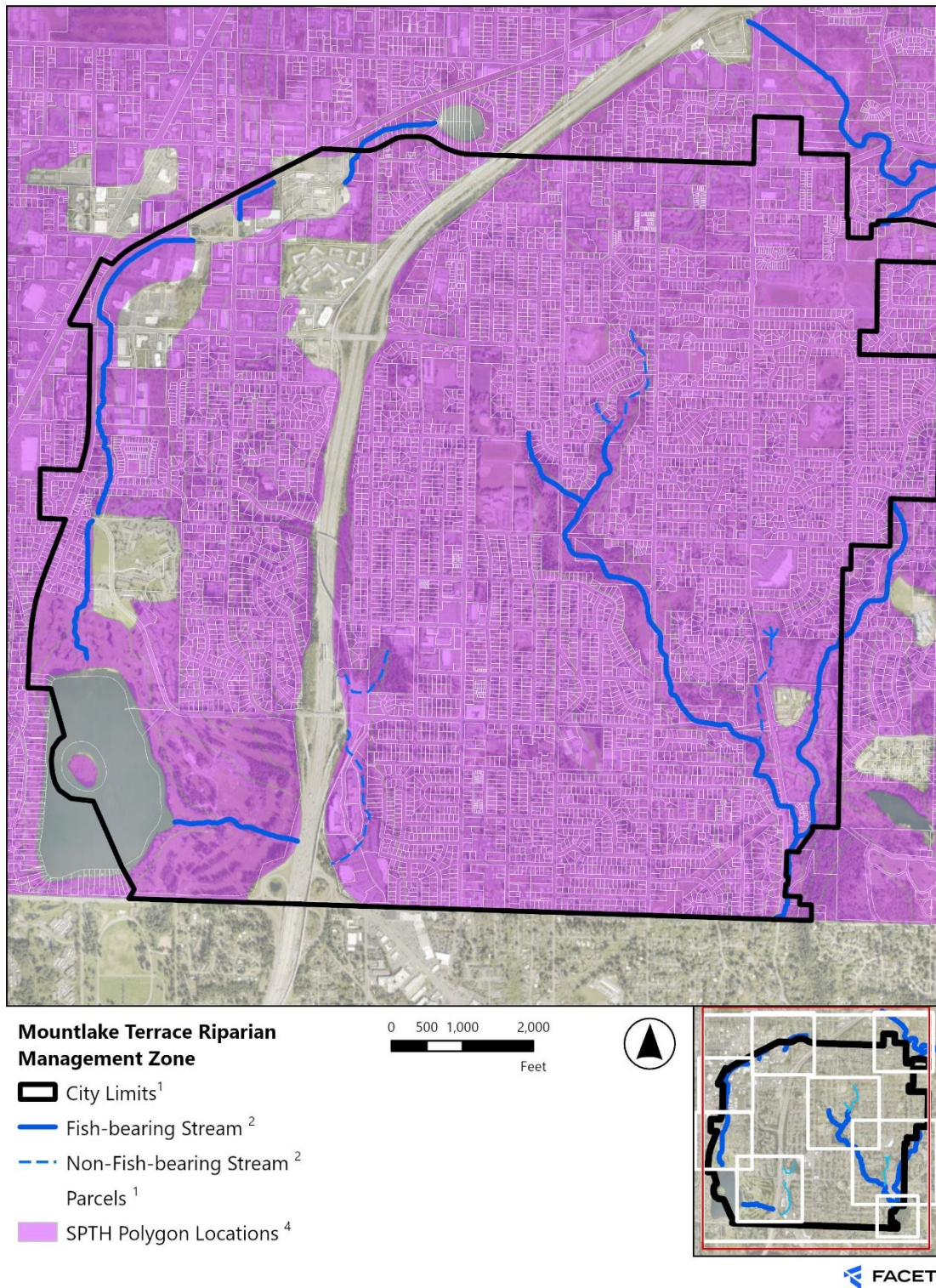


Figure 2. Study area includes areas of Mountlake Terrace with SPTH data.

Results

Streams were analyzed by the miles per stream type. There were 7.87 miles of Type F, 1.08 miles of Type N, and no unknown or untyped streams in the study area. Of the 9.07 miles of streams, no segments had SPTH values less than the corresponding 100-foot stream buffer (Table 3). SPTH values are between 105 and 196 feet, with the maximum at 231 feet and the minimum at 102 feet. The median SPTH value in Mountlake Terrace is 173 feet (Figure 3). For the columns below under Table 3, "Over" indicates stream miles where SPTHs are greater than existing stream type buffers as prescribed in MTMC 16.15.410.D.2(a). Conversely, "Under" indicates stream miles where SPTHs are less than said stream type buffers.

All current CAO stream buffers were less than the SPTH width (Table 3 and Figure 4).

Table 3. Sum of stream miles by stream type.

Stream Type	Over	Under	Grand Total
Fish	7.87	0.0	7.87
Non-fish	1.08	0.0	1.08
Grand Total	9.07	0	9.07

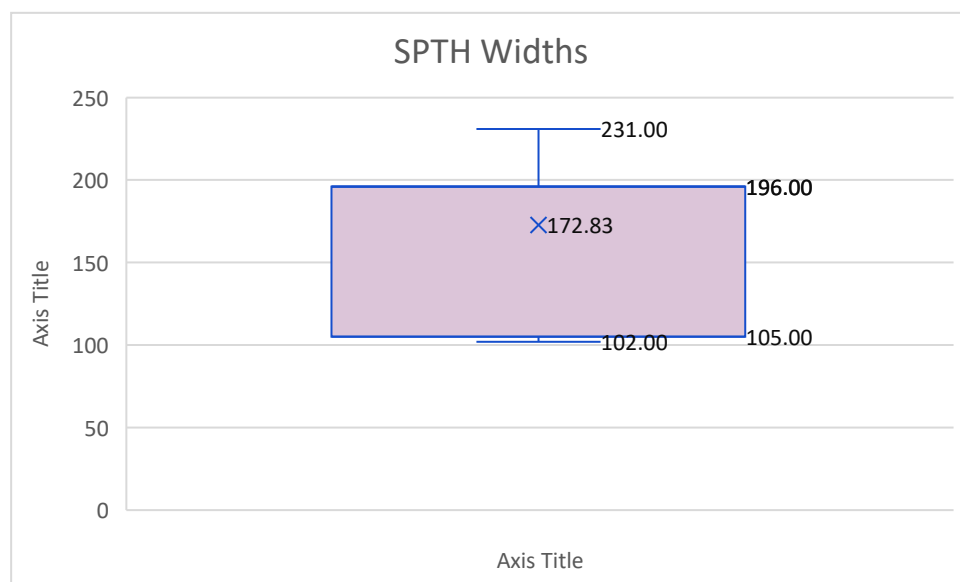


Figure 3. Box Plot of SPTH widths with outliers and median value.

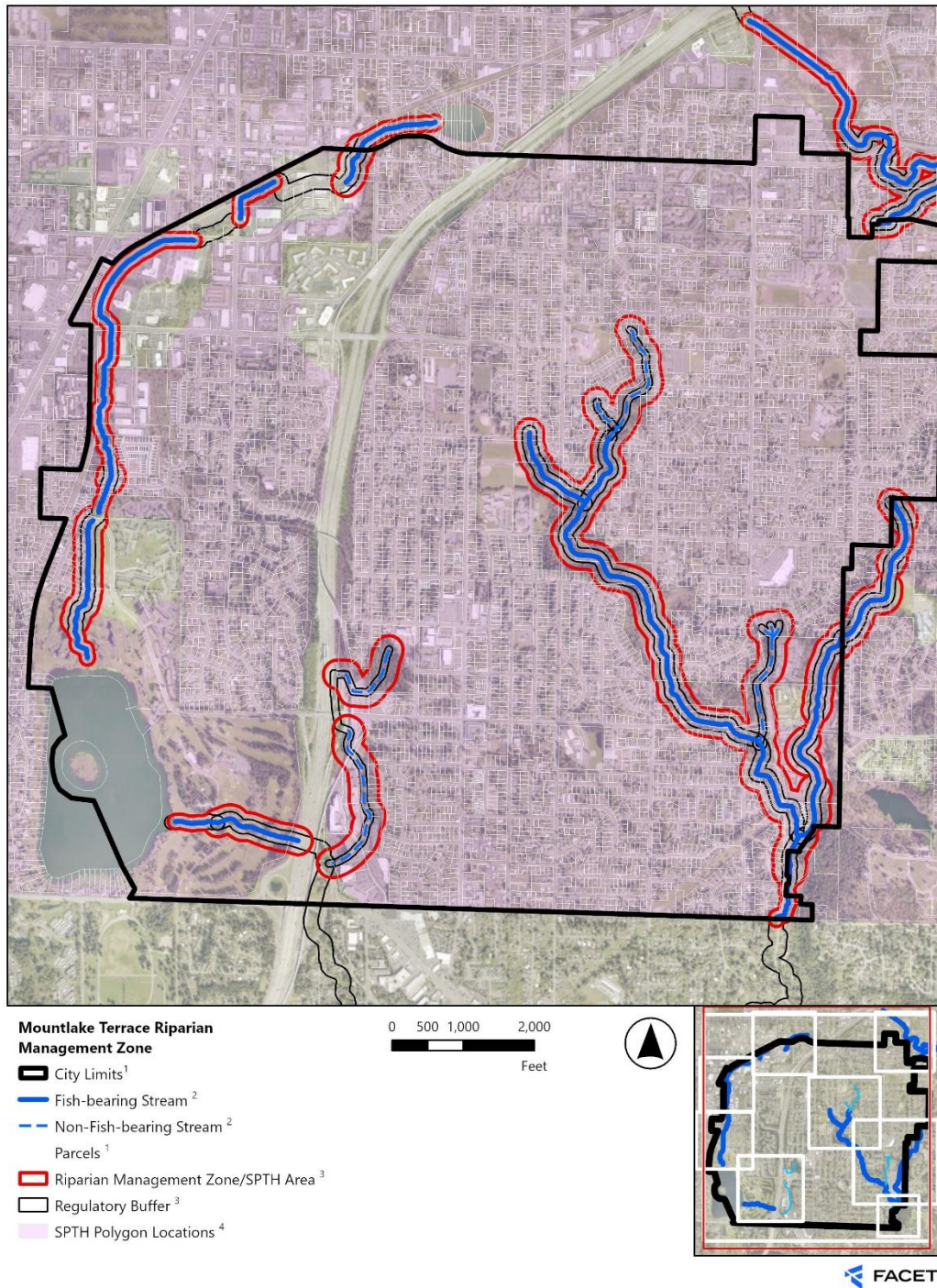


Figure 4. Difference between regulation buffers and SPTH buffers.

The City of Mountlake Terrace analyzed parcels and areas affected by various options of stream buffers. Option 1 looks at larger buffers and retaining a 10-foot building setback, reducing by 5-feet over existing regulations. Type F and N streams would increase to 150 and 100 feet, respectively, plus a 10-foot building setback (reducing from the existing 15-foot building setback currently set in code). Option 1a looks at 150 and 100-foot buffers with no building setback. Option 2 would propose moderately larger buffers. Type F and N streams would increase to 125 and 75 feet, respectively, plus a 10-foot building setback. Option 2a would propose 125-foot and 75-foot buffers with no additional building setback. Table 4 demonstrates the number of parcels and acres of affected land within proposed buffers. Refer to the separate GMA Compliance & Stream Buffer Regulations Option Memo prepared by Facet (September 2025) for further discussion.

Table 4. Analysis of parcels and areas affected by proposed buffer changes

	Number of PARCELS AFFECTED	ACRES AFFECTED
Option 1 (includes building setback in analysis):		
Type F 150' buffer + 10 ft building setback	321	190.5
Type N 100' buffer + 10 ft building setback	33	26.8
Option 1a (excludes building setback in analysis)		
Type F 150' buffer—	309	178.7
Type N 100' buffer—	31	24.4
Option 2 (includes building setback in analysis):		
Type F 125' buffer + 10 ft building setback	279	161
Type N 75' buffer + 10 ft building setback	29	20.7
Option 2a (excludes building setback in analysis)		
Type F 125'	255	149.1
Type N 75' buffer	25	18.3

Conclusions

WDFW guidance, consistent with BAS, recommends a minimum RMZ width of 100 feet. This width is called out by WDFW under BAS to preserve water quality protection processes and ensure sufficient area for infiltration or surface water runoff before it enters the stream.

Currently, all streams in the City of Mountlake Terrace have regulatory buffers that are narrower than the WDFW recommended RMZ widths. Figure 4 illustrates the differences between the current regulations and the WDFW recommended RMZ widths.

As noted in the accompanying BAS review (*Facet, June 2025*), the latest WDFW guidance has shifted in terminology and framework from "stream buffers" to "RMZs." An RMZ is defined as *"...a scientifically based description of the area adjacent to rivers and streams that has the potential to provide full*

ecological function based on the SPTH conceptual framework." WDFW guidance stresses that an RMZ should be regulated as an FWHCA in CAOs to protect its fundamental value as a habitat and stream function, rather than treating it as a buffer for rivers and streams.

Establishing RMZs using the SPTH methodology is one of several approaches to managing riparian areas in accordance with BAS. For more details, please refer to the Facet's 2025 BAS review.

According to the GIS analysis conducted in this study based upon WDFW's RMZ guidance and various alternatives from a parcel impact and acreage perspective, the SPTH values in the City are, on average, 50 to 100 feet larger than the current 100-foot buffer for Type F streams. See the separate GMA Compliance & Stream Buffer Regulations Option Memo, prepared by Facet (September 2025), for a more broken-down assessment of options for elected officials' consideration.

As the City considers this assessment, we recognize stream regulations will be reviewed from an implementation perspective and are balanced with other GMA requirements. Given the dense urban environment in Mountlake Terrace, WDFW riparian management recommendations for urban areas are provided in WDFW *Riparian Ecosystems Volume 2: Management Recommendations*, Section 3.3 include an emphasis on maintaining and improving functions through regulatory and voluntary means, identifying and prioritizing restoration, maintaining and improving riparian connections, and applying stormwater management (Rentz 2020).

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State of Washington

Department of Fish and Wildlife, Region 4

Region 4 information: 16018 Mill Creek Blvd, Mill Creek, WA 98012 | phone: (425)-775-1311

October 10, 2025

City of Mountlake Terrace
23204 58th Ave W
Mountlake Terrace, WA 98043

RE: Submittal ID 2025-S-9934, Proposed Amendments relating to the Critical Area Ordinance, amending Mountlake Terrace's Municipal Code, Chapter 16.15

Dear Planning Staff, Commissioners, and Councilmembers,

My name is Morgan Krueger, and I serve as the Regional Land Use Lead for the Washington Department of Fish and Wildlife (WDFW), representing this area. Thank you for the opportunity to comment **in support** of Mountlake Terrace's proposed stream buffer amendments to Chapter 16.15 of the Critical Areas Ordinance (CAO).

The decisions before you are vital to the long-term health of Mountlake Terrace's waterways and community, as well as the recovery of federally listed salmon populations. Riparian areas—commonly referred to as stream buffers—provide essential ecosystem services such as filtering pollutants, reducing flood risk, and stabilizing streambanks. Protecting these areas is both an environmental responsibility and an investment in public health, safety, and community resilience.

Mountlake Terrace's current water quality challenges are intrinsically linked to the health and management of its riparian corridors. Several water bodies within the city are listed on the Department of Ecology's 303(d) list, meaning they are formally identified as impaired under the federal Clean Water Act and do not currently meet basic water quality standards. Strengthening riparian protections is a direct and scientifically supported way to address these impairments and improve both ecological and community outcomes.

WDFW's Best Available Science (Volume 1) and management recommendations (Volume 2) demonstrate that a 100-foot buffer is the minimum width necessary to effectively filter pollutants before they reach streams. We appreciate Mountlake Terrace's commitment to incorporating this standard, as well as its inclusion of vegetative requirements that ensure

these areas function as intended.

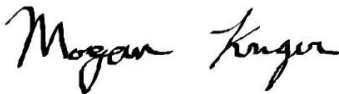
Under WAC 365-195-900 through 365-195-925, jurisdictions are required to incorporate Best Available Science (BAS) when updating critical area regulations. This requirement exists to ensure that local codes are defensible, scientifically grounded, and capable of achieving no net loss of ecological functions and values. Adopting WDFW's minimum BAS standards, as proposed by the incorporation of the 100-foot buffer standard, helps align Mountlake Terrace's regulations with this obligation.

As an example, the importance of adhering to BAS is underscored by the legal case involving the City of Anacortes. Anacortes' updated CAO was challenged at the Growth Management Hearings Board (GMHB) due to concerns that its stream buffer widths did not fully reflect BAS. The GMHB ultimately ruled against the city, requiring it to revise its regulations and align them with BAS. Following this decision, Anacortes adopted revised stream buffers informed by WDFW's BAS recommendations, incorporating Site Potential Tree Height at 200 years (SPH₂₀₀).

The city's proposed amendments, while not fully consistent with all of WDFW's BAS recommendations, take a proactive step toward improving ecological resilience and water quality.

Thank you for your time and commitment to safeguarding Mountlake Terrace's natural resources.

Sincerely,

A handwritten signature in black ink that reads "Morgan Krueger". The signature is written in a cursive, flowing style.

Morgan Krueger
Regional Land Use Lead
Washington Department of Fish and Wildlife

CC:

Kara Whittaker, Land Use Conservation and Policy Section Manager (Kara.Whittaker@dfw.wa.gov)

Marian Berejikian, Land Use Conservation and Policy Planner (Marian.Berejikian@dfw.wa.gov)

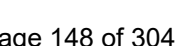
Stewart Reinbold, Assistant Regional Habitat Program Manager (Stewart.Reinbold@dfw.wa.gov)

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Region 4 Southern District Planning Inbox (R4SPlanning@dfw.wa.gov)

Carol Holman, WA Department of Commerce (Carol.Holman@commerce.wa.gov)

Aquifer Sensitivity USGS 1997
SCORE_GROU = 3



DRAFT

Chapter 16.15
CRITICAL AREAS

Sections:

- 16.15.010 Purpose and intent.
- 16.15.020 Applicability.
- 16.15.030 Designation, classification, and delineation of critical areas.
- 16.15.040 Critical area buffers and setbacks.
- 16.15.050 Decision authority.
- 16.15.060 Conflicts.
- 16.15.070 Relationship to other codes and regulations.
- 16.15.080 Lands to which this chapter applies and maps.
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- 16.15.380 Enforcement and penalties.
- 16.15.385 Appeals of critical area decisions.
- 16.15.390 Fees.
- 16.15.400 Wetlands.
- ~~16.15.410 Streams.~~
- 16.15.420 Wildlife habitat.
- 16.15.430 Geologic hazard area.
- 16.15.440 Flood hazard areas.
- 16.15.450 Critical aAquifer recharge areas.
- 16.15.500 Definitions.

16.15.010 Purpose and intent.

A. Purpose. The purpose of this chapter is to designate and classify ecologically sensitive and hazardous areas, and to protect these areas and their functions and values, while also allowing for reasonable use of private property. Ecologically sensitive and hazardous areas, or critical areas, include wetlands, fish and wildlife habitat conservation areas, geologically hazardous areas, frequently flooded areas including streams, and critical aquifer recharge areas. This chapter includes the following objectives:

1. Comply with the requirements of the Growth Management Act (Chapter 36.70A RCW) and implement rules to identify and protect critical areas consistent with best available science per WAC 365-195-900 through 365-195-925, as amended, and in consultation with state and federal agencies and other qualified professionals;
2. Implement the goals and policies of the Mountlake Terrace Comprehensive Plan and development codes, including those pertaining to natural features and environmental protection, and relating to land use, housing, economic development, transportation, and adequate public facilities;
3. Use best available science to prepare critical area reports and make decisions to protect the functions and values of critical areas with special consideration given to conservation or protection measures necessary to preserve or enhance anadromous fish and their habitat, consistent with RCW 36.70A.172 and WAC 365-195-900 through 365-195-925;
4. Serve as a basis for exercise of the City's substantive authority under the State Environmental Policy Act (Chapter 43.21C RCW) where appropriate, to identify, consider, and mitigate significant adverse effects on critical areas not otherwise addressed by this chapter, while also reducing the City's reliance on project-level SEPA review to protect regulated critical areas; and
5. Provide consistent standards, criteria, and procedures that will enable the City to effectively manage and protect critical areas while accommodating the rights of property owners to use their property in a reasonable manner.

B. Intent. The intent of critical areas regulations, as set forth in this chapter, is to:

1. Develop and implement a comprehensive, balanced and fair regulatory program that avoids impacts to critical resources where possible, by limiting development and alterations, that requires that mitigation be performed by those affecting critical areas, and that thereby protects the public from injury, loss of life, property or financial losses due to flooding, erosion, landslide, seismic events, soil subsidence or steep slope failure;
2. Provide greater certainty to property owners regarding uses and activities that are permitted, prohibited and/or regulated due to the presence of critical areas;
3. Coordinate environmental review and permitting of proposals involving critical areas with existing development review and approval processes to avoid duplication and delay, pursuant to Chapter 36.70B RCW;
4. Establish conservation and protection measures for threatened and endangered fish species in compliance with the requirements of the Endangered Species Act and WAC 365-195-925;
5. Achieve no net loss of critical area functions and values. Uses and activities carried out, pursuant to this chapter, shall result in equivalent or, if the applicant chooses, greater critical area functions and values. No activity or use shall be allowed that results in a net loss of the functions or values of critical areas;
6. Alert the public to the development limitations and hazards associated with critical areas and their required buffers; and
7. Recognize that the objectives and means of protecting critical areas is unique for each community. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.020 Applicability.

A. This chapter shall regulate all land, water areas and structures, and any use or activity that affects or potentially affects a critical area or critical area buffer, unless otherwise exempt or granted an exception, consistent with this chapter.

B. All areas within the city meeting the definition of one or more critical areas, pursuant to MTMC 16.15.500, regardless of any formal identification of location of critical areas, pursuant to MTMC 16.15.080, are hereby designated critical areas and are subject to the provisions of this chapter.

C. The use of the term “critical area” in this chapter shall generally mean to include the critical area buffer, unless the context clearly indicates otherwise.

D. Critical areas regulated by this chapter include:

1. Wetlands and streams, pursuant to MTMC 16.15.400 and 16.15.410;
2. Fish and wildlife habitat conservation areas, pursuant to MTMC 16.15.420;
3. Geologically hazardous areas, pursuant to MTMC 16.15.430;
4. Flood hazard areas, pursuant to MTMC 16.15.440; and
5. Critical aAquifer recharge areas, pursuant to MTMC 16.15.450.

E. Areas adjacent to critical areas are subject to this chapter. An adjacent area is any of the following locations:

1. A distance equal to, or less than, the required critical area buffer width and any building setback;
2. On a portion of a site with a critical area when the critical area’s buffer overlaps the subject site;
3. A distance equal to, or less than, 200-300 feet upland from a stream, wetland, or water body, within a channel migration zone or ordinary high water mark that is not otherwise regulated by Chapter 16.10 MTMC, Shoreline Management;
4. Within 100 feet of a priority habitat area;
5. Within a floodway or floodplain; and
6. A distance equal to, or less than, 330 feet from a priority habitat point as mapped by the Washington State Department of Fish and Wildlife; or, within 50 feet of a critical slope.

7. A distance equal to or less than two hundred (200) feet from a critical aquifer recharge area.

F. The functions and values of critical areas shall be protected, pursuant to this chapter. No activity or use shall be allowed that results in a net loss of the functions or values of the critical areas. Any action taken shall result in equivalent or greater functions and values of the critical areas associated with the proposed action.

G. A “critical area permit” means any authorization to proceed with an activity, action, or use in a critical area or buffer. An authorization may consist of an approved land use, building, or other type of construction permit.

H. A permit or approval shall be obtained from the City for any activity which alters or disturbs critical areas or buffers, including but not limited to clearing, grading, draining, filling, dumping of debris, demolition of structures and installation of utilities, unless otherwise exempt or granted an exception, consistent with this chapter.

I. Approval of a permit or development proposal, pursuant to the provisions of this chapter, does not release the applicant from responsibility to comply with the provisions of this chapter. Activities in critical areas or buffers deemed exempt from a permit are responsible to comply with the provisions of this chapter. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.030 Designation, classification, and delineation of critical areas.

Critical areas within the City of Mountlake Terrace shall be designated, classified, and delineated, pursuant to MTMC 16.15.500, and the respective critical area type in MTMC 16.15.400 through 16.15.450. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.040 Critical area buffers and setbacks.

A. The purpose of a buffer is to protect the integrity, function and value of the subject critical area (such as wetlands, streams, and wildlife habitat areas), and/or to protect life, property and resources from risks associated with development on unstable or critical lands (such as geologic hazard areas, flood hazard areas, critical aquifer recharge areas).

B. Required buffer widths shall reflect the sensitivity of the particular critical area or the risks associated with development. Specific regulations for individual critical area buffer widths and setbacks apply, pursuant to MTMC 16.15.400 through 16.15.450.

C. Buildings should ~~generally~~ be set back from the edge of a critical area buffer as required by this Chapter. ~~The type and intensity of human activity proposed on or near the critical area buffer should be considered.~~

D. If two contiguous critical areas overlap, the more restrictive, wider buffer applies.

E. Restrictive covenants or conservation easements may be required to provide long-term preservation and protection of buffers and setback areas. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.050 Decision authority.

A. The Director has the authority to administer, interpret, and apply the provisions of this chapter, and is responsible to enforce this chapter to accomplish the intent and purpose.

B. When interpreting and applying the regulations of this chapter, the Director shall consider the chapter's provisions to be the minimum requirements and liberally construed to serve the purpose of this chapter.

C. The Director has the authority to require additional information, to determine the level of detail and appropriate methodologies for critical area reports and studies, and to prepare application and informational materials, as required and necessary.

D. The Director has the authority to approve, withhold, condition, or deny development permit or activity approvals to ensure that the proposal is consistent with this chapter.

E. The Director may permit, or condition, uses not specifically mentioned in this chapter, when it can reasonably be determined that the use is sufficiently consistent with other uses permitted in the critical area. The Director shall issue a written decision stating the reasons for determining which existing review and approval process is applicable to the proposal based on its similarity to and compatibility with other allowed uses in a critical area.

F. Decisions by the Director are final unless appealed, pursuant to MTMC 16.15.385, Appeals of critical area decisions.

G. The Hearing Examiner shall have decision authority over those applications the Hearing Examiner reviews and issues decisions on, consistent with this chapter and Chapter 2.120 MTMC. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.060 Conflicts.

A. In the event of a conflict between this chapter and any other City regulations, the more restrictive regulations shall apply, except when otherwise required by federal or state law, or regulated by Chapter 16.10 MTMC, Shoreline Management.

B. In the event any easement, covenant, or deed restriction conflicts with this chapter, that which provides greater protection to the critical areas shall apply first. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.070 Relationship to other codes and regulations.

A. These critical area regulations shall apply as an overlay and are in addition to any other permits or approvals required by the City's land use and other regulations established by the City of Mountlake Terrace.

B. When an area contains overlapping critical areas, the more restrictive provisions of the underlying critical areas prevail.

C. The regulations of this chapter shall apply concurrently, when applicable, with review conducted under the State Environmental Policy Act (SEPA), per Chapter 16.05 MTMC.

D. Critical areas within the shoreline jurisdiction shall be regulated by Chapter 16.10 MTMC, Shoreline Management, as applicable. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.080 Lands to which this chapter applies and maps.

A. The generalized location and extent of critical areas within the City of Mountlake Terrace is shown on City critical areas maps including, but not limited to, maps identified in the Comprehensive Plan, as amended. These maps are only a reference guide and cannot be relied upon to determine the presence or absence of critical areas or buffers or provide a final designation. The maps may be amended and updated as critical areas are identified, classified, or other information obtained.

B. Land may be considered a critical areas based on one, or more, of the following:

1. Location is shown on a critical area map, or is within 200 feet thereof;
2. Information in public records indicating possible presence of critical areas;
3. Field observation of presence of standing or moving water, significant vegetation, wildlife, or slopes;
4. Conflict between mapped information and observed site conditions; or
5. Apparent presence of critical area on abutting property whose critical area type buffer overlaps the subject site.

C. Shoreline Jurisdiction Map. Any critical areas shown within the adopted Shoreline Jurisdiction Area Map, shall be regulated per Chapter 16.10 MTMC, as amended, and are not subject to the provisions of this chapter. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.090 Regulated activities.

The provisions of this chapter shall apply to the following activities unless exempt, pursuant to MTMC 16.15.100, Exempt activities, or otherwise allowed, pursuant to MTMC 16.15.110. A critical area report may be required to support the requested activity. Activities include, but are not limited to:

- A. Removing, excavating, disturbing or dredging soil, sand, gravel, minerals, organic matter or materials of any kind;
- B. Dumping, discharging, or filling with any material;
- C. Draining, flooding or disturbing the water level or water table, or diverting or impeding water flow;
- D. Driving pilings or placing obstructions;
- E. Constructing, reconstructing, demolishing or altering the size of any structure or infrastructure;
- F. Destroying or altering vegetation through clearing, grading, harvesting, shading, or planting vegetation that would alter the character of a critical area;
- G. Activities that result in significant changes in water temperature, physical or chemical characteristics of water sources, including quantity and pollutants;

H. No new critical facilities shall be constructed in any critical area and critical area buffer, unless otherwise provided for by this chapter. Existing critical facilities shall not be altered except in conformance with the provision of the chapter and consistency with current building and fire code standards per city code;

I. Critical area mitigation sites; and

J. Any other activity potentially affecting a critical area or buffer not otherwise allowed or exempt from the provisions of this chapter, as determined by the Director, in writing, per MTMC 16.15.160(D). (Ord. 2731 § 2 (Exh. A), 2018).

16.15.100 Exempt activities.

A. Exempt activities per subsection B of this section are subject to compliance with the following:

1. Compliance with critical area standards of this chapter, and any other applicable local, state, or federal regulations.
2. The activity results in the least amount of impact to the critical areas and is conducted using the best management practices, as defined by this chapter.
3. The use or activity may not result in a loss to the functions and values of the subject critical areas.
4. Any incidental damage to, or alteration of, a critical area that is not a necessary outcome of the exempted activity shall be restored, rehabilitated, or replaced at the responsible party's expense.
5. The proponent obtains any other approvals or permits required by the City or other agencies with jurisdiction.
6. Other uses or activities, not identified in this section, may be permitted or restricted in a critical area as described in the applicable critical area section of this chapter and its provisions.

B. Exempt Activities. The following activities are exempt from critical area review or critical area permit under this chapter unless otherwise stated, provided they are consistent with subsection A of this section:

1. Development vested prior to the effective date of the ordinance codified in this chapter pursuant to MTMC 16.15.105.
2. Activities covered by prior review and approval. Activities that are consistent with a previously completed critical area review are not required to complete a new review. For example, if a critical area review occurred as part of a development proposal (such as site development, subdivision, or conditional use permit), construction permits related to the approved development should not need to be readdressed as long as the construction is consistent with the original approval. Such activities are exempt from this chapter, when:
 - a. There have been no material changes in the potential impact to the critical areas or buffers since the prior review;
 - b. There is no new information available that is applicable to any critical area review of the site or particular critical area;
 - c. The original permit or approval has not expired or, if no expiration date, no more than five years has elapsed since the issuance of that permit or approval;
 - d. The prior permit or approval, including any conditions, has been complied with; and
 - e. When applicable, a notice on title is recorded, pursuant to MTMC 16.15.250, and a copy provided to the City prior to any further activities commencing.
3. Activities involving artificially created wetlands or streams intentionally created from non-wetland sites including, but not limited to, grass-lined swales, irrigation and drainage ditches, retention or detention facilities,

and landscape features, except wetlands or streams intentionally created to mitigate conversion of wetlands or that provide ~~critical~~ habitat for anadromous fish.

4. Previously legally filled wetlands.

5. Development proposals within physically separated and functionally isolated wetland or stream buffers.

Functionally disconnected buffers occur when legally established development blocks the protective measures or any ecological functions and values that a buffer provides and increasing the buffer on the far side of the development would add no protective benefit. Functionally disconnected buffers may be appropriate to exclude from regulated buffers. Functionally disconnected buffers may be created by:

a. Significant developments

b. Public infrastructure such as paved roads and railroads

c. Private developments such as houses or commercial structures

The following typically do not create functionally disconnected buffers:

a. Trails

b. Minor accessory structures

c. Paths

d. Driveways serving a single unit residence

~~A use or activity physically separated from a stream or wetland or other critical area by existing, legally established structures, or an improved public right of way, may be exempt from the prescribed buffer widths and mitigation of this chapter when the property owner can demonstrate the use or activity occurred prior to their acquisition of the property and prior to City adoption of codes regulating the wetland or stream buffers.~~

The Director may, based on a site investigation and other available sources, determine to require an assessment and functional analysis report by a qualified professional that demonstrates the interrupted buffer area is functionally and/or hydrologically isolated from the critical area, ~~and consistent with MTMC 16.15.400(D)(6).~~

6. Minor Site Investigative Work. Site investigative work and studies that are prerequisite to preparing an application for development including soils tests, water quality studies, wildlife studies and similar tests and investigations; and where such activities do not require grading, construction of access, or significant amounts of excavation. In every case, impacts to the critical area shall be minimized and disturbed areas shall be immediately restored consistent with this chapter.

7. Operation, Maintenance, or Repair.

a. Normal and routine operation, maintenance, or repair of existing structures, infrastructure improvements, utilities and associated structures, public or private roads, or drainage systems, that do not require construction permits; provided, that the activity does not further alter or increase the impact to, or encroach further within, the critical area or buffer, does not increase the impervious area, and there is no increased risk to life or property as a result of the proposed operation, maintenance, or repair.

b. Normal maintenance and repair of residential or commercial structures, facilities and landscaping; provided, that reconstruction of any structures may not increase the impervious floor area, and that the provisions of this chapter and MTMC 19.120.250 are followed.

8. Demolition. Demolition of structures located within critical areas or their buffers that are 200 square feet or less in size, subject to an approved erosion control plan and permit consistent with the City stormwater manual and clearing limits that will adequately protect the critical area, and no use of heavy equipment. Structures in excess of 200 square feet, or demolition of structures necessary to support or stabilize landslide hazard areas, or other sensitive use, are not exempt from critical area review per MTMC 16.15.120.

9. Modification to Existing Structures. Structural modification of, addition to, or replacement of an existing, legally constructed structure within critical areas or buffers shall be allowed, when the modification:

- a. Does not increase the footprint or square footage of the structure; except that square footage may be added to the structure consistent with the dimensional requirements of the underlying district; provided, that on-site critical areas and/or buffers are mitigated per this chapter, at the discretion of the Director;
- b. Does not alter or increase the impact to the critical area or buffer except to a more conforming status per this chapter;
- c. Does not increase risk to life or property as a result of the proposed modification or replacement; and that
- d. Application for restoration of structures substantially damaged by fire, flood, or act of nature must be initiated consistent with the nonconformance provisions per MTMC 19.120.250, as evidenced by the application for a valid building permit within 12 months of the damage, and diligently pursued to completion.

10. Passive Outdoor Activities. Recreation, education, and scientific research activities that do not degrade the critical area including but not limited to interpretive field trips, fishing, hiking, and bird watching. Walkways and trails, subject to subsections (B)(12) and (13) of this section, are limited to minor crossings of streams and wetlands having no adverse impact on water quality. They should be generally parallel to the perimeter of the wetland, located only in the outer 25 percent of the wetland buffer area, and located to avoid removal of significant trees. They should be limited to pervious surfaces no more than five feet in width for pedestrian use only.

Raised boardwalks and wildlife viewing structures utilizing materials acceptable for the proposed location may be acceptable, consistent with any other permitting requirements per this chapter or City Code.

11. Recreation Areas – Operation, Maintenance, Repair, or Replacement.

- a. Maintenance, operation, repair, modification, or replacement of existing publicly improved recreation areas as long as any such activity does not involve the expansion of facilities and existing improvements into a previously unimproved portion of critical areas or required buffers.
- b. When such activities occur within designated fish and wildlife habitat conservation areas they shall be performed consistent with the development standards of this chapter, best available science, or adaptive management plans as recognized by the City. Retention and replanting of native vegetation shall occur wherever possible in areas of land disturbance.

12. Existing Public and Private Pedestrian Trails. Normal maintenance, repair, and reconstruction of existing public and private pedestrian trails; provided, that the activity does not further alter or increase the impact to, or encroach further within, the critical area or buffer, and does not increase the impervious area.

13. New Public and Private Pedestrian Trails. New public and private pedestrian trails, subject to the following:

- a. Walkways and trails are limited to minor crossings of streams and wetlands having no adverse impact on water quality. They should generally parallel the perimeter of the wetland, located only in the outer 25 percent of the wetland buffer area, and located to avoid removal of significant trees. The trail surface should be pervious surfaces and meet water quality standards set forth in the City's current stormwater management regulations. Limited exceptions are permitted to allow impervious surfaces to provide accessibility. Trails are limited to pedestrian use and should be no more than five feet in width, unless the Director determines the public benefit derived from a wider trail together with compensatory mitigation is equal to or better than what would otherwise have been achieved. Raised walkways and wildlife and viewing structures utilizing approved support structures are acceptable. Removal of significant trees shall be avoided. The critical area and/or buffers abutting the trail shall be replanted or restored where feasible, equal to the width of the trail corridor, including disturbed areas.

- b. Where legally established development has reduced the width of the buffer, trails may be placed in the outer 25 percent portion of the remaining critical area buffer. Public use trails may be placed within critical areas and buffers when providing public access to water-dependent activities, consistent with an adopted master plan.
- c. Trails to be located in a geologic (landslide or erosion) hazard area shall be constructed in a manner that does not increase the risk of landslide or erosion and in accordance with an approved geotechnical report.
- d. Trails in the shoreline jurisdiction are regulated by Chapter 16.10 MTMC.

14. Minor Conservation and Enhancement. ~~Minor conservation and enhancement of critical areas that do not alter the location, dimensions or size of the critical area or buffer and result in improvement of the critical area functions and values, including the removal of noxious weeds or invasive vegetation, pursuant to MTMC 16.15.115. Conservation and restoration activities that clearly demonstrate net ecological gain are exempt from the provisions of this chapter, provided the conservation and restoration activities are not actions taken for mitigation purposes.~~

15. Trees and Vegetation Maintenance.

a. Normal maintenance of vegetation and trees, performed in accordance with best management practices; provided, that such management actions are part of a regular and ongoing maintenance program, do not expand further into the critical area, are not the result of an expansion of a structure or utility, and do not directly impact an endangered or threatened species.

b. No vegetation or trees shall be altered or removed from a critical area or its buffer without prior approval from the Director, pursuant to MTMC 16.15.115, except in an emergency, pursuant to MTMC 16.15.110.

c. Removal of noxious weeds or invasive vegetation is allowed given requirements per MTMC 16.15.115(A) are met, including but not limited to the revegetation the area of removal with site-appropriate native species.

16. Active or Imminent Hazard Trees. Active or imminent hazard trees, and trees deemed an emergency pursuant to MTMC 16.15.110, may be converted to a snag or removed subject to the following:

a. The tree is consistent with the definition of a hazard tree.

b. Creating a snag is prioritized over complete tree removal. If creating a snag is not sufficient to address the hazard, tree may be removed. Removal does not include the removal of the cut tree materials themselves, unless otherwise permitted by a qualified professional or the Director.

c. Tree work to address the hazard avoids and minimizes damage to remaining trees and vegetation in the area.

d. The City and/or utility provider is removing the trees and/or ground cover in situations involving immediate danger to life or property, substantial fire hazards, or interruption of services provided by a utility.

d. The Director shall be provided with documents from a qualified ~~professional arborist~~ that substantiate the hazardous nature of the removed trees. The City retains the right to require compliance with any applicable requirements per MTMC 16.15.115, and additional mitigation per MTMC 16.15.220. The City may also require a clearing and grading permit.

e. Removal of non-imminent hazard trees is regulated pursuant to MTMC 16.15.115.

17. Activities within the Improved Right-of-Way. Replacement, modification, installation, or construction of utility facilities, lines, pipes, mains, equipment, or appurtenances, not including substations, when such facilities are located within the improved portion of the public right-of-way or City-authorized private roadway

except those activities that alter a wetland or watercourse, such as culverts or bridges, or result in the transport of sediment or increased stormwater. If right-of-way activities impact wetlands or watercourses—whether directly through alteration of indirectly through transportation-related effects or increased stormwater runoff the following is required:

- a. buffer widths shall be increased equivalent to the width of the right-of-way improvement, including all disturbed areas
- a.b. Native vegetation within and adjacent to the right-of-way shall be retained where possible, and disturbed areas shall be replanted with appropriate native species to restore ecological function.

18. Minor Utility Projects. Utility projects which have minor or short-duration impacts to critical areas, in accordance with the criteria below and other applicable permits; provided, that the activity:

- a. Involves the placement of a utility pole, street signs, anchor, or vault or other small component of a utility facility;
- b. Disturbs an area of land no more than 75 square feet in size at any one location;
- c. Does not significantly impact the function or values of a critical area(s);
- d. There is no practical alternative with less impact on critical areas;
- e. Shall not result in the transport of sediment or increased stormwater;
- f. Is constructed with best management practices;
- g. Any areas disturbed shall be replanted and restored consistent with underlying critical area type;
- h. Public works projects that involve the provision or transmission of a utility, and public works projects that are consistent with the City's transportation plan, where no alternative routing options are reasonable.

19. Chemical Applications. The application of herbicides, pesticides, organic or mineral-derived fertilizers, or other hazardous substances, if necessary, as approved by the City; provided, that their use shall be restricted in accordance with Washington State Department of Fish and Wildlife Management and Department of Ecology recommendations, the regulations of the State Department of Agriculture, and the U.S. Environmental Protection Agency.

20. Navigational Aids and Boundary Markers. Construction or modification of navigational aids and boundary markers, not permanently anchored.

21. Minor activities not mentioned above and determined by the Director to have minimal impacts to a critical area, pursuant to MTMC 16.15.160(D). (Ord. 2747 § 3, 2019; Ord. 2731 § 2 (Exh. A), 2018).

16.15.105 Nonconformances.

A. Any legal use or legal structure in existence on the effective date of the ordinance codified in this chapter that does not meet the buffer requirements or building setbacks of this chapter for any designated critical area shall be considered a legal nonconforming use or structure.

B. Any legal use or structure for which an application has vested or for which a permit has been obtained prior to the effective date of the ordinance codified in this chapter, that does not meet the buffer requirements or building setback of this chapter for any designated critical area, shall be considered a legal nonconforming use or structure.

C. A legal nonconforming use or structure may be maintained or repaired provided the work does not increase the previously approved structure footprint or impervious area. A legal nonconforming use or structure shall not be, enlarged or extended in any manner that would further encroach into the critical area, buffer, or building setback. Additions and expansions above the ground floor may be utilized an unlimited number of times within zoning requirements.

D. A legal nonconforming use or structure that has been damaged or destroyed by fire or other calamity may be restored and its immediately previous use may be resumed unless the use or structure has been abandoned, vacated, discontinued, or terminated for a continuous period of six months shall not be resumed, rebuilt, or reoccupied except in conformance with the regulations in this chapter and Title 19.

E. Legally established lawns may be mowed and maintained, but not expanded in the buffer and/or critical area.

F. Non-native vegetation may be maintained, but not expanded in the buffer and/or critical area.

16.15.110 Emergencies.

A. Emergency actions are those activities necessary to prevent an immediate threat to public health, safety, or welfare, or that pose an immediate risk of damage to private property and that require remedial or preventative action in a time frame too short to allow for compliance with the standard procedural requirements of this chapter.

B. Emergencies which occur in critical areas and buffers are exempt from the provisions of the critical area regulations on a temporary basis and are subsequently subject to the provisions of this section and applicable provisions of this chapter.

C. Emergency actions that create an impact to a critical area or its buffer shall use reasonable methods to address the emergency; in addition, they must have the least possible impact to the critical area or its buffer.

D. Notice of Emergency. Within 30 working days of commencing the emergency activity, the person or agency taking such action shall notify the Director in writing and include the following. Providing notification does not waive the need to comply with any and all other applicable local, state, or federal requirements.

1. The location and nature of the emergency.
2. Photographic proof or other evidence to document the hazardous nature of the emergency.
3. A description of the actions taken to date.
4. A description of further actions expected to be taken including restoration or mitigation.
5. The anticipated time frame for completing abatement and restoration actions.
6. Contact information (name, address, phone, and email and after-hours contact).
7. Any other useful and pertinent information related to the cause of the emergency and reason to take emergency action.

E. Determination of Emergency – Process and Decision.

1. Within 14 days of notice of the emergency, the Director shall review the submitted notification per subsection D of this section, and determine if the action taken was within the scope of an emergency action per subsection A of this section, and as defined in MTMC 16.15.500.
2. If the Director determines the action was within the scope of an emergency, the person or agency shall proceed with the applicable procedural and mitigation requirements of this chapter.

3. If the Director determines that the action or any part of the action taken was beyond the scope of an allowed emergency action, then the provisions of MTMC 16.15.320, Unauthorized alterations of critical areas, may apply.

4. The Director may initiate the enforcement and penalty provisions of this chapter, MTMC 16.15.380, when the Director has reason to believe a violation has occurred.

F. Restoration and/or mitigation activities must be initiated within one year of the date of the emergency and completed in a timely manner, unless otherwise approved. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.115 Trees and vegetation – Activities and standards.

Activities that improve critical area functions and values are permitted. This includes minor conservation and enhancement of critical areas that ~~clearly demonstrate a net ecological gain does not alter the location, dimensions, or size of the critical areas or buffers, and removal activities described in this section~~, subject to the applicable regulations. Nonexempt and unauthorized alterations of trees are subject to MTMC 16.15.350 and 16.15.380.

A. Removal of Noxious Weeds or Invasive Vegetation.

1. The purpose is to encourage the removal of noxious, nonnative, and invasive species of vegetation and trees within critical areas and their buffers to improve, preserve, and protect the health of the vegetation and trees, and promote increased diversity of native vegetation and trees.

2. No permit or prior approval is required to conduct the activities as described in this section, except as otherwise stated.

3. Noxious weeds or invasive vegetation may be removed from critical areas in unlimited quantities (such as English ivy (*Hedera helix*); Himalayan blackberry (*Rubus discolor*, *R. procerus*); and evergreen blackberry (*Rubus laciniatus*), provided:

a. All work is performed above the ordinary high water mark and above the top of a stream bank, and is prohibited in very high risk landslide hazard areas unless otherwise approved;

b. Invasive and noxious weeds are on either the Snohomish County or Washington State Noxious Weed Control Board lists and removed in accordance with the control board guidelines and best management practices including handling and disposal methods appropriate to that species.

~~4. The removal may be only undertaken with hand labor, including handheld mechanical tools, and the soil surface must remain undisturbed. On private property, other removal methods may be allowed with a permit and City approval, consistent with the Snohomish County Noxious Weed Control Board. When performed on City owned property, use of other means of removal shall be in accordance with Snohomish County Noxious Weed Control Board requirements and any requisite certification. The removal methods shall be done as least invasive as possible to minimize disturbance to the soil and non-invasive vegetation. Consult with the Snohomish County Noxious Weed Control Board for guidance.~~

5. Areas cleared by removal of noxious and/or invasive plant species must be revegetated with site-appropriate native species at natural densities and the site must be stabilized against erosion in accordance with the stormwater manual adopted by the City within 30 days of removal.

6. Noxious weed removal is exempt from a permit subject to the following area limitations; otherwise a clearing and grading permit is required.

a. Within private property, up to 250 square feet of area may be cleared to bare soil, cumulative in any one calendar year, without a permit and critical area report prepared by a qualified professional.

b. On City-owned property or right-of-way, no more than 2,000 square feet of soil may be exposed at any one time.

B. Alteration and Removal Activities of Healthy Trees.

1. Removal or topping of a significant or nonsignificant healthy tree, as defined by this chapter, is not permitted in critical areas ~~and or buffers, unless otherwise justified by the submittal of a critical area preliminary assessment application, per MTMC 16.15.160, or a tree assessment and removal report from a qualified professional that documents the hazard and provides a removal and mitigation plan, per subsection E of this section.~~

~~2. Mitigation for removed trees shall be pursuant to subsection D of this section.~~

C. Hazard Trees.

1. Imminent hazard trees, as defined by this chapter, may be removed subject to emergency provisions of MTMC 16.15.110.

2. Minor pruning and crown thinning of non-imminent hazard trees is permitted to lessen or remove the hazard, such as wind damage to limbs or trunks. Where pruning or crown thinning is not sufficient to address the hazard, a tree evaluation report, subject to subsection E of this section is required. ~~trees~~ Converting hazard trees should be converted to wildlife snags shall be prioritized. ~~or, w~~ When this still presents a hazard, trees may be removed entirely, ~~subject to subsection E of this section.~~

3. For hazardous circumstances that are not active or imminent, such as suspected tree rot or diseased trees or less obvious structural wind damage to limbs or trunks, the property owner shall submit a critical area preliminary assessment application and tree evaluation report, per subsection E of this section.

4. Mitigation for removed trees shall be pursuant to subsection D of this section.

D. Mitigation.

1. The Director shall authorize only such alteration to existing trees and vegetation as may be necessary to eliminate the hazard and shall condition authorization on means and methods of removal necessary to minimize environmental impacts, including replacement of any significant trees.

2. All cut vegetation (tree stems, branches, etc.) shall be left within the critical areas or buffers unless removal is warranted due to the potential for disease or pest transmittal to other healthy vegetation per the recommendations of the qualified professional, and approval from the Director.

3. Removed trees shall be replaced within one year of removal. Replacement shall be 10 trees for each tree removed and may be planted at a different, nearby location on the same property if planting in the same location would create a new hazard or potentially damage the critical area, in accordance with an approved restoration plan. Replacement trees should be native and indigenous to the area. Tree size shall be a minimum of one inch in diameter at breast height (dbh) for deciduous trees and a minimum of six feet in height for evergreen trees as measured from the top of the root ball, unless otherwise approved or required. The Director may approve or require, or a qualified professional tree evaluation report may recommend, an increase or decrease in the replacement quantity and size to improve survival rates, achieve quick recovery or other benefit to the critical area or buffer. The final decision is at the discretion of the Director.

4. For a priority habitat tree, such as an eagle perch or occupied nest, a qualified professional shall be consulted, at the applicant's expense, to determine timing, methods of removal and mitigation of such tree.

E. Tree Evaluation Report. Approval to cut or clear trees, as proposed by the property owner, may only be given upon recommendation of the qualified professional that the condition constitutes an actual threat to life or property in homes, private yards, buildings, public or private streets and driveways, sidewalks, improved utility corridors, or access for emergency vehicles, or a pedestrian way, and approved by the Director for purposes of this section.

1. Tree Evaluation Report. A professional evaluation of trees and/or a tree protection plan, prepared by a qualified professional, may be required where the Director deems such services necessary to demonstrate the condition of a tree proposed for removal or significant alteration, or an activity that poses harm to a tree, such as filling or grading with more than six inches of highly humus-rich and permeable soil, whether or not the tree is hazardous.

2. Report Contents. The evaluation may include, but is not necessarily limited to:

- a. A written description of the existing conditions on the property in proximity to the tree and at least 10 feet beyond the dripline of the tree.
- b. An assessment of the condition of the tree, documenting the degree of hazard.
- c. An evaluation of the anticipated effects of removal of the tree on the critical areas functions and values, including the impact on the viability of trees on and off site in proximity to the subject tree.
- d. A plan for any required tree protection or replacement measures; and supervising and/or monitoring implementation of any required tree protection or replacement measure appropriate to the impact.
- e. Include a post-construction site inspection and evaluation.
- f. The qualified professional shall include an assessment of whether a portion of the tree is suitable for a snag for wildlife habitat and may safely be retained.
- g. The report (or critical area preliminary assessment (CAPA)) shall include a grant of permission for the Director and/or qualified professionals under contract with or employed by the City to enter the subject property to evaluate the circumstances.
- h. The report is signed by the qualified professional.

3. The Director may determine the extent of tree removal or that there may be sufficient impact of the functions and value of the critical area that a critical area report is required, pursuant to MTMC 16.15.200. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.120 Critical area review – Process and procedures.

When a proposed use, activity or action may impact a critical area the following procedure would generally be followed to evaluate whether and how the use or activity is regulated by this chapter. Additional procedural steps and filing requirements may apply.

A. The proponent of a development use or activity for a property meets formally or informally with the City, pursuant to MTMC 16.15.150.

B. Concurrent with or subsequent to A of this section, the applicant may submit an application for a critical area preliminary assessment (CAPA), pursuant to MTMC 16.15.160. The applicant may also elect to proceed directly to preparation of a critical area report(s), pursuant MTMC 16.15.200, and any other applicable critical area sections of this chapter.

C. The Director will evaluate the project area and vicinity of the proposal for critical areas and make an initial determination on presence of critical areas and the appropriate review and decision-making process for the proposed use or activity, pursuant to MTMC 16.15.160.

D. Critical Area Review.

1. The applicant prepares and submits any required applications, permits, reports, and any special studies. Critical area reports shall be prepared consistent with MTMC 16.15.200 and the additional reporting requirements for each critical area type, per MTMC 16.15.400 through 16.15.450, as applicable.
2. The City shall:
 - a. Make a determination of complete application and issue notice of application, pursuant to MTMC 16.15.140.
 - b. Evaluate the application materials and determine whether the proposal is likely to impact the functions or values of critical areas.

- c. Determine if the proposed project adequately addresses the potential impacts to the critical area and whether they can be avoided, minimized or mitigated per the mitigation sequencing process.
- d. Determine whether the proposal conforms to the requisite critical area requirements and standards of this chapter.
- e. Confirm the mitigation sequencing and location preferences per MTMC 16.15.210 through 16.15.240 have been satisfied.

3. The Director shall issue a written decision, with or without conditions, consistent with the procedures, notification, criteria and applicable requirements and standards set forth in this chapter, or forward a recommendation to the Hearing Examiner when the Hearing Examiner is the decision authority.

4. The applicant may proceed with the proposed use, activity, or action consistent with the decision and all applications, standards and regulations, including MTMC 16.15.250, Notice on title.

5. Appeals of decisions can be made, pursuant to MTMC 16.15.385.

E. Review and Decision-Making Matrix.

Type of Review	Application Form	Process	Decision Criteria	Decision Maker	Decision Timeline ¹	Appeal	Public Notice	Notice on Title	Fee
Informal Meeting	N/A	Admin	N/A	N/A	N/A	N/A	N/A	N/A	No
Preapplication Conference	Preap CAPA (opt.)	Admin	16.15.150	Admin	Varies	N/A	N/A	N/A	Yes*
Critical Area Preliminary Assessment ^{2,3}	CAPA	Admin	16.15.160	Director	30 days	Director	N/A	Yes	No
Emergency, Determination of ⁴	Letter	Admin	16.15.110	Director	14 days	Hearing Examiner	N/A	N/A	No
Critical Area Review and Approval	CAR	Admin	16.15.120	Director	Consistent with any underlying permit, unless otherwise approved (typically 120 days)	Hearing Examiner	Yes	Yes	Yes
Alteration, or Buffer	CAR	Admin	16.15.310; 16.15.400 – 16.15.450	Director		Hearing Examiner	Yes	Yes	Yes
Averaging Reasonable Use Exception	RUE	Public Hearing	16.15.360	Hearing Examiner		Superior Court	Yes	Yes	Yes
Variance	VAR	Public Hearing	16.15.350	Hearing Examiner		Superior Court	Yes	Yes	Yes

¹ From date of application or determination of completeness, whichever is later.

² Critical Area Preliminary Assessment: A process to allow a preliminary determination whether or not critical areas or buffers are present in the project area, whether the proposal would likely affect a critical area or buffers, and if additional review is required. This decision vests for five years but does not vest future permits or land use proposals or applications.

³ Designation of Critical Area: A process that allows a property owner to have the limits of critical areas and/or buffers, on or near the site, defined to establish the buffers and identify the development impact on them and potential mitigation measures for a specific development. The property is posted with a notice of critical area designation application. A decision vests for five years for the development proposal.

⁴ Emergency, Determination of: The person or agency who took an action affecting a critical areas as an emergency measure shall, within 30 working days of taking such emergency action, submit a written notice of emergency to the Director, pursuant to MTMC 16.15.110(D). Providing notification does not waive the need to comply with any and all applicable requirements.

* Except single-family homeowner.

(Ord. 2731 § 2 (Exh. A), 2018).

16.15.130 Applications.

A. All applications for permits or actions within the City's critical areas shall be submitted on forms provided by the Department. The permit application forms, copies of all current regulations, and submittal requirements that apply to

the subject application shall be available from the Department. Application types include, but are not limited to, critical area preliminary assessment, reasonable use exception, variance, or alteration.

B. At a minimum, each application submittal shall include:

1. Completed application form(s) with the authorized signature of the applicant;
2. All requisite filing requirements including drawings, reports and studies, and any other materials, as appropriate and sufficient to review and process the application and render a decision consistent with the provisions of this chapter; and
3. Processing fee. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.140 Notice of application.

A. No notice is required to review and make a critical area preliminary assessment.

B. Notification to the public of the presence or potential presence of critical areas shall occur per notice of development application consistent with MTMC 18.05.120. The notice shall include the critical area preliminary assessment determination, if already made. Other noticing requirements which may apply to the underlying application or permit shall include notice of critical area, if determined to be present. (Ord. 2811 § 8, 2022; Ord. 2731 § 2 (Exh. A), 2018).

16.15.150 Preapplication meeting.

A. General. The purpose of the preapplication meeting is to discuss the proposal in general terms and the requirements of this chapter, provide critical areas map information, identify potential concerns related to the proposal, and generally outline the applicable requirements, including permits and the review and approval process. Information given at a preapplication meeting is nonbinding. Plans presented at the preapplication meeting are nonbinding and do not vest an application. All applicants, regardless of participation in any preapplication meeting, are held fully responsible for knowledge and disclosure of critical areas on, adjacent to, or associated with a subject parcel and full compliance with the specific provisions and goals, purposes, objectives, and requirements of this chapter.

B. An informal preapplication meeting, pursuant to MTMC 18.05.080 is optional at the discretion of the proponent. The proponent provides basic information on the property and the proposal. The City provides best available information on critical areas on, or in, the vicinity of the property. The City also provides guidance on the expected review and approval process.

C. A formal preapplication meeting, pursuant to MTMC 18.05.080 and this section, is required prior to submitting a formal application for development or use of land, or prior to starting an activity or use of the land, that may be regulated by this chapter.

1. Prior to the meeting, the applicant shall submit information to the City to include:

- a. A completed preapplication form.
- b. An existing features site plan.
- c. A conceptual proposal map.
- d. A description of the proposed development or activity.
- e. A completed critical area preliminary assessment form.
- f. Preliminary critical area reports, if available.
- g. Any other information that could be useful to understand and evaluate the proposal and the requirements of this chapter.

2. The City is to review the information submitted and conduct a site visit.

3. At the preapplication meeting, the Director may provide a preliminary determination of the presence of critical areas, pursuant to MTMC 16.15.160. The preliminary determination may include whether critical area reports are required and, if so, what level of detail and what elements may be necessary for the proposal. A preliminary determination does not preclude the Director from requiring additional critical area report information during the review of the project once applied for. (Ord. 2811 § 9, 2022; Ord. 2731 § 2 (Exh. A), 2018).

16.15.160 Critical area review – Preliminary assessment.

A. Purpose and Applicability.

1. Whenever a proposed use or activity is, or is believed to be, in or adjacent to a critical area, per MTMC 16.15.030, or as shown on the City's critical area maps per MTMC 16.15.080, the proponent shall apply for a "Critical Area Preliminary Assessment" review and determination on a form provided by the City, except the applicant may choose to hire a qualified professional to provide assurances on critical areas and potential impacts and elect to forgo the critical area preliminary assessment process. The purpose of a critical area preliminary assessment review is to evaluate whether a critical area or critical area buffer appears to exist on, or adjacent to, the proposal site, whether the proposed use or activity may affect the critical area, and whether more detailed critical area information is needed.

2. The critical area preliminary assessment process applies only to the current inquiry or proposal and does not mean that further or future review of critical areas impacts may not be required for consistency with this chapter.

3. Proposals that qualify as an exempt activity or use, per MTMC 16.15.100 or 16.15.110, may proceed with the proposal subject to compliance with those sections of this chapter and meeting any other applicable City laws and standards.

4. The property owner may submit for a critical area preliminary assessment with or without a development proposal or development application.

B. Filing Requirements. The applicant shall, at a minimum, prepare and submit the following materials for review:

1. A completed and signed critical area preliminary assessment (CAPA) application form, except the applicant may elect to forgo the critical area preliminary assessment process and proceed directly to preparation of a critical area report per MTMC 16.15.200. The applicant may choose but is not necessarily required to hire a qualified professional to provide assurances on critical areas and potential impacts.

2. Processing fee, if applicable.

3. Vicinity map, one-quarter mile radius from site of proposal, labeled. Show parcel lines.

4. Site plan map, showing location of proposed use/activity, existing structures and improvements, open spaces and habitat connectivity, and topography, along with other relevant information, at a scale of one inch equals 20 feet unless otherwise approved by the Director.

5. Other pertinent information (studies, photographs, other).

6. Any materials the applicant considers informative and relevant to the determination process.

7. Any additional materials the Director may request prior to, or subsequent to, submittal of the application when the Director judges it is valid to evaluate and make a preliminary assessment determination.

C. Review and Approval Process. The following steps shall be taken to process a critical area preliminary assessment application to determine the presence or lack of critical areas and/or buffers on a site and whether there may be a potential impact of the proposed use or activity:

1. A preapplication conference per MTMC 16.15.150 is required unless waived by the Director. An informal preapplication conference may be requested by the applicant, pursuant to MTMC 16.15.150(B).
2. Application. The applicant submits the critical area preliminary assessment form together with the filing requirements, other information and any requested materials consistent with subsection B of this section.
3. Determination of Completeness.
 - a. The Director shall verify the filing requirements in subsection B of this section have been met and reject the application if there are obvious factual errors or omissions, or there are inconsistencies between the submitted materials and observable data, and/or any best available science.
 - b. When deemed complete, a public notice of application will be issued consistent with MTMC 16.15.140.
4. Review and Decision. The Director shall, in general, review and make a decision based on:
 - a. Review of the information submitted by the applicant, and other relevant and best available information for site conditions and evidence of critical area.
 - b. A site visit for a visual check of the potential presence of a critical area on or adjacent to the subject property and potential impact on any critical area or buffer. The site visit will include an assessment of what functions and values the project area and site conditions provide for the critical area.
 - c. An evaluation whether the proposal is likely to negatively impact the functions and values of a critical area or buffer based on a review of the submittal materials, best available information, the site visit and the criteria per subsection D of this section.

D. Criteria for Decision. The Director shall conclude that one of the following applies to the subject property and issue a written determination of consistency, per subsection E of this section, based on finding the requisite criteria have been met:

1. No critical areas present. No further critical area review is required.
 - a. The application materials and other available information are complete, pursuant to subsection B of this section, and sufficient to make a determination.
 - b. The application materials, together with a site visit, reveal that the project area is not within, or adjacent to, a critical area or buffer.
2. Critical areas are present, but no impact. There is no need for a critical area report or mitigation.
 - a. The application materials and other available information are sufficient to make a determination.
 - b. The application materials, together with a site visit, reveal that there are critical areas or buffers within or adjacent to the project area.
 - c. There will be no alteration of the critical area or buffer.
 - d. The proposed activity is not prohibited within a critical area or its buffer.
 - e. The proposal is unlikely to degrade the functions or values of the critical area.
3. Critical areas are present; there may be an impact. A critical area report may be required, pursuant to MTMC 16.15.200, to assess the impacts and prepare a mitigation plan.
 - a. The application materials and other available information are complete pursuant to subsection C of this section and sufficient to make a determination;

b. The application materials, together with a site visit, reveal that the project area is within, or adjacent to, a critical area or buffer;

c. The proposed activity is consistent with exempt or allowed activities within a critical area or its buffer and is not prohibited within a critical area or its buffer;

d. While the project area has no, or low, current function or value for a critical area or buffer, the proposed activity is likely to have a minor impact on and further degrade the functions or values of a critical area or buffer on or adjacent to the project area or site;

~~e. The potential impact of the proposed activity can be adequately mitigated, pursuant to MTMC 16.15.210 through 16.15.240, and there will be no alteration of the critical area or buffer except to improve functions and value per a mitigation plan. A critical area report is required to assess the impacts and prepare mitigation and monitoring plans consistent with MTMC 16.15.200, and mitigation plans, pursuant MTMC 16.15.210 through 16.15.240, as applicable.~~

~~4. Critical areas are present and likely to be affected by the proposal.~~

~~a. The application materials and other available information are sufficient to make a determination;~~

~~b. The application materials together with a site visit reveal that the project area is within, or adjacent to, a critical area or buffer;~~

~~c. The proposed activity is not prohibited within a critical area or its buffer;~~

~~d. The project area provides some functions or values for a critical area or buffer, and/or the proposed activity is likely to have an impact on or degrade the functions or values of a critical area or buffer on or adjacent to the project area or site;~~

~~e. There will be alteration of the critical area or buffer and mitigation is needed;~~

~~f. A critical area report is required to assess the impacts and prepare mitigation and monitoring plans consistent with MTMC 16.15.200, and mitigation plans, pursuant MTMC 16.15.210 through 16.15.240, as applicable.~~

E. Decision. The Director shall issue a written determination consistent with conclusions reached per subsection D of this section.

1. The Director may attach conditions to any decision in order to protect critical areas or to require further evaluation and/or special reports to assure protection of critical areas and indicate the reason for the condition.

2. The critical area determination shall be referenced on any permits related to this decision.

3. Required reports shall be consistent with the critical area reporting requirements in this chapter for each critical area type. Critical area reports must be submitted prior to further review of the proposal.

4. The Director's determination regarding the apparent presence or absence of critical areas is not an expert certification regarding critical areas and the determination is subject to possible reconsideration if new information is received.

5. The determination shall be valid up to five years. The critical area preliminary assessment decision does not vest to future permits or land use proposals or applications.

6. Notice on Title. The applicant shall record a notice on title, consistent with MTMC 16.15.250, except when a determination of no critical areas is made.

7. The applicant may proceed with the proposal subject to the decision and any conditions thereto, and meeting all applicable City laws and standards.

F. Appeal. The decision may be appealed, pursuant to MTMC 16.15.385. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.200 Critical area reports.

A. Report Required. When uses, activities, or developments are proposed within, adjacent to, or are likely to impact critical areas or their buffers, an applicant shall provide site-specific information and analysis in the form of critical area report(s) as required in this chapter. A critical area report shall identify the presence, extent, and classification/rating of potential critical areas, as well as analyze, assess, and mitigate the potential adverse impact to or risk from critical areas for a development project.

B. Critical area reports shall be prepared using best available science to evaluate the proposal and all probable impacts to critical areas in accordance with the provisions of this chapter.

C. Preparation by Qualified Professional. When a critical area report is required it shall be prepared by a qualified professional. Proof of licensing, credentials, and resume of the qualified professional(s) preparing the report shall be included in the report, which the Director shall review to determine if the minimum qualifications are met.

D. Minimum Report Contents. The report shall contain adequate information to determine compliance with the requirements of the critical area regulations in this chapter, specific to each critical area type, as indicated in the corresponding sections of this chapter. Reports for two or more types of critical areas must meet the reporting requirements for each type of critical area. Critical area reports can be submitted as multiple reports or combined in one report. The scope and location of the proposed project will determine which report(s) alone, or combined, are sufficient to meet the critical area report requirements for the impacted critical area type(s).

At a minimum, a critical area report shall contain the following:

1. The name and contact information of the applicant.
2. The dates, names and qualifications of the qualified professionals preparing the report or who contributed to the report and documentation of any fieldwork performed by them on the site.
3. Locational information including address, parcel number(s), legal description and a vicinity map.
4. A list of the development permit(s) associated with the proposal, including other agency critical area-related permits required for the project.
5. A copy of the site plan for the development proposal, drawn to scale to show the location of critical areas, buffers, the development proposal, and any areas to be cleared or otherwise impacted.
6. Identification and characterization of all critical areas and buffers, open space and habitat connectivity, on- and off-site, adjacent to the proposed project area, per MTMC 16.15.020, and the corresponding reporting requirements applicable to the identified critical areas as set forth in this chapter.
 - a. Site designation as shown on a regional, state or federal inventory map (such as National Wetland Inventory Map by U.S. Fish and Wildlife Service).
 - b. Designations as shown on any city inventory map.
 - c. Location of the critical area boundaries shall be accurately drawn at an appropriate engineering scale such that the information is clearly legible. Generally, a scale of one inch equals 20 feet shall be used (other preapproved scales may be acceptable). Existing features must be distinguished from proposed features. The map shall show:
 - i. Site boundary property lines and roads;
 - ii. Internal property lines, rights-of-way, easements, etc.;
 - iii. Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;

- iv. Contours at the smallest readily available intervals, preferably at two-foot intervals;
 - v. Delineated boundary of critical area (when multiple critical areas exist, each shall be prepared on a separate sheet and then shown on a composite sheet);
 - vi. Location of all test holes and vegetation sample sites, numbered to correspond with flagging in the field and field data sheets;
 - vii. For large and/or complex projects, an air photo with overlays displaying the site boundaries and wetland delineation may be required. Generally, an orthophotograph at a scale of one inch equals 400 feet or greater (such as one inch equals 200 feet) should be used. If an orthophotograph is not available, the center of a small scale (e.g., one inch equals 2,000 feet) aerial photograph enlarged to one inch equals 400 feet may be used.
7. A description of the methodologies used to conduct the critical areas investigation, including references and data sheets.
8. A description of the proposed stormwater management plan for the development and consideration of impacts to drainage alterations, when applicable.
9. Report Sections. A critical area report shall typically include the following sequence of report sections, unless modified pursuant to subsection E of this section:
- a. Reconnaissance. This section of the report shall describe the general site conditions including topography and acreage, all natural and manmade features within 200 feet of the site boundary, and the existence, general location, and type of critical areas on, and in the vicinity of, a project site. A determination whether the project will adversely impact, or be at risk from, the potential critical areas based on maximum potential buffers should be addressed;
 - b. Delineation. This section of the report shall identify the extent, boundaries, rating or classification, and applicable standard buffers of critical areas where the project area could potentially impact the critical area or its buffer, including an assessment of the characteristics of, or functions and values of, the critical area and buffers identified;
 - c. Analysis. This section of the report is an impact assessment documenting the potential project impacts to the critical area and buffers including a discussion of the efforts taken to avoid, minimize, and reduce potential impacts to those areas, consistent with MTMC 16.15.210;
 - d. Mitigation. This section of the report describes actions and measures that will be taken to prevent or compensate for the potential impacts of the project in accordance with the mitigation plan requirements of this chapter and the standards for the specific critical areas impacted. If any impacts to critical areas or their buffers are proposed, the applicant must demonstrate that the following were considered as options to satisfy the avoidance of impacts, if applicable:
 - i. Alternative building locations on the property;
 - ii. Adjustments to the project footprint and orientation;
 - iii. Modification of non-critical area setbacks, where feasible;
 - iv. Multi-story design or alternate building design
- When impacts cannot be avoided, mMitigation includes, but is not limited to, adjustments to required buffer sizes, best practices to minimize impacts, and critical area or buffer enhancement, restoration, or preservation plans. Mitigation plans may include habitat management plans, revegetation or replanting plans, and restoration plans, and identify appropriate performance standards, as applicable. When mitigation is required, the applicant shall submit a mitigation plan per MTMC 16.15.220 and 16.15.230,

this section, and the mitigation provisions for the applicable critical area type per MTMC 16.15.400 through 16.15.450;

e. Maintenance and Monitoring. Maintenance and monitoring plans must be consistent with maintenance and monitoring plan requirements pursuant to MTMC 16.15.240. The goals of the mitigation proposed, performance standards for success, monitoring methods and reporting schedule, maintenance methods and schedule, and contingency actions must be adequately addressed. Include cost estimates for determination of financial guarantee requirements to ensure implementation and compliance.

10. A statement of the accuracy of the report and all assumptions made can be relied upon.

11. Any additional reporting information required in the corresponding critical area reporting sections per MTMC 16.15.400 through 16.15.450.

12. Additional Information Requirements. The Director may require additional information to be included in the critical area report when determined to be necessary to the review of the proposed activity in accordance with this chapter, which may include, but is not limited to:

a. Historical data, including original and subsequent mapping, aerial photographs, data compilations and summaries, and available reports and records relating to the site or past operations at the site; and

b. Clearing, grading and drainage plans.

13. A critical area report may be supplemented by reports or studies previously prepared for and applicable to the development proposal site, subject to the five-year limit of validity of contents per subsection F of this section.

E. Modifications to Report Requirements. The Director may allow modifications to the report contents to be prepared under the following circumstances. The Director reserves the right to subsequently require such information. Permitted modifications shall be identified in the determination of complete application.

1. Prior to the preparation of a report, the Director has determined that some filing requirements do not apply to the proposal.

2. The applicant has consulted with and obtained approval from the Director, prior to or during preparation of a critical area report, to modify the required contents of the report where, in the judgment of a qualified professional and concurrence of the Director, more or less information is required to adequately address the potential critical area impacts and required mitigation.

3. The Director may limit the required geographic area of the critical area report if:

a. The applicant, with assistance from the City, cannot obtain permission to access properties adjacent to the project area, in which case the critical area size and characteristics beyond the project area may be estimated through aerial photography, visual interpretations, discussion with agencies or some other acceptable means; or mitigation.

b. The proposed activity will affect only a limited part of the subject site.

F. Existing Reports and Expiration.

1. Critical area reports shall be considered valid for up to five years. Thereafter, the Director shall determine whether a revision or additional assessment is necessary per subsection (F)(2) or (3) of this section, or consult a third party to make that determination per subsection G of this section. Supplemental critical area report(s) may be required to provide information and analysis to address changes to the project scope and potential impacts or to changes to applicable regulations that have been made subsequent to existing, valid critical area reports.

2. A critical area report prepared within the last five years may be incorporated into, supplement, or submitted in its entirety as the critical area report for a proposal; provided, that such previously prepared report or study is

applicable to the proposed location, use, activity or development, and the proposed land use activity and surrounding site conditions are substantially unchanged.

3. A qualified professional shall evaluate the previously prepared reports, the proposal, and the current environmental conditions associated with the site and submit a letter of validity, sufficiency, verification, or recommendation regarding all of the following:

- a. The provisions in subsection (F)(1) of this section are met; and
- b. The report, or used sections thereof, meets the requirements of this section and the reporting requirements for each specific critical area type; and
- c. A recommendation on the extent to which the previously prepared report(s) can be used and any supplemental information to be prepared and submitted to meet the requirements of this chapter. The recommendation can be to reject the previously prepared materials entirely.

G. Third Party Review of Critical Area Reports.

1. The purpose of third party review is to protect critical areas, maintain public safety, protect public health and property, and to ensure that the nature and extent of critical areas and any associated buffers are correctly determined, protected and restored. The City shall attempt to resolve any issues with the original author(s) or applicant before requiring third party review.

2. The Director shall state in writing the reasons for requiring the third party review. Third party review will be conducted by a qualified professional under contract with, or employed by, the City, at the applicant's expense, when the Director determines:

- a. The submission contains factual errors, omissions, faulty analytical procedures, or incomplete analysis; or
- b. Inconsistencies exist between the submitted materials and observable data, and/or accepted scientific or technical criteria; or
- c. Such services are necessary to demonstrate compliance with the standards and guidelines of this chapter; or
- d. Specialized expertise is required for adequate review of a proposal.

3. The third party review shall evaluate the validity and applicability of previous reports, if any, applicant's methodology, adequacy of data collection, the analysis and findings, and the effectiveness of any proposed mitigation, monitoring plans and guarantee measures or programs proposed by the applicant as sufficient to protect the critical areas and include any recommendations as appropriate.

4. The Director shall consider the third party review and recommendations and determine if the report and plans, with the recommendations, are sufficient to protect critical area, consistent with the requirements of this chapter. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.210 Mitigation —~~Preferred sequencing~~Sequencing and location.

When alterations and impacts to critical areas cannot be avoided, compensatory mitigation to replace a critical area or buffer and its functions may be permitted so long the critical area functions and values can be replaced. Compensatory mitigation is not allowed for critical aquifer recharge areas. Mitigation includes, but is not limited to, adjustments to required buffer sizes, best practices to minimize impacts, and critical area or buffer enhancement, restoration, or preservation plans. Mitigation actions may be implemented on or off site based on the preferred location identified in this section.

A. Mitigation Sequencing. Mitigation is to be provided in the following order~~of preference~~:

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

2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
4. Reducing or eliminating the impact over time by preservation and maintenance operations.
5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.

6. Monitoring the impact and taking appropriate corrective measures.

B. Location of Mitigation. The replacement of critical areas, buffers, and functions shall generally occur at or adjacent to the site on which a critical area has been or will be altered or impacted by an allowed use or activity, except when the applicant can demonstrate that off-site mitigation is ecologically preferable. Mitigation sequencing shall consider and/or perform mitigation actions in a priority order from avoidance to compensation. Compensatory mitigation actions shall generally be conducted within the same subdrainage basin and on the site of the alteration.

1. On-Site Mitigation. The replacement of critical areas, buffers, and functions shall be provided on site. Mitigation may be allowed off site only when it is determined by the Director that on-site mitigation is not scientifically feasible or practical due to physical features of the property, or where the affected site is identified as appropriate for off-site mitigation, pursuant to an off-site mitigation program. The burden of proof, based on a preponderance of the evidence, shall be on the applicant to demonstrate that mitigation cannot be provided on site.
2. Off-Site Mitigation. Off-site mitigation is allowed when there are no reasonable opportunities on site, on-site mitigation would require elimination of high-quality upland habitat, or off-site opportunities have a greater likelihood of providing equal or improved functions than the altered site. Off-site mitigation shall be provided in the same drainage basin as the permitted activity on property owned, secured, or controlled by the applicant where such mitigation is practical and beneficial to the critical area and associated resources.
3. Mitigation Bank. For mitigation of wetland impacts, a wetland mitigation bank is an alternative to on-site permittee-responsible mitigation; provided, that:
 - a. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands when:
 - i. The bank is certified under state rules;
 - ii. The City determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts; and
 - iii. The proposed use of credits is consistent with the terms and conditions of the certified bank instrument.
 - b. Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the certified bank instrument.
 - c. Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the certified bank instrument. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.
4. In-Lieu Fee. To aid in the implementation of off-site mitigation, the City may develop an in-lieu fee (ILF) program. This program shall be developed and approved through a public process and be consistent with federal rules, state policy on in-lieu fee mitigation and state water quality regulations. An approved ILF program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to an ILF program sponsor. The sponsor of an ILF program must be a nonprofit organization such as a local land trust, private conservation group, or government agency with demonstrated

competence in natural resource management. Credits from an approved ILF program may be used when the conditions below apply:

- a. The Director determines that it would provide environmentally appropriate compensation for the proposed impacts.
- b. The mitigation will occur on a site identified using the site selection and prioritization process in the approved in-lieu fee program instrument.
- c. The proposed use of credits is consistent with the terms and conditions of the approved in-lieu fee program instrument.
- d. Land acquisition and initial physical and biological improvements of the mitigation site must be completed within three years of the credit sale.
- e. Projects using in-lieu fee credits shall have debits associated with the proposed impacts calculated by the applicant's qualified professional wetland scientist using the method consistent with the credit assessment method specified in the approved instrument for the in-lieu fee program.
- f. Credits from an approved in-lieu fee program may be used to compensate for impacts located within the service area specified in the approved in-lieu fee instrument.

5. In-Kind Mitigation. In-kind mitigation, or in-kind compensation, is intended to replace a critical area whose characteristics and functions closely approximate those destroyed or degraded by a regulated activity.

6. Out-of-Kind Mitigation. Allows mitigation that will replace critical area, buffer and their functions, away from the site on which a critical area has been impacted, with a substitute critical area, buffer or function, whose characteristics do not closely approximate those adversely affected, destroyed or degraded by an allowable use or activity. Out-of-kind-mitigation shall be permitted only when it has been demonstrated, based on a preponderance of evidence and the Director concurs, that greater function and habitat value can be achieved than with in-kind mitigation. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.220 Mitigation plan – Requirements.

Mitigation shall be sufficient to maintain or compensate for the impacted functions and values of the critical area and to prevent risk from a hazard posed by a critical area. Mitigation shall not be implemented until after the Director has provided approval of a critical area report that includes a mitigation plan.

A. Mitigation Plan Standards. The following standards are the minimum requirements that a mitigation plan is to satisfy:

1. Adverse impacts to critical area functions and values shall be mitigated to achieve functionally equivalent or greater biologic functions.
2. Proposals which include less preferred and/or compensatory mitigation shall demonstrate that:
 - a. All feasible and reasonable measures have been taken to reduce impacts and losses to the critical area, or to avoid impacts where avoidance is required by this chapter;
 - b. The restored, created or enhanced critical area or buffer will be as viable and enduring as the critical area or buffer area it replaces;
 - c. In the case of wetlands and streams, no overall net loss will occur in wetland or stream functions and values. The mitigation shall be functionally equivalent to the altered wetland or stream in terms of hydrological, biological, physical, and chemical functions; and
 - d. When wetland, stream or habitat mitigation is permitted on site, or off site, by these regulations, the mitigation project shall occur near an adequate water supply (river, stream, ground water) with a hydrologic connection to the critical area to ensure a successful mitigation or restoration. A natural

hydrologic connection is preferential as compared to one which relies upon manmade features requiring routine maintenance.

3. Any agreed-upon mitigation plan shall be completed before initiation of other permitted activities, unless a phased or concurrent schedule that assures completion prior to occupancy has been approved by the Director.

B. When mitigation is required, the applicant shall submit a mitigation plan, pursuant to this section, as part of the critical area report for approval by the Director. The mitigation plan shall include:

1. A written report identifying environmental goals and objectives of the compensation proposed, to include:
 - a. A description of the anticipated impacts to the critical areas and the mitigating actions proposed and the purposes of the compensation measures, including the site selection criteria; identification of compensation goals; identification of resource functions; and dates for beginning and completion of site compensation construction activities. The goals and objectives shall be related to the functions and values of the impacted critical area;
 - b. A review of the best available science supporting the proposed mitigation and a description of the report author's experience to date in restoring or creating the type of critical area proposed;
 - c. An analysis of the likelihood of success of the mitigation plan;
- d. Written specifications and descriptions of the mitigation proposed, such as:
 - i. The proposed construction sequence, timing, and duration;
 - ii. Grading and excavation details;
 - iii. Erosion and sediment control features;
 - iv. A planting plan specifying plant species, quantities, locations, size, spacing, and density;
 - v. Measures to protect and maintain plants until established; and
 - vi. Detailed site diagrams, scaled cross-sectional drawings, topographic maps showing slope percentage and final grade elevations, and any other drawings appropriate to show construction techniques or anticipated final outcome.
2. The mitigation plan may include a habitat management plan, revegetation or replanting plan, and/or restoration plan.
3. Performance standards, pursuant to MTMC 16.15.230.
4. A maintenance and monitoring plan, pursuant to MTMC 16.15.240.
5. The mitigation plan shall also include a contingency plan to identify potential courses of action and any corrective measures to be taken if monitoring or evaluation indicates project performance standards are not being met.

C. Mitigation shall be completed immediately following disturbance, and prior to use or occupancy of the action or development. Construction of mitigation projects shall be timed to reduce impacts to existing fisheries, wildlife, and flora. On completion of construction, any approved mitigation project must be signed off by the applicant's qualified professional and approved by the Department. Signature will indicate that the construction has been completed as approved. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.230 Mitigation plans – Performance standards.

A. The mitigation plan shall include performance standards of measurable specific criteria for evaluating whether or not the goals and objectives of the mitigation project have been successfully attained and whether or not the requirements of this chapter have been met.

B. The mitigation plan shall include any additional specific performance standards that apply to critical area types, per this chapter.

C. A performance and maintenance guarantee shall be provided consistent with MTMC 16.15.340. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.240 Maintenance and monitoring plan.

A. A maintenance and monitoring plan shall be prepared and implemented by the applicant, pursuant to this section, to evaluate and assure the success of the required mitigation measures, to determine if the mitigation plan's goals and objectives are being met, and to determine necessary corrective actions. This plan shall be reviewed and approved by the Department prior to implementation.

B. In general, the maintenance and monitoring plan shall identify what monitoring data will be collected and how it will be collected, describe how the monitoring data will be evaluated to determine if the performance standards are being met, and identify corrective action and when implementation standards are met. The contents of the maintenance and monitoring plan shall include:

1. Appropriate, accepted, and unbiased qualitative or precise and accurate quantitative sampling methods by which to evaluate the success or failure of the project compared to performance standards approved by the City;
2. An outline of the quantitative sampling methods that include permanent photopoints installed at the completion of construction and maintained throughout the monitoring period and shall also include permanent transects, sampling points (e.g., plots or quadrants or water quality or quantity monitoring stations), and wildlife monitoring stations;
3. Clearly stipulated qualitative and quantitative sampling methods that are approved by the City or the qualified professional selected or approved by the City to review the monitoring plan before implementation by the project proponent;
4. Appropriate qualitative and/or quantitative performance standards that will be used to measure the success or failure of the mitigation. These will include, at a minimum, standards for plant survival and diversity, including structural diversity, the extent of wetland hydrology, hydric soils, and habitat types and requirements as appropriate; all proposed standards are subject to review and approval by the City or the qualified professional selected by the City to review the monitoring plan;
5. Monitoring plans shall include, at a minimum: preparation of an as-built (baseline) plan; an outline of the site monitoring and maintenance schedule to include periodic removal of noxious weeds and revegetation; semi-annual site inspection to collect and analyze data of the status of the mitigation measures implemented; preparation of annual monitoring reports following implementation; a contingency plan in the event that implementation of the mitigation plan is inadequate or fails;
6. Monitoring reports shall be submitted to the Department by December 1st of the year in which monitoring is conducted. The reports are to be prepared by a qualified professional and must contain all qualitative and quantitative monitoring data, photographs, and an evaluation of each of the applicable performance standards from each semi-annual monitoring evaluation. If performance standards are not being met, appropriate corrective or contingency measures must be identified and implemented to ensure that performance standards will be met;
7. Time Period. The monitoring period begins after an as-built report is submitted and approved by the City. Monitoring of the project mitigation shall be for a period necessary to establish that performance standards have been met, but not for less than five years. More stringent monitoring requirements may be required on a case-by-case basis for more complex mitigation plans; for example, if a scrub-shrub or forested vegetation

community is proposed, monitoring may be required for 10 years or more. The project mitigation plan shall include monitoring elements that ensure certainty of success for the project's natural resource values and functions. This will include data collection and annual reports, at a minimum. If the mitigation goals are not obtained within the initial five-year period, the applicant remains responsible for restoration of the natural resource values and functions until the mitigation goals agreed to in the mitigation plan are achieved;

8. The plan shall include a provision for extension of the monitoring period beyond the minimum time frame if performance standards are not being met at the end of the initial monitoring period; and provision for additional financial securities or guarantees to ensure that any additional monitoring and contingencies are completed to ensure the success of the mitigation.

C. A performance and maintenance guarantee shall be provided consistent with MTMC 16.15.340. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.250 Notice on title.

A. The purpose of recording a notice of critical area presence on the title of an affected property is to inform subsequent purchasers of their existence on said property. The notice shall be approved by the Director for compliance with this section. The notice does not vest any critical areas. The notice shall run with the land.

B. A notice on title is required whenever the presence of a critical area or buffer has been identified and no further evaluation has been made, a critical area or buffer has been delineated with or without further action on the property, or an application has been made for a site development, subdivision, or construction permit for the property containing a critical area or buffer.

C. The location of the critical areas and those contiguous critical areas and buffers, listed below, that total 200 or more square feet, shall be delineated and protected, except as otherwise indicated:

1. All wetlands and buffers;
2. Any stream water type S, F, Np or Ns, regardless of the square footage;
3. All habitat conservation areas;
4. All severe landslide hazard areas and buffers; and
5. All other lands to be protected from alterations as conditioned by project approval.

6. Open spaces or corridors connecting wildlife habitats.

D. Form and Content of Notice.

1. The notice form and required content shall be provided by the Department.
2. The notice shall state the presence of the critical area or buffer on the property, that this chapter and any amendments thereto apply to the property, and that there may be one or more critical areas or buffers.
3. Any site-specific modifications, restrictions to development, and limitations on actions in or affecting the critical areas shall be clearly noted on the notice and plat or site plan.
4. The recorded notice shall include a map to indicate the general location and type of critical areas.
5. In the case of subdivisions or development, an easement or tract shall be created per subsection E of this section and shown in a format approved by the Department on the face of the drawing to be recorded, pursuant to subsection F of this section.

E. Critical Area Tract, Protection Area Easement, or Dedication. A critical area tract, protection area easement, or dedication may be used to protect a critical area and/or buffer from future alteration.

1. A critical area tract shall be created as part of a site development or subdivision action. The subdivision drawing or project site plan shall clearly depict the critical area tract to include all of the subject critical area, any required buffer, and any additional lands included voluntarily by the developer. The applicant may establish a separate critical area tract for each critical area type.
2. A protection easement shall be created on a property where no subdivision or site plan is proposed, but a critical area report has been prepared and critical areas identified or delineated.
3. Dedication of Critical Area. The City may require a critical area tract be dedicated to the City, held in an undivided interest by each owner of a building lot within the development with the ownership interest passing with the ownership of the lot, or held by an incorporated homeowner's association or other legal entity which ensures the ownership, maintenance, and protection of the tract (such as a land conservation trust).
4. When the critical area has already been delineated, it shall be shown on the recording document with the legal description of the critical area.

F. Recording the Notice, Tract, Easement, or Dedication.

1. The property owner shall record the notice, easement, or tract, at their expense, with the Snohomish County Auditor's Office Recording Division.
2. The applicant shall submit proof that the notice has been recorded on title before the Director approves any site development or construction permit, or at or before the recording of any type of subdivisions or phased development project.

G. Extinguishment of Notice. The titleholder has the right to challenge a notice and to have it extinguished if it can be documented that the presence of critical area no longer applies. The titleholder shall apply for a critical area preliminary assessment, pursuant to MTMC 16.15.160, and submit a critical area report, pursuant to MTMC 16.15.200, for review and approval by the Director per MTMC 16.15.120, before the notice on title can be extinguished. The extinguishment shall be recorded per subsection F of this section. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.260 Signs and fencing.

Short- and long-term protection of critical areas is necessary to minimize damage to critical areas, to ensure the success of restoration or mitigation and to protect their functions and values. The following signage and fencing provisions may be modified by the Director as necessary to ensure protection of sensitive features or wildlife needs.

A. Signage. The boundary at the outer edge of the critical area or buffer shall be identified with temporary signs prior to any site alteration. Such temporary signs shall be replaced with permanent signs prior to occupancy or use of the site.

1. Temporary Markers. Prior to the commencement of permitted activities, pursuant to an approved permit or authorization, the perimeter of the critical area or buffer and the limits of those areas to be disturbed shall be marked in the field in such a way as to ensure that no unauthorized intrusion will occur and is subject to inspection by the City. The location and quantity of signs shall be determined by the Director. Temporary markers shall be maintained throughout construction and not be removed until permanent signs, if required, are in place.
2. Permanent Signs. When a permanent sign is required as a condition of any permit or authorization issued, pursuant to this chapter, the applicant shall install permanent signs along the boundary of a critical area or buffer as follows:
 - a. Signs shall be made of an enamel-coated metal face and attached to a metal post, or another nontreated material of equal durability.
 - b. Signs must be posted at an interval of one per lot or every 100 feet, or at the discretion of the Director.
 - c. The sign shall be worded as follows or with alternative or additional language approved by the Director. Graphics ~~are similar to what is shown below is~~ encouraged and may be required.

Protected (insert name of critical area type)

Do Not Disturb

Contact the City of Mountlake Terrace

Regarding Uses and Restriction



d. Signs must be maintained by the property owner in perpetuity.

B. Fencing.

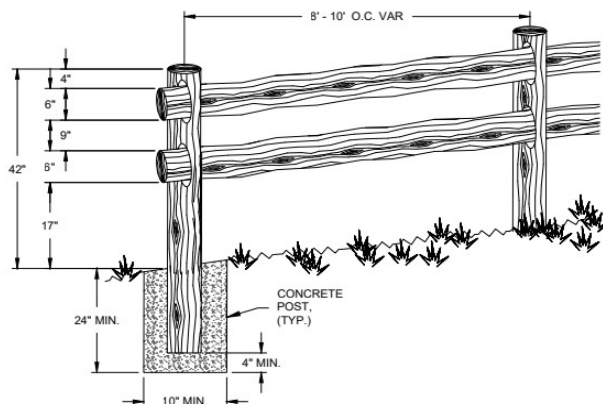
1. Fencing of critical areas is required when called for in a critical area report or mitigation plan, when any of the circumstances described in subsection (B)(3) of this section apply, or when the Director determines that such fencing is necessary to protect the functions and/or values of a critical area. Fencing may be temporary or permanent or both. The Director may also waive this requirement.

2. Temporary fencing shall be installed to protect critical areas during construction activities or intermittent activities that may impact such critical areas. Temporary fencing shall be appropriate for the location and critical area at the discretion of the Director.

3. Permanent fencing shall be installed at the outer edge of the critical areas in the following circumstances:

- a. As part of any development proposal affecting a critical area or buffer;
- b. As part of a use or activity in a park where the adjacent existing or proposed use is active recreation and the Director determines that such fencing is necessary to protect the functions of the critical area;
- c. When buffer averaging is employed as part of a development proposal;
- d. When buffer reductions are employed as part of a development proposal; or
- e. As part of a proposal, whether or not a permit is required, on any parcel that affects the critical area and buffer.

4. The location, materials, height, and type of fencing shall be consistent with standard detail below. ~~Alternatives design the associated critical area report, and mitigation plan may be approved, or as determined by the Director.~~



NOTES:

1. POSTS ARE TO BE 6 INCH DIAMETER ROUGH CEDAR.
2. RAILS ARE TO BE SPLIT CEDAR, 3"x4"x4" TRIANGLE SIDES MINIMUM.

5. Fencing shall not interfere with species migration, including fish runs, and shall be constructed in a manner that minimizes habitat impacts. Breaks in permanent fencing may be allowed for access to permitted buffer uses.

6. Fences must be maintained by the property owner in perpetuity. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.270 Protective covenants.

A. Long-term protection of a regulated critical area and its associated buffer shall be required, when applicable, as a condition of an approved permit or authorization, consistent with MTMC 16.15.250, Notice on title. The means of protection can be provided for in one of the following ways:

1. Separate critical areas tract;
2. Execution of an easement;
3. Dedication to a conservation organization or land trust; or
4. Preserved through a comparable permanent protective mechanism acceptable to the City such as a dedication.

B. The location and limitations associated with the critical area and its buffer shall be shown on a document prepared for that purpose, on the face of the deed or the face of the plat applicable to the property. The City shall review and find the protection document acceptable, prior to the applicant recording it on the property title, pursuant to MTMC 16.15.250. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.310 Alteration of critical areas.

A. Purpose and Applicability.

1. Critical areas shall, in general, be maintained in their natural state or current legally established condition, including undisturbed, native vegetation to maintain the functions, values, resources, and public health and safety for which they are protected.
2. An “alteration of a critical area” means any human induced change to, addition to, or modification of an existing condition, structure, or use of a critical area or its buffer that changes the existing character of the critical area.
3. Alteration of critical areas, including their established buffers, may only be permitted subject to the criteria and standards in this chapter, and compliance with any federal and/or state permits required.
4. Unless otherwise provided in this chapter, if alteration of the critical area is unavoidable, all adverse impacts to or from critical areas and buffers resulting from a development proposal or alteration shall be mitigated in accordance with an approved critical area report and mitigation plan per MTMC 16.15.200 and 16.15.210, so the result is no overall net loss of critical area functions and values, and no increased risk of hazards.

B. Review Criteria. Any alteration to a critical area, unless otherwise provided for in this chapter, shall be evaluated based on the proposal’s ability to comply with the following criteria:

1. The proposal is consistent with the alteration provisions for the critical area type per 16.15.400 through 16.15.450;
2. The proposal avoids impact to the critical area altogether. Where this is not possible, the proposal minimizes the impact on critical areas in accordance with MTMC 16.15.210;
3. The proposal does not pose an unreasonable threat to the public health, safety, or welfare on or off the development proposal site;
4. The proposal protects the critical area functions and values consistent with the best available science and results in no net loss of critical area functions and values;

5. A restoration plan has been prepared, pursuant to MTMC 16.15.330;
6. The mitigation plan has been amended, and/or the restoration plan prepared consistent with any conditions, and approved by the City prior to issuance of any construction permits. Construction techniques shall be approved by the City prior to any site work.

C. Decision. Pursuant to MTMC 16.15.120(D), the proposal shall be reviewed and approved, approved with conditions, or denied subject to a determination by the Director the following have been met:

1. The submittal for alteration is found responsive to the criteria in subsection B of this section.
2. Any other filing requirements, as set forth by the Director, are submitted and found satisfactory. The submittal shall include an affidavit by the applicant, which declares whether the applicant has knowledge of any illegal alteration to any or all wetlands on the proposed site and whether the applicant previously had been found in violation of this chapter. If the applicant has been found previously in violation, the applicant shall declare whether such violation has been corrected to the satisfaction of the jurisdiction.
3. Notice on title shall apply, pursuant to MTMC 16.15.250. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.320 Unauthorized alterations of critical areas.

A. When a critical area or its buffer has been altered in violation of this chapter, the City may issue a stop work order and order restoration of the critical area.

B. All development work shall remain stopped until the requirements of MTMC 16.15.310 and 16.15.330 have been satisfied and the critical area restored.

C. Unauthorized alteration of a critical area shall be considered a violation of this chapter and may be subject to the provisions of MTMC 16.15.380. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.330 Restoration plan.

A restoration plan shall be prepared consistent with the requirements, criteria, and performance standards of this section.

A. A restoration plan is required when needed to reestablish the critical area's functional characteristics and processes that have been lost by project-induced alterations to critical areas, or activities or catastrophic events have occurred within an area so that it no longer meets the definition of such critical area.

B. A restoration plan shall be prepared by a qualified professional using the best available science and describe how the actions proposed meet the minimum requirements described in subsection E of this section. The Director may require third party review per MTMC 16.15.200(G).

C. Restoration, and any other required measures, are at the owner's or other responsible party's expense to remediate the impacts of the violation of the provisions of this chapter. All ongoing development work shall stop and the critical area shall be restored.

D. At the Director's discretion, and based on the severity of the alterations, the submittal, review, and approval process of the restoration plans required for remediation of violations of this chapter shall be determined by the Director and may be elevated to a site permit application process, including fees.

E. Minimum Performance Standards for Restoration.

1. For alterations to critical aquifer recharge areas, wetlands, streams, and fish and wildlife habitat conservation areas, the following minimum performance standards shall be met for restoration; provided, that if the violator can demonstrate that greater functional and habitat values can be obtained, these standards may be modified:

- a. The previolation function and values of the affected critical areas and buffers shall be restored, including water quality and habitat functions;

- b. The previolation soil types and configuration shall be replicated;
 - c. The critical area and buffers shall be replanted with native vegetation that replicates the vegetation historically, or previolation, found on the site in species types, sizes, and densities. The previolation functions and values should be replicated at the location of the alteration; and
 - d. Information demonstrating compliance with the requirements in MTMC 16.15.220 and the applicable mitigation sections for the affected type(s) of critical area(s) and their buffer(s) shall be submitted to the Director with the complete, applicable permit application.
2. For alterations to flood hazard and geologic hazard areas, the following minimum performance standards shall be met for the restoration of a critical area; provided, that if the violator can demonstrate that greater safety can be obtained, these standards may be modified:
- a. The hazard shall be reduced to a level equal to or less than the previolation hazard;
 - b. Any risk of personal injury resulting from the alteration shall be eliminated or minimized; and
 - c. The hazard area and buffers shall be replanted with native vegetation sufficient to minimize the hazard.

F. Site Investigations. The Director is authorized to make site inspections and take such actions as are necessary to enforce this chapter. The Director shall present proper credentials and make a reasonable effort to contact any property owner before entering onto private property. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.340 Guarantees to ensure mitigation, maintenance, and monitoring.

A. If the development proposal is subject to mitigation, the applicant shall post a mitigation guarantee or other security in a form and amount deemed acceptable by the City to ensure mitigation is fully functional.

B. When mitigation required for a development proposal is not completed prior to final permit approval, such as final plat approval or final building inspection, the applicant shall be required to post a performance guarantee, bond or other security in a form and amount deemed acceptable by the Director.

C. The guarantee shall be in the amount of 150 percent of the estimated cost of the uncompleted actions or the estimated cost of restoring the functions and values of the critical area that are at risk, whichever is greater. The amount of the performance guarantee shall include a reasonable allocation for inflation based on the length of anticipated delay and the provisions of subsection E of this section.

D. The guarantee shall be in the form of a surety bond, performance bond, and/or maintenance bond from an acceptable financial institution, or other acceptable form of warranty as permitted consistent with Chapter 15.35 MTMC, Performance Guarantees and Warranties.

E. Guarantees or other security authorized by this section shall remain in effect until the Director determines, in writing, that the standards bonded for have been met. Guarantees or other security shall be held by the City for a minimum of five years to ensure that the required mitigation has been fully implemented and demonstrated to function, and may be held for longer periods when necessary to achieve these goals. The Director may agree to reduce the guarantee in proportion to work successfully completed over the period of the guarantee.

F. Depletion, failure, or collection of guarantee funds shall not discharge the obligation of an applicant or violator to complete required mitigation, maintenance, monitoring, or restoration.

G. Public development proposals shall be relieved from having to comply with the guaranteeing requirements of this section if public funds have previously been committed for mitigation, maintenance, monitoring, or restoration.

H. Any failure to satisfy critical area requirements established by law or condition including, but not limited to, the failure to provide a monitoring report within 30 days after it is due or comply with other provisions of an approved mitigation plan shall constitute a default, and the City may demand payment of any financial guarantees or require other action authorized under this chapter or any other law. Any funds recovered, pursuant to this section, shall be used to complete the required mitigation. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.350 Variances.

A. ~~Requests for relief from the dimensional or performance standards of this chapter shall require a critical areas variance provided the Hearing Examiner finds that all criteria listed in B have been met. Variances from the standards of this chapter may be granted when the strict application of the provisions of this chapter would deprive the applicant all reasonable economic uses and privileges commonly enjoyed by other properties in similar circumstances. A variance may only be granted by the Hearing Examiner.~~

B. Criteria. The variance may be granted only if the applicant demonstrates that the requested action is consistent with all of the following criteria:

~~1. There are unique physical conditions or circumstances peculiar to the land, the lot, or something inherent in the land, and that are not applicable to other lands in the same district; There are special circumstances applicable to the subject property or to the intended use such as shape, topography, location, or surroundings that do not apply generally to surrounding properties or that make it impossible to redesign the project to preclude the need for a variance;~~

2. The special conditions and circumstances are not a result of the actions of the applicant, owner, or previous owner;

~~3. The applicant has avoided impacts and provided mitigation to the maximum practical extent;~~

~~34. The variance is the minimum necessary to accommodate the proposed activity (such as building footprint and access); The critical area buffer reduction proposed through the variance is the minimum necessary to accommodate the permitted use;~~

~~45. The granting of the variance would preserve the functions or values of the critical areas; Granting the variance will not be materially detrimental to the public welfare or injurious to the property or improvement;~~

~~56. The proposed variance would not adversely affect or be materially detrimental to the public welfare or injurious to the property or improvements to properties in the vicinity of the subject property; No other practicable or reasonable alternative exists;~~

~~67. Adverse impacts to critical areas resulting from the proposal are minimized;~~

~~78. The decision to grant the variance includes the best available science and gives special consideration to conservation or protection measures necessary to preserve or enhance anadromous fish habitat;~~

~~89. The variance is consistent with the additional variance requirements/criteria for the specific critical area impacted, pursuant to MTMC 16.15.400 through 16.15.450; and~~

~~910. The granting of the variance is consistent with the general purpose and intent of the City's Comprehensive Plan and adopted development regulations.~~

C. Process and Procedure.

1. A formal preapplication conference is required per MTMC 16.15.150.

2. An applicant submits a complete application, including all filing requirements and the appropriate fee. The burden of proof shall be on the applicant to bring forth evidence in support of the application and upon which any decision has to be made on the application. The applicant shall include proof of all following criteria:

a. The applicant has avoided impacts and provided mitigation, in accordance with this chapter, to the maximum practical extent;

b. The variance will not adversely impact receiving water quality or quantity;

c. The variance will not adversely impact any functional attribute of the critical area;

d. The variance will not jeopardize the continued existence of species listed by the federal government or the state as endangered, threatened, sensitive, or documented priority species or priority habitats; and

a-c. The variance is based on the criteria and standards referenced in this chapter.

3. The land use project procedures time line set forth in MTMC 18.05.075 applies, except as otherwise stated in this section.

4. The Director shall review the application and make a determination of completeness and provide public notice, pursuant to MTMC 16.15.140.

5. The Director shall evaluate the proposal's consistency with the criteria and forward a written recommendation to the Hearing Examiner to approve, with or without conditions and any time limits for application or completion of work, or to deny the variance request.

6. A public hearing is held before the Hearing Examiner pursuant to MTMC 18.05.127, Notice of public hearing, and MTMC 18.05.180, Procedures for public hearings.

D. Decision.

1. The Hearing Examiner shall make written findings that the request meets or fails to meet the variance criteria and issue a decision to approve, approve with conditions, or deny the variance, pursuant to MTMC 18.05.190.

2. A final decision shall be rendered within 120 days of the determination of completeness per MTMC 18.05.140.

3. Time Limit. Permits necessary to establish or construct the approved variance shall be applied for and the work completed within one year of the effective date of the Hearing Examiner's decision, unless a different time limit is specified by the Hearing Examiner. Failure to meet the established time limit shall void the variance, unless a time extension is obtained pursuant to MTMC 18.05.165, including a demonstration that the conditions of the site and critical areas have not changed since the approval decision was issued. Knowledge of the expiration date is the responsibility of the applicant.

E. Appeal. An appeal of the final decision shall be consistent with the appeal process, pursuant to MTMC 16.15.385. (Ord. 2811 § 10, 2022; Ord. 2731 § 2 (Exh. A), 2018).

16.15.360 Reasonable use exceptions.

A. Applicability. A reasonable use exception is required when strict adherence to the provisions of this chapter would deny all reasonable use of the subject property as a whole, due to the property's size, topography, or location relative to the critical area and any associated buffer.

1. A reasonable use exception shall only be granted if no other reasonable alternative method of development is provided, subject to review and criteria under this section.

2. The fact that property may be utilized more profitably than allowed based on strict interpretation of this title shall not be an element of consideration in any review of a reasonable use request. Reasonable use exceptions shall not be permitted for the subdivision of land.

B. Application and Filing Requirements.

1. A complete request for reasonable use exception application shall be submitted to include the following information:

a. A land analysis of the surrounding area that evaluates the conditions within a quarter-mile vicinity.

b. A description of the proposed development site, including the entire critical area and the setbacks or buffers as required under this title, whether the critical area is wholly contained on the development site or not;

b.c. An analysis of the impact that the amount of development proposed, in accordance with all applicable development regulations, would have on the critical area;

e.d. An analysis of whether any other reasonable use with less adverse impact on the critical area and buffer area, as required, is possible;

e.e. A design of the project as proposed as a reasonable use so that the development will have the least practicable adverse impact on the critical area;

e.f. A description and analysis of the modification requested of the minimum requirements of this chapter to accommodate the proposed development;

f.g. Such other information as may be required by the Director as reasonable and necessary to evaluate the reasonable use respective to the proposed development;

g.h. The applicant shall address all criteria, pursuant to subsection C or D of this section, as applicable;

h.i. Any additional materials, studies or reports or previously prepared or issued approvals related to the proposal such as a critical area identification form; critical area report, including mitigation plan, if necessary; and any other related project documents, such as permit applications to other agencies, special studies, and environmental documents prepared pursuant to the State Environmental Policy Act.

2. Burden of Proof. The burden of proof is on the applicant to submit sufficient evidence and information in support of the request on which the decision is to be made.

C. Criteria for Public Agencies and Utilities Reasonable Use Exceptions. If strict application of this chapter would unreasonably prohibit the provision of a public service by a public agency or public utility development proposal, the public entity may be granted an exception subject to meeting all of the following criteria:

1. The application of the critical areas regulations would unreasonably restrict the ability to provide utility services to the public;
2. There is no other practical alternative to the proposed development with less impact on the critical areas;
3. The proposal does not pose an unreasonable threat to the public health or safety on or off the development proposal site and will not be materially detrimental to the property or improvements in the vicinity;
4. The proposal attempts to protect and mitigate impacts to the existing critical area functions and value, consistent with MTMC 16.15.310, Alteration of critical areas, and best available science to the fullest extent possible;
5. Any impacts or alterations permitted to the critical area are the minimum necessary and will be mitigated consistent with relevant mitigation standards in this chapter;
6. The proposal attempts to protect and mitigate, consistent with MTMC 16.15.210 and best available science, the existing critical area functions; and
7. The proposal is consistent with other applicable regulations and standards.

D. Criteria for Private Development and Private Permit Application Reasonable Use Exceptions. The property owner may apply for and be granted a reasonable use exception subject to meeting all of the following criteria:

1. The application of the critical area regulations would deny all reasonable economic use of the property;

2. No other reasonable economic use of the property has less impact on the critical area or buffer;
3. The inability of the applicant to derive reasonable economic use of the property is not the result of a self-created hardship, due to the applicant's actions or that of a previous property owner, after the effective date of this chapter or its predecessor (Ordinance No. 2370), or other actions thereby creating an undevelopable condition;
4. The proposed encroachment into the critical area and/or buffer is the minimum necessary to allow for reasonable economic use of the property and no feasible and reasonable on-site alternative is possible to the activities proposed, considering possible changes in site layout, reductions in density and similar factors, with fewer adverse impacts;
5. The proposed reasonable use will result in minimal impact and/or alteration of the critical areas and/or buffers;
6. Any impacts or alterations permitted to the critical area are mitigated consistent with relevant mitigation standards in this chapter;
7. The proposal attempts to protect and mitigate, consistent with MTMC 16.15.210 and best available science, the existing critical area functions and values to the fullest extent possible;
8. The proposal does not create a health or safety hazard on or off the proposal site or be materially detrimental to the property or improvements in the vicinity; and
9. The proposal is consistent with other applicable regulations and standards.

E. Review and Approval Process.

1. A formal preapplication conference is required, per MTMC 16.15.150.
2. The applicant shall submit an application to include all filing requirements per subsection B of this section and applicable fee.
3. The land use project procedures time line set forth in MTMC 18.05.075 applies, except if otherwise stated in this chapter.
4. The Director shall review the application for completeness, pursuant to meeting all the filing requirements of this section. The Director shall review the complete application for:
 - a. Consistency with criteria in subsection C or D of this section, as applicable.
 - b. Adequacy of any reports, studies or other materials submitted.
5. A notice of application shall be issued, pursuant to MTMC 16.15.140.
6. The Director shall evaluate the proposal's consistency with the criteria and forward a written recommendation to the Hearing Examiner to approve or deny the ~~variance~~ request. The recommendation may include conditions, as are necessary to ensure adequate protection of critical areas from adverse impacts and to ensure conformity with this chapter, including the preparation and implementation of a mitigation and monitoring plan consistent with this chapter, and any time limits for application or completion of work.
7. The Hearing Examiner shall hold a public hearing and provide public notice, pursuant to Chapter 18.05 MTMC.
8. A final decision shall be rendered within 120 days of the determination of completeness, per MTMC 18.05.140.

F. Decision.

1. The Hearing Examiner shall make written findings that the request meets, or fails to meet, the criteria for a reasonable use exception, pursuant to MTMC 18.05.185, that the proposed mitigation is sufficient to protect the critical area, and that strict application of the standards in this chapter would deny all reasonable use of the property.
2. The Hearing Examiner may impose any conditions he or she feels necessary, to ensure that the criteria are met and any impacts adequately mitigated to ensure no net loss to critical area functions and values, and set time limits for making application and completing work.
3. Approval of a reasonable use exception shall not eliminate the need for any other permits or approvals otherwise required by applicable city codes.

G. Time Limits.

1. Any permits necessary to establish or construct the approved reasonable use shall be applied for within one year of the effective date of the Hearing Examiner's decision, unless a different time is approved or required.
2. The approval is automatically null and void if the necessary permit applications to establish the use are not received within the specified time, unless a time extension is obtained pursuant to MTMC 18.05.165, including a demonstration that the conditions of the site and critical areas have not changed since the approval decision was issued. Knowledge of the expiration date is the responsibility of the applicant.

H. Appeal. An appeal of the final decision shall be consistent with the appeal process, pursuant to MTMC 16.15.385. (Ord. 2811 § 11, 2022; Ord. 2731 § 2 (Exh. A), 2018).

16.15.380 Enforcement and penalties.

A. Any responsible party violating any of the provisions of this chapter may be subject to enforcement procedures and penalties of this section and any applicable procedures and penalties, per Chapter 1.15 MTMC, Code Enforcement. Penalties are cumulative. Any developer/owner who violates the provisions of this chapter, or an approved plan, shall incur a civil penalty in the amount of \$500.00 per day from the date set for correction, until the violation is corrected.

B. Enforcement. Enforcement shall be pursuant to Chapter 1.15 MTMC. When it is determined that a violation has occurred or is occurring, the City may issue notices of civil violation, and criminal violation, to the person responsible for the violation, per Chapter 1.15 MTMC.

C. Additional Penalties. The penalties of this section are in addition to, and not in lieu of, any other applicable penalties set forth in this chapter, Chapter 1.15, 16.20 or 19.140 MTMC.

1. A square footage cost of \$3.00 per square foot of impacted critical area buffer; and
2. A square footage cost of \$15.00 per square foot of impacted critical area; and
3. A per tree penalty, in the amount of \$1,000 per nonsignificant tree and \$3,000 per significant tree, for each tree cleared, cut, damaged, or removed from a critical area or critical area buffer in violation of the provisions of this chapter. Each tree is a separate violation, subject to separate penalties; and
4. Restoration of impacts to critical areas is required, pursuant to MTMC 16.15.115 and 16.15.330. (Ord. 2805 §§ 4, 7 (Exh. B), 2022; Ord. 2731 § 2 (Exh. A), 2018).

16.15.385 Appeals of critical area decisions.

A. Administrative interpretations and administrative approvals may be appealed, by the applicant or any party of record, to the Hearing Examiner, pursuant to Chapter 2.120 MTMC.

1. Appeals shall be written and shall state the following:
 - a. The decision being appealed, the name of the project applicant and the date of the decision.

- b. The name and address of the person appealing, and his or her interest in the matter.
- c. The reasons why the person appealing believes the decision to be in error under the provisions of this chapter.

2. Filing the Appeal. The person appealing shall file the appeal and applicable fee with the Director within 14 calendar days after the date of the decision being appealed.

3. Standards. In deciding the appeal, the Hearing Examiner shall determine whether the critical area decision, pursuant to the appeal, was in error, pursuant to the provisions of this chapter.

B. Decisions by the Hearing Examiner may be appealed, by the applicant or any party of record, pursuant to the judicial appeal process per Chapter 2.120 MTMC and MTMC 18.05.260. (Ord. 2811 § 12, 2022; Ord. 2731 § 2 (Exh. A), 2018).

16.15.390 Fees.

A. Fees for critical area review and processing of applications and other services provided by the city, pursuant to this chapter, apply per the City's adopted fee schedule.

B. The applicant shall be responsible for all costs associated with the initiation, preparation, submission, and expense of all required reports, assessments, studies, plans, reconnaissance, third party review by qualified professionals and any other work prepared in support of or necessary to review and process the application and install, maintain, and monitor critical area work.

C. Performance and maintenance warranties may be required for restoration, mitigation, and monitoring activities. These are at the sole expense of the applicant. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.400 Wetlands.

A. Wetland Designations.

1. Wetlands are those areas designated in accordance with the approved federal delineation manual and applicable regional supplements as set forth in WAC 173-22-035, consistent with the definition of "wetland" per MTMC 16.15.500. All areas within the City meeting the wetland designation criteria, regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of this chapter.

2. Wetland delineations are valid for five years, subject to MTMC 16.15.200(F).

B. Wetland Classification. Wetland shall be rated according to the Washington State Wetlands Rating System for Western Washington: 2014 Update, [Version 2](#) (Department of Ecology Publication No. ~~23-06-00914-06-029~~, or as revised and approved by Ecology), which contains the definitions and methods for determining whether the criteria below are met. Wetland rating categories shall not be altered to recognize illegal modifications made by the applicant or with the applicant's knowledge. Categories may be modified in accordance with permitted activities.

1. "Category I wetlands" are those wetlands which meet any one of the following criteria:

- a. Documented habitat for federal or state listed "endangered" or "threatened" species of plant, animal or fish within the wetland; or
- b. High quality native wetland communities listed in, or which qualify for inclusion in, Washington Natural Heritage Program maintained by the state Department of Natural Resources; or
- c. Wetlands that are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or
- d. Wetlands of local significance, as now or hereafter designated by the City of Mountlake Terrace, pursuant to criteria in the Washington State Wetland Rating System for Western Washington; or

e. Wetlands that provide a high level of function with a score of 23 points or more based on the wetland rating system.

2. “Category II wetlands” are those wetlands which are not Category I wetlands and which meet any one of the following criteria:

a. A documented habitat for federal or state listed “candidate” or “sensitive” species of plant, animal or fish species within the wetland; or

b. Wetlands that contain “priority” species or habitats documented by the Washington Department of Wildlife Priority Habitat and Species program; or

c. Wetlands with significant functions, as determined by the required wetland report, which may not be adequately replicated through creation or restoration; or

d. Wetlands with a moderately high level of functions scoring between 20 and 22 points; or

e. Wetlands of local significance, as now or hereafter designated by the City of Mountlake Terrace.

3. “Category III wetlands” are those wetlands that do not satisfy Category I, II or IV criteria, with a moderate level of functions scoring between 16 and 19 points, have generally been disturbed in some ways, and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

4. “Category IV wetlands” are those wetlands which have the lowest levels of function with scores below 16 points and are often heavily disturbed. These are wetlands that should be able to be replaced or in some cases improved.

5. “Artificially created wetlands” are wetlands as defined in MTMC 16.15.500. Such wetlands, except for those created as mitigation or previously modified for approved land use activities, are excluded from regulation under this section; provided, that their purposeful creation is demonstrated to the Department through documentation, photographs, statements and/or other evidence.

C. Mapping. The approximate location and extent of wetlands are shown on the adopted critical areas maps, pursuant to MTMC 16.15.080. The exact location of a wetland’s boundary and classification shall be determined through field investigation by a qualified professional applying the applicable manuals adopted by this chapter.

D. Allowed Activities and Uses in Wetlands and Wetland Buffers.

1. Activities that are regulated in critical areas, pursuant to MTMC 16.15.090, apply to wetlands and wetland buffers.

2. In general, activities and uses shall be prohibited in wetlands and wetland buffers, except as otherwise provided for in this subsection, and in subsection (D)(6) of this section. When applicable, exempt activities per MTMC 16.15.100, emergencies per MTMC 16.15.110, variances per MTMC 16.15.350, and reasonable use exceptions per MTMC 16.15.360 are permitted.

3. Category I Wetlands. Activities and uses shall be prohibited from Category I.

4. Category II and III Wetlands. Activities and uses proposed in Category II and III wetlands are subject to the following standards together with any other applicable standards:

a. Water-dependent activities may be allowed where there are no practicable alternatives that would have a less adverse impact on the wetland, its buffers, and other critical areas.

b. Where non-water-dependent activities are proposed, it shall be presumed that alternative locations are available, and activities and uses shall be prohibited, unless the applicant demonstrates that:

- i. The basic project purpose cannot reasonably be accomplished and successfully avoid, or result in less adverse impact on, a wetland on another site or sites in the general region; and
 - ii. All alternative designs of the project as proposed that would avoid or result in less of an adverse impact on a wetland or its buffer, such as a reduction in the size, scope, configuration, or density of the project, are not feasible.
 - c. Full compensation for the loss of acreage and functions and values of wetland and buffers due to unavoidable impacts shall be provided in compliance with the mitigation performance standards and requirements of this chapter.
5. Category IV Wetlands. Activities and uses that result in unavoidable and necessary impacts may be permitted in Category IV wetlands and associated buffers in accordance with an approved critical area report per MTMC 16.15.200, and with MTMC 16.15.210 through 16.15.240, as applicable, and only if the proposed activity is the only reasonable alternative that will accomplish the applicant's objectives.
6. Exemptions and Allowed Activities – Wetlands. The activities listed below are allowed in wetlands and wetland buffers in addition to those activities listed in and consistent with the provisions in the MTMC 16.15.100 and 16.15.110. These activities do not require a critical area report, except where such activities result in a loss to the functions and values of a wetland or wetland buffer. Additional exceptions may be granted by variance or reasonable exception use pursuant to MTMC 16.15.350 or 16.15.360.
- a. Conservation or enhancement of a wetland, or preservation of soil, water, vegetation, fish and other wildlife, that does not entail changing the structure or functions of the existing wetland, including removal of noxious weeds or invasive species pursuant to MTMC 16.15.115.
 - b. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops and provided the harvesting does not require tilling of soil, planting of crops, chemical applications, or alteration of the wetland by changing existing topography, water conditions, or water sources.
 - c. Drilling for utilities under a wetland; provided, that the drilling does not interrupt the ground water connection to the wetland or percolation of surface water down through the soil column. Specific studies by a hydrologist are necessary to determine whether the ground water connection to the wetland or percolation of surface water down through the soil column could be disturbed.
 - d. Allowed uses in wetland buffers are pursuant to MTMC 16.15.400(F)(2).
7. Subdivisions. The subdivision and/or short subdivision of land that contains wetlands and associated buffers are subject to the following:
- a. Land that is located wholly within a wetland or its buffer may not be further subdivided; and
 - b. Land that is located partially within a wetland or its buffer may be subdivided; provided, that an accessible and contiguous portion of each new lot is located outside of the wetland and its buffer; and the lot can meet the minimum size requirements as provided for and allowed in MTMC Titles 17 and 19.

E. Critical Area Report Requirements – Wetlands.

1. Wetland boundaries must be staked and flagged in the field by a qualified consultant employing the federal methodology. Field flagging must be distinguishable from other survey flagging on the site. The field flagging must be accompanied by a wetland delineation report.
2. Wetland critical area reports shall be prepared by a qualified professional. Critical area reports shall be consistent with MTMC 16.15.200 and this section. The area covered by the report shall include:
 - a. The project area of the proposed activity;
 - b. All wetlands and applicable buffers within 200 feet of the project area; and

c. All shoreline areas, water features, floodplains, and other critical areas per City inventory map(s) per MTMC 16.15.080, and as designated on a National Wetland Inventory Map (U.S. Fish and Wildlife Service);

3. Wetland Analysis. In addition to the minimum report filing requirements set forth in MTMC 16.15.200(D), the report shall also contain an analysis of the wetlands to include the following site and proposal related information:

a. A written assessment and accompanying maps of the wetlands and buffers within 200 feet of the project area, including the following information, at a minimum:

- i. Wetland delineation and required buffers;
- ii. Existing wetland acreage;
- iii. Wetland category;
- iv. Vegetative, faunal, and hydrologic characteristics;
- v. Soil and substrate conditions;

vi. Topographic elevations, ~~at two foot contours~~;

~~vii.~~ Delineation methodology, with special emphasis on whether the approach used was routine, intermediate, or comprehensive, as described in the federal manual;

~~viii.~~ Specific descriptions of plant communities, soils, and hydrology;

~~ix.~~ A summary of existing wetland function and value; and

ix. If on-site wetland re-creation/rehabilitation is proposed, include a discussion of the water sources supplying the wetland and documentation of hydrologic regime (locations of inlet and outlet features, water depths throughout the wetland, evidence of recharge or discharge, evidence of water depths throughout the year – drift lines, algal layers, moss lines, and sediment deposits).

b. A summary of proposed wetland and buffer alterations, impacts, and the need for the alterations as proposed. Potential impacts may include but are not limited to loss of flood storage potential, loss of wildlife habitat, expected decreases in species diversity or quantity, changes in water quality, increases in human intrusion, and impacts on associated wetland or water resources.

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

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

e. Functional evaluation for the wetland and adjacent buffer citing the method and including all data sheets from the federal manual, numbered to correspond with sample site locations as staked and flagged in the field.

f. Proposed mitigation, if needed, including a written assessment and accompanying maps of the mitigation area including, at a minimum, any of the following information not already required by a mitigation plan per MTMC 16.15.220:

- i. Existing and proposed wetland acreage;
- ii. Vegetative and faunal conditions;

- iii. Surface and subsurface hydrologic conditions including an analysis of existing and future hydrologic regime and proposed hydrologic regime for enhanced, created, or restored mitigation areas;
 - iv. Relationship within watershed and to existing waterbodies;
 - v. Soil and substrate conditions, topographic elevations;
 - vi. Existing and proposed adjacent site conditions;
 - vii. Required wetland buffers (including any buffer reduction and mitigation proposed to increase the plant densities, remove weedy vegetation, and replant the buffers);
 - viii. Property ownership; and
 - ix. Associated wetlands and related wetlands that may be greater than 200 feet from the subject project.
- g. A scale map of the development proposal site and adjacent area. A discussion of ongoing management practices that will protect wetlands after the project site has been developed, including proposed monitoring and maintenance programs.
- h. A guarantee estimate for the installation (including site preparation, plant materials and installation, fertilizers, mulch, stakes) and the proposed monitoring and maintenance work for five years, unless a different number of years is recommended by the qualified professional or specified by the Director before or after submittal of report.
4. A notice on title applies, pursuant to MTMC 16.15.250.
5. Nothing in this section limits the authority of the Director to request additional information deemed necessary before, during, or after review of the report contents.
6. The Director may require third party review, pursuant to MTMC 16.15.200(G).

F. Wetland Buffers and Setbacks.

1. The general purpose and provisions applicable to wetland buffers and setbacks are subject to the provisions in MTMC 16.15.040, unless otherwise provided for in this section.
2. Wetland Buffer Uses. The following uses may be permitted within a wetland buffer in accordance with the review procedures of this chapter; provided, they are not prohibited by any other applicable law and conducted in a manner to minimize impacts to the buffer and adjacent wetland:
- a. All activities and uses as defined in this section;
 - b. Conservation and/or restoration activities aimed at protecting the soil, water, vegetation, or wildlife;
 - c. Passive Recreation. Passive recreation facilities designed and in accordance with an approved critical area report, including walkways and trails consistent with MTMC 16.15.100(B)(13). The Director may allow trails within the inner 25 percent of wetland buffers when required to provide access to wildlife viewing structures, fishing access areas, or connections to other trail facilities, wildlife viewing structures, and fishing access areas down to the water's edge that should be no larger than six feet; and
 - d. Low impact uses may be permitted within the additional building setback per the Wetland Buffer Requirements table in subsection (F)(3) of this section. Examples of such uses include utilities, recreation, and temporary construction staging required for such uses, ~~and permitted accessory uses~~; provided, that any building or structure shall not be of such size, individually or cumulatively, as to require issuance of a building permit.
3. Wetland Buffer Widths – Standards.

a. ~~Standard Buffer~~—The ~~standard~~ buffer widths in this section have been established in accordance with best available science. ~~The standard buffer widths presume the existence of a relatively intact native vegetation community in the buffer zone adequate to protect the wetland functions and values at the time of the proposed activity. The buffer widths assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer shall either be planted to create the appropriate plant community or the buffer shall be widened by 33 percent to ensure that adequate functions of the buffer are provided.~~ Lawns, walkways, driveways, and other mowed or paved areas are not considered to be buffers.

- i. To meet vegetative buffer standards, the wetland buffer must contain at least an average of 80 percent native plant cover, and noxious weed cover cannot exceed 10 percent. The native cover must include tree, shrub and groundcover strata in proportions that mimic native forest.

b. Wetland buffers shall be measured perpendicular from the wetland edge as delineated and marked in the field using U.S. Army Corps of Engineers Wetlands Delineation Manual (1987) and applicable regional supplements.

c. ~~Standard Wetland Buffer~~ Wetland Buffer widths shall be established according to Table 1-:

~~i. Wetland buffer widths shall be established according to the table:~~

Wetland Buffer Widths (in Feet)
Table 1

Wetland Category	<u>Mitigated Buffer¹</u> (With Minimization Measures <u>and habitat corridor</u>)			<u>Standard buffer</u> (Without Minimization Measures <u>and habitat corridor</u>)			Additional Building Setback from Buffer
	Habitat Score			Habitat Score			
	<i>Low</i> (3 – 5)	<i>Moderate</i> (6 – 7)	<i>High</i> (8-9)	<i>Low</i> (3 – 5)	<i>Moderate</i> (6 – 7)	<i>High</i> (8-9)	<i>All Habitat Scores</i>
1	75	110	225	75 100	150	300	15
2	75	110	225	75 100	150	300	10
3	60	110	225	60 80	150	300	5
4	40			50N/A			0
Artificial	As required						

¹ The use of the mitigated buffer widths requires the implementation of the measures in subsection (F)(4) of this section, where applicable, to minimize the impacts of the land uses adjacent to the wetland or buffer, in addition to any other applicable requirements.

~~ii. The use of the standard buffer widths requires the implementation of the measures in subsection (F)(4) of this section, where applicable, to minimize the impacts of the land uses adjacent to the wetland or buffer, in addition to any other applicable requirements.~~

iii. If an applicant chooses not to apply the mitigation measures in subsection (F)(4) of this section, then a 33 percent increase in the width of all buffers is required.

4. Measures to Minimize Impacts to Wetlands. Required. The wetland mitigated buffer widths in the Wetland Buffer Requirements table in this section in the Mitigated Buffer column in Table 1 assume implementation of the as many of the following measures as applicable and practical to minimize impacts from disturbances; where applicable to a specific proposal;

Mitigation for Disturbance

Table 2

Disturbance	Required Measures to Minimize Impacts
Lights	• Direct lights away from wetland
Noise	• Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10 feet heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic Runoff	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 feet of wetland • Apply integrated pest management
Stormwater Runoff	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer • Use low impact development (LID) techniques (per City's approved stormwater manual). Follow LID Minimum Requirement No. 8 (Wetlands Protection) for management of any stormwater discharging to a wetland
Change in Water Regime	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and Human Disturbance	• Use privacy fencing or plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the eco-region • Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	• Use best management practices to control dust
Disruption of Corridors or Connections	• Maintain connections to off-site areas that are undisturbed • Restore corridors or connections to off-site habitats by replanting

5. Conditions for implementing wetland buffer width standards

a. Wetlands that score 6 points or more for habitat function: the mitigated buffers in Table 1 can be used only if all of the following criteria are met:

i. A relatively undisturbed, vegetated corridor at least 100 feet wide is protected between the wetland and:

(A) A legally protected, relatively undisturbed and vegetated area (e.g., Priority Habitats, compensatory mitigation sites, wildlife areas/refuges, national, county, and state parks where they have management plans with identified areas designated as Natural, Natural Forest, or Natural Area Preserve, or

(B) An area that is the site of a Watershed Project identified within, and fully consistent with, a Watershed Plan as defined by RCW 89-08-460, or

(C) An area where development is prohibited according to the provisions of the local shoreline master program, or

(D) An area with equivalent habitat quality that has conservation status in perpetuity, in consultation with WDFW.

ii. The corridor is permanently protected for the entire distance between the wetland and the shoreline or legally protected area by a conservation easement, deed restriction, or other legal site protection mechanisms.

iii. Presence or absence of the shoreline or Priority Habitat must be confirmed by a qualified biologist or Shoreline Administrator.

- iv. The measures in Table 2 are implemented, as applicable, to minimize the impacts of the adjacent land uses.
- b. For wetlands that score 5 or fewer habitat points, only the measures in Table 2 are required for the use of the mitigated buffers in Table 1.
- c. If an applicant does not apply the mitigation measures in Table 2 or is unable to provide a protected corridor, then the standard buffers in Table 1 shall be used.
- d. For interrupted buffer regulations, see MTMC 16.15.100(B)(5).
- e. Legally established buffer. Where a buffer has been previously established on a legally created parcel or tract that was legally established according to the regulations in place at the time of establishment and is permanently recorded on title or placed within a separate tract, and the parcels that are included on the plat at the time of recording of the subject parcel or tract, then the buffer shall remain as previously established, provided:
 - i. It is equal to or greater than 50 percent of the required standard buffer distance for the applicable stream category; and
 - ii. Meets vegetative buffer standards above; and
 - iii. Impact minimization measures are applied.
- f. Where wetland functions have been improved due to voluntary implementation of an approved stewardship, restoration and/or enhancement plan that is not associated with required mitigation or enforcement, the wetland buffer width shall be determined based on the previously established wetland category and habitat score as documented in the approved stewardship and enhancement plan.

65. Building Setbacks from Wetland Buffers.

- a. Unless otherwise provided, buildings and other structures shall be set back from the edge of the wetland buffer per the table in subsection (F)(3)(c) of this section, or from the edges of all critical areas, if no buffers are required.
- b. The following may be allowed in the ~~additional~~ wetland building setback area:
- ~~a. — i. Landscaping with a majority of native vegetation;~~
 - ~~b. — ii. Uncovered decks;~~
 - ~~e. i. —~~ iii. Building overhangs, if such overhangs do not extend more than 24 inches into the setback area; and
 - ~~e. ii. —~~ iv. Impervious ground surfaces, such as driveways and patios; provided, that such improvements may be subject to water quality regulations, pursuant to City stormwater regulations.

67. Increased Wetland Buffer Widths.

- a. An increase in the required buffer widths shall be provided, as determined by the Director, based on the recommendations of an experienced, qualified professional wetland scientist on a case-by-case basis when a larger buffer is necessary to protect wetland functions and values based on site-specific characteristics. This determination shall be based on one or more of the following criteria:
- i. A larger buffer is needed to protect critical areas other than the wetland; or

ii. The buffer or adjacent uplands has a slope greater than 15 percent or is susceptible to erosion and standard erosion-control measures will not prevent adverse impacts to the wetland; or

iii. Slopes greater than 30% require an increased wetland buffer by 50%; or

iv. The wetland and/or buffer is occupied by a federally listed threatened or endangered species, a bald eagle nest, a great blue heron rookery, or a species of local importance; and it is determined that an increased buffer width is necessary to protect the species; or

v. The existing buffer vegetation is considered inadequate because the buffer area has minimal vegetative cover or is composed of nonnative vegetation, lawn, or bare ground.

b. At the discretion of the Director, the buffer width may be increased to ensure that adequate functions of the buffer are provided or an applicant may be required to develop and implement a wetland buffer enhancement plan. Where a buffer enhancement planting plan is proposed, it shall, unless otherwise recommended by a qualified professional, include (as appropriate):

i. Removal of nonnative plants when nonnative or invasive plant species provide the dominant cover;

ii. Native plant planting densities of no less than three feet on center for shrubs and eight feet on center for trees; and

iii. A monitoring and maintenance plan to ensure success.

78. Buffer Averaging Wetland Buffer Width Modification.

a. The Director may allow modification of a ~~standard~~ wetland buffer width consistent with an approved critical areas report. Wetland buffers widths may be modified ~~or reduced either~~ by averaging buffer widths or by enhancing buffer quality when consistent with the criteria in this section. The activity or use shall be mitigated to achieve no net loss of wetland area or functions consistent with this section and other applicable provisions of this chapter. ~~Wetland buffer averaging with enhancement shall be preferred over wetland buffer reduction with enhancement. Wetland buffer reduction shall only be approved by the Director when buffer averaging cannot be accomplished on site.~~

b. Buffer width averaging with buffer enhancement may be allowed where a qualified professional demonstrates to the Department that:

i. The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation, and the wetland would benefit from a wider buffer in places and would not be adversely impacted by a narrower buffer in other places;

ii. That averaging will not reduce wetland functions or values;

iii. The total area contained within the buffer after averaging shall be no less in area than contained within the standard buffer prior to averaging;

iv. The required building setback shall not be included in the area used to calculate buffer averaging;

v. The buffer width is not reduced to less than 75 percent of the standard width ~~or 30 feet~~ at any location; and

vi. The buffer averaging and enhancement plan provides evidence that wetland functions and values will be:

(A) Increased or retained through plan implementation for those wetlands where existing buffer vegetation is generally intact; or

(B) Increased through plan implementation for those wetlands where existing buffer vegetation is inadequate to protect the functions and values of the wetland.

~~e. Buffer Width Reductions through Buffer Enhancement. At the discretion of the Director, and only when buffer averaging cannot be accomplished on site, wetland buffer width reductions (or approval of standard buffer widths for wetlands where existing buffer conditions require increased buffer widths) may be granted concomitant to the development and implementation of a wetland buffer enhancement plan for Category III and IV wetlands only. Approval of a wetland buffer enhancement plan shall, at the discretion of the Director, allow for wetland buffer width reductions by no more than 25 percent of the standard width; provided, that:~~

~~i. The plan provides evidence that wetland functions and values will be:~~

~~(A) Increased or retained through plan implementation for those wetlands where existing buffer vegetation is generally intact; or~~

~~(B) Increased through plan implementation for those wetlands where existing buffer vegetation is inadequate to protect the functions and values of the wetland;~~

~~ii. The plan documents existing native plant densities and provides for increases in buffer native plant densities to no less than three feet on center for shrubs and eight feet on center for trees;~~

~~iii. The plan requires monitoring and maintenance to ensure success in accordance with MTMC 16.15.220; and~~

~~iv. The plan specifically documents methodology and provides performance standards including but not limited to:~~

~~(A) Percent vegetative cover;~~

~~(B) Percent invasive species cover;~~

~~(C) Species richness; and~~

~~(D) Amount of large woody debris.~~

9. Functionally disconnected buffers may be appropriate to exclude from regulated buffers per MTMC 16.15.100(B)(5).

~~G. Alteration of Wetlands. Alteration of wetlands or their established buffers may be permitted by the Department through a reasonable use exception subject to MTMC 16.15.306, a variance subject to MTMC 16.15.350, or by an exempt activity pursuant to MTMC 16.15.100, subject to provisions of MTMC 16.15.310 and the provisions of this section. No net loss of wetland functions and values may occur.~~

~~1. Category I Wetlands. Alterations of Category I wetlands shall be avoided, subject to the reasonable use provisions of this chapter.~~

~~2. Category II, and III Wetlands. Alteration and mitigation shall comply with the MTMC 16.15.310 and the mitigation requirements, pursuant to MTMC 16.15.210 through 16.15.240, as applicable. Where enhancement, restoration or creation is proposed, wetland mitigation ratios shall comply per subsection H of this section.~~

~~3. Class IV and Artificial Wetlands. As required, per the recommendations of a wetland report, unless the Director determines otherwise.~~

H. Compensatory Mitigation - Wetland Mitigation Ratios.

1. Where wetland alterations are permitted by the ~~Director~~ Hearing Examiner, the applicant shall mitigate impacted areas of wetlands to compensate for losses. The mitigation shall be determined according to acreage,

function, type, location, timing factors, and projected success of the mitigation. The ratios in the Wetland Mitigation Ratios tables apply.

Wetland Mitigation Ratios
Compensation ratios for permanent impacts^{1,2,3}

<u>Category of impacted wetland (based on score for function)</u>	<u>Reestablishment or creation</u>	<u>Rehabilitation</u>	<u>Preservation</u>	<u>Enhancement</u>
<u>Category I</u>	<u>4:1</u>	<u>8:1</u>	<u>16:1</u>	<u>16:1</u>
<u>Category II</u>	<u>3:1</u>	<u>6:1</u>	<u>12:1</u>	<u>12:1</u>
<u>Category III</u>	<u>2:1</u>	<u>4:1</u>	<u>8:1</u>	<u>8:1</u>
<u>Category IV</u>	<u>1.5:1</u>	<u>3:1</u>	<u>6:1</u>	<u>6:1</u>

¹ Ratios for rehabilitation, preservation, and enhancement may be reduced when combined with 1:1 replacement through re-establishment or creation. See Table 6B-2 in Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance –Version 2 (Ecology et al., 2021 or as revised).

² All proposed preservation sites need to meet the preservation criteria listed in MTMC 16.15.400(H)(2)(iii)

³ The ratios provided are for permanent, direct impacts to wetlands. For recommended ratios for other types of impacts (e.g., long-term temporary, conversions), see Chapters 6B4.4 through 6B4.8 of Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance –Version 2 (Ecology et al., 2021 or as revised).

2. Mitigation for wetland and buffer impacts shall rely on a method listed below in order of preference. A lower-preference form of mitigation shall be used only if the applicant's qualified wetland professional demonstrates to the Hearing Examiner's satisfaction that all higher ranked types of mitigation are not viable, consistent with the criteria in this Section.

a. Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions and environmental processes to a former or degraded wetland. Restoration is divided into two categories:

(A) Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions and environmental processes to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland area and functions. Example activities could include removing fill, plugging ditches, or breaking drain tiles to restore a wetland hydroperiod, which in turn will lead to restoring wetland biotic communities and environmental processes.

(B) Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions and environmental processes to a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland area. The area already meets wetland criteria, but hydrological processes have been altered. Rehabilitation involves restoring historic hydrologic processes. Example activities could involve breaching a dike to reconnect wetlands to a floodplain or return tidal influence to a wetland.

b. Establishment or creation: The manipulation of 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. Establishment results in a gain in wetland area and functions. An example activity could involve excavation of upland soils to elevations that will produce a wetland hydroperiod and hydric soils by intercepting groundwater, and in turn supports the growth of hydrophytic plant species.

(A) If a site is not available for wetland restoration to compensate for expected wetland and/or buffer impacts, the Hearing Examiner may authorize establishment of a wetland and buffer upon demonstration by the applicant's qualified wetland professional that:

(A) The hydrology and soil conditions at the proposed mitigation site are conducive for sustaining the proposed wetland and that establishment of a wetland at the site will not likely cause hydrologic problems elsewhere;

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

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

(D) The proposed wetland would not be established at the cost of another high-functioning habitat (i.e., ecologically important uplands).

c. Preservation (Protection/Maintenance). The removal of a threat to, or preventing the decline of, wetlands by an action in or near those wetlands. This term includes activities commonly associated with the protection and maintenance of wetlands through the implementation of appropriate legal and physical mechanisms such as recording conservation easements and providing structural protection like fences and signs. Preservation does not result in a gain of aquatic resource area or functions but may result in a gain in functions over the long term. Preservation of a wetland and associated buffer can be used only if:

(A) The Hearing Examiner determines that the proposed preservation is the best mitigation option;

(B) The proposed preservation site is under threat of undesirable ecological change due to permitted, planned, or likely actions that will not be adequately mitigated under existing regulations;

(C) The area proposed for preservation is of high quality or critical for the health and ecological sustainability of the watershed or sub-basin. Some of the following features may be indicative of high-quality sites:

(A) Category I or II wetland rating (per 020.B of this Section).

(B) Rare or irreplaceable wetland type [e.g. peatlands, mature forested wetland, estuaries, vernal pools, alkali wetlands] or aquatic habitat that is rare or a limited resource in the area.

(C) The presence of habitat for threatened or endangered species (state, federal, or both).

(D) Provides biological and/or hydrological connectivity to other habitats.

(E) Priority sites identified in an adopted watershed plan.

(D) Permanent preservation of the wetland and buffer shall be provided through a legal mechanism such as a conservation easement or tract held by an appropriate natural land resource manager/land trust.

(E) The Hearing Examiner may approve another legal and administrative mechanism in lieu of a conservation easement if it is determined to be adequate to protect the site.

d. Enhancement. The manipulation of the physical, chemical, or biological characteristics of a wetland to heighten, intensify, or improve specific wetland function(s). Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in the gain of selected wetland function(s) but may also lead to a decline in other wetland function(s). Enhancement does not result in a gain in wetland area. Enhancement activities could include planting vegetation, controlling non-native or invasive species, and modifying site elevations to alter hydroperiods in existing wetlands.

Applicants proposing to enhance wetlands and/or associated buffers shall demonstrate how the proposed enhancement will increase the wetland and/or buffer functions, how this increase in function will adequately compensate for the impacts, and how existing wetland functions at the mitigation site will be protected.

e. Alternative Types of Mitigation/Resource Tradeoffs. The Hearing Examiner may approve alternative mitigation proposals that are based on best available science, such as priority restoration plans that achieve restoration goals identified in the SMP. Alternative mitigation proposals shall provide an equivalent or better level of ecological functions and values than would be provided by standard mitigation approaches. Alternative mitigation approaches shall comply with all reporting, monitoring, and performance measures of this Section including adherence to mitigation sequencing. The City may consult with agencies with expertise and jurisdiction over the critical areas during the review to assist with analysis and identification of appropriate performance measures that adequately safeguard critical areas.

The Hearing Examiner will consider the following for approval of an alternative mitigation proposal:

(A) Clear identification of how an alternative approach will achieve equal or better ecological benefit.

(B) The proposal uses a watershed approach consistent with Selecting Wetland Mitigation Sites Using a Watershed Approach [Western Washington or Eastern Washington (Ecology Publication #09-06-32 or Publication #10-06- 007), or as revised].

(C) All impacts are identified, evaluated, and mitigated.

(D) Methods to demonstrate ecological success are clear and measurable.

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Wetland Mitigation Ratios

Category of Wetland	Creation, Restoration, or Reestablishment Ratio	Enhancement or Rehabilitation Ratios*
	Square Feet of Mitigation Area: Square Feet of Wetland Area	
Category I: Based on Total Score For Functions	4:1	8:1
Category I: Mature Forest	6:1	12:1
Category II: Based on Total Score For Functions	3:1	6:1

Category of Wetland	Creation, Restoration, or Reestablishment Ratio	Enhancement or Rehabilitation Ratios*
	Square Feet of Mitigation Area: Square Feet of Wetland Area	
Category III (All)	2:1	4:1
Category IV (All)	1:25:1	2.5:1

*Ratios for rehabilitation and enhancement may be reduced when combined with 1:1 replacement through creation or reestablishment. See Table 1a, Wetland Mitigation in Washington State—Part I, Version 1 (Publication No. 06-06-011a, March 2006, or as revised).

~~2. These ratios do not apply to mitigation actions resulting from unauthorized alterations; greater ratios shall apply in those cases. When credits from a certified bank are used, replacement ratios should be consistent with the requirements of the bank's certification.~~

~~3. The Director may vary these standards when the applicant can demonstrate, and the Director agrees, that the variation will be roughly proportionate to the proposed loss or degradation of wetland area and/or functions. In no case shall the amount of mitigation be less than the area of affected wetland. The Director may, at his discretion, increase these standards where mitigation is to occur off site or in other appropriate circumstances.~~

I. Compensatory Mitigation - Credit-Debit Method. Mitigation requirements may also be determined using the credit-debit tool described in “Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report, March 2012” (Ecology Publication No. 10-06-011, March 2012, or as revised). The credit-debit method may be used in place of standard Wetland Mitigation Ratios described in MTMC 16.15.400(H).

J. Mitigation. Mitigation, when applicable or required, shall be implemented consistent with mitigation sections MTMC 16.15.210 through 16.15.240, and any other applicable mitigation provision in this section.

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

JK. Wetland Protection. Protective covenants shall be provided, pursuant to MTMC 16.15.250 and 16.15.270. (Ord. 2747 § 4, 2019; Ord. 2731 § 2 (Exh. A), 2018).

~~16.15.410—Streams:~~

~~A. Streams are those areas where surface waters produce a defined channel or bed. A defined channel or bed is an area which demonstrates clear evidence of the passage of water and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds, and defined channel swales. The channel or bed need not contain water year round. This definition is not intended to include artificially created irrigation ditches, canals, storm or surface water devices or other entirely artificial watercourses unless they are used by salmonids or created for the purposes of stream mitigation.~~

~~B. Classification and Rating of Streams. Streams shall be classified pursuant to WAC 222-16-030, Water typing system. When more than one stream type is present on a subject property (e.g., the stream changes character in short alternating segments), it will be classified according to the stream class present along the majority of the length within a given section. The stream class shall change at the point at which the majority of the length receives a different classification.~~

~~The waters will be classified using the following criteria:~~

~~1. “Type S water” means all waters, within their bankfull width, as inventoried as “shorelines of the state” under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW, including periodically inundated areas of their associated wetlands.~~

~~2. “Type F water” means segments of natural waters other than Type S waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands, or within lakes, ponds, or~~

~~impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat or are described by one of the following four categories:~~

~~a. Waters which are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;~~

~~b. Waters which are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F water upstream from the point of diversion for 1,500 feet, including tributaries if highly significant for protection of downstream water quality. The Department may allow additional harvest beyond the requirements of Type F water designation, provided the Department determines after a landowner requested on-site assessment by the Department of Fish and Wildlife, Department of Ecology, the affected tribes and interested parties that:~~

~~i. The management practices proposed by the landowner will adequately protect water quality for the fish hatchery; and~~

~~ii. Such additional harvest meets the requirements of the water type designation that would apply in the absence of the hatchery;~~

~~c. Waters which are within a federal, state, local, or private campground having more than 10 camping units; provided, that the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;~~

~~d. Riverine ponds, wall-based channels, and other channel features that are used by fish for off-channel habitat. These areas are critical to the maintenance of optimum survival of fish. This habitat shall be identified based on the following criteria:~~

~~i. The site must be connected to a fish habitat stream and accessible during some period of the year; and~~

~~ii. The off-channel water must be accessible to fish.~~

~~3. "Type Np water" means all segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of a year of normal rainfall and include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow.~~

~~4. "Type Ns water" means all segments of natural waters within the bankfull width of defined channels that are not Type S, F, or Np waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np water. Ns waters must be physically connected by an above-ground channel system to Type S, F, or Np waters.~~

~~C. Mapping. The approximate location of streams is shown on the adopted critical areas maps, pursuant to MTMC 16.15.080. The exact location and classification shall be determined through field investigation by a qualified professional applying the applicable manuals adopted by this chapter.~~

~~D. Stream Buffer Areas and Setbacks.~~

~~1. General Provisions. The establishment of buffers, buffer areas or setbacks shall be required for all development proposals and activities in or adjacent to critical areas. The purpose of the buffer shall be to protect the integrity, function and value of the subject critical area (wetlands, streams, and wildlife habitat areas), and/or to protect life, property and resources from risks associated with development on unstable or critical lands (geologic hazard areas, flood hazard areas, aquifer recharge). Buffers shall typically consist of an undisturbed area of native vegetation. No buildings or structures shall be allowed unless otherwise permitted by this chapter. If the site has previously been disturbed, the buffer area shall be revegetated, pursuant to an approved enhancement plan. Buffers shall be protected during construction by placing a temporary barricade, posting notice of the presence of the critical area, and implementing appropriate erosion and sedimentation controls. Restrictive covenants or conservation easements may be required to provide long-term preservation and protection of buffer areas.~~

~~2. Required Buffer Widths. Required buffer widths shall reflect the sensitivity of the particular critical area or the risks associated with development. In those circumstances permitted by these regulations, the type and intensity of human activity proposed to be conducted on or near the critical area should also be considered. Buildings shall be set back a minimum of 15 feet from the edge of the buffer. Buffers shall be measured as follows:~~

~~a. Stream Buffers. The buffer shall be measured from the ordinary high water mark. The following minimum buffers are established for streams:~~

Water Type	Description	Minimum Buffer Width (in Feet)	Additional Buffer for Threatened or Endangered Species (in Feet)	Building Setback (in Feet)
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Water Type	Description	Minimum Buffer Width (in Feet)	Additional Buffer for Threatened or Endangered Species (in Feet)	Building Setback (in Feet)
S	Shoreline of the state (Per RCW 90.58.030)	150	75	15
F	Defined channel and periodically inundated areas	100	50	15
Np	Perennial	50	0 (no anadromous fish)	15
Ns	Seasonal	Determined based on review of technical information	0 (no anadromous fish)	15
—	Intermittent streams	—	—	—

b. The buffer widths required in this section are minimums, except as provided below, and may be increased by the Department in response to site specific conditions and based on the information submitted to characterize the functions and values of the stream.

c. A stream buffer width greater than the minimum may be required by the Department based on the findings of site specific studies.

d. The applicant may propose to implement one or more enhancement measures, listed below, which may be considered in establishing buffer requirements under subsection (D)(2)(c) or (D)(2)(g) of this section:

- i. Removal of fish barriers to restore accessibility to anadromous fish;
- ii. Enhancement of fish habitat using log structures incorporated as part of a fish habitat enhancement plan;
- iii. Landscaping outside the buffer area with native vegetation or a reduction in the amount of clearing outside the buffer area;
- iv. Planting native vegetation within the buffer area, especially vegetation that would increase value for fish and wildlife, increase stream bank or slope stability, improve water quality, or provide aesthetic/recreational value;
- v. Creating a surface channel where a stream was previously culverted or piped;
- vi. Removing or modifying existing stream culverts (such as at road crossings) to improve fish passage and flow capabilities which are not detrimental to fish;
- vii. Upgrading retention/detention facilities or other drainage facilities beyond required levels; or
- viii. Similar measures determined applicable by the Department.

e. No structures or improvements shall be permitted within the stream buffer area, including buildings, decks, and docks, except as otherwise permitted under one of the following circumstances:

- i. When the improvements are part of an approved enhancement, restoration or mitigation plan; or
- ii. For construction of new public roads and utilities, and accessory structures, when no feasible alternative location exists; or
- iii. Construction of foot trails, according to the following criteria:
 - (A) Constructed of permeable materials;
 - (B) Designed to minimize impact on the stream system;
 - (C) Of a maximum width of eight feet;
 - (D) Located within the outer half of the buffer, i.e., the portion of the buffer that is farther away from the stream; or
- iv. Construction of footbridges; or
- v. Construction of educational facilities, such as viewing platforms and informational signs.

f. The Department may permit stream buffer widths to be averaged for segments of Type S, F, Np and Ns streams based on the findings of the stream report, subject to the following criteria: stream functions will not be reduced; fish habitat will not be adversely affected; additional enhancement of habitat is provided in conjunction with the reduced buffer; the buffer is not reduced more than 25 percent in any location; and the total buffer area after averaging is not less than what would be contained in the standard buffer. For averaging purposes, stream buffer widths shall be calculated based only on the stream segment located on the parcel being developed.

g. Stream buffer width on a site with existing or prior commercial development that has a legal nonconforming buffer and is proposed for redevelopment with improvements that will increase the economic viability of the development, notwithstanding the provisions of MTMC 19.120.250, may be reduced by up to 25 percent if an applicant undertakes measures approved by the Department to enhance or restore the buffer; provided, that best available science indicates such measures are likely to enhance the functions and values of the buffer compared to

~~existing conditions. The restoration or enhancement measures may include, but are not limited to, those measures listed in subsection (D)(2)(d) of this section.~~

~~h. Long Term Protection of Streams and Buffers Required. A regulated stream and its associated buffer shall be protected by recording a notice on title, pursuant to MTMC 16.15.250, and can occur by one of the following methods: placing in a separate critical tract on which development is prohibited; protected by execution of an easement; dedicated to a conservation organization or land trust; or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the stream and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with Snohomish County.~~

~~E. Buffer Width Variances. A “minor critical area buffer width variance,” defined as up to and including 10 percent of the standard requirement per subsection D of this section, Stream Buffer Areas and Setbacks, may be granted by the Hearing Examiner, pursuant to MTMC 16.15.350, Variances, and the mitigation to achieve the proposed variance results in a higher functional system than mitigation would otherwise provide commensurate with the replacement ratios.~~

~~F. Critical Area Report Requirements—Streams.~~

~~1. The purpose of the report is to determine the physical and biological characteristics of streams on any site where regulated activities are proposed. The report will also be used by the City to determine the appropriate stream rating designation and buffering requirement for the stream. The information required for this report should be coordinated with the study and reporting requirements established for any other sensitive areas located on the site.~~

~~In addition to the general critical area report requirements of MTMC 16.15.200, critical area reports must meet the requirements of this section.~~

~~2. Stream banks (or stream centerline) should be flagged in the field by a qualified consultant. Field flagging must be distinguishable from other survey flagging on the site. The field flagging must be accompanied by a stream reconnaissance report. The report shall include the following information:~~

~~a. Vicinity map;~~

~~b. Site designated on a City of Mountlake Terrace stream inventory map;~~

~~c. Streams shall be located approximately on a site map at an appropriate engineering scale such that information shown is not cramped or illegible. Generally, a scale of one inch equals 40 feet or greater (such as one inch equals 20 feet) should be used. Existing features must be distinguished from proposed features. The map must show:~~

~~i. Site boundary property lines and roads;~~

~~ii. Internal property lines, rights of way, easements, etc.;~~

~~iii. Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;~~

~~iv. Contours at the smallest readily available intervals, preferably at five foot intervals;~~

~~v. Approximate locations of all streams on the property;~~

~~vi. Hydrologic mapping showing patterns of water movement into, through, and out of the site area; and~~

~~vii. For large and/or complex projects, an air photo with overlays displaying the site boundaries and stream locations may be required. Generally, an orthophotograph at a scale of one inch equals 400 feet or greater (such as one inch equals 200 feet) should be used. If an orthophotograph is not available, the center of a small scale (e.g., one inch equals 2,000 feet) aerial photograph enlarged to one inch equals 400 feet may be used.~~

~~d. The report must describe:~~

~~i. Locational information including legal description and address;~~

~~ii. All natural and manmade features within 150 feet of the site boundary;~~

~~iii. General site conditions including topography, acreage, and area hydrology;~~

~~iv. Specific descriptions of streams, including gradient and flow characteristics, stream bed condition, stream bank and slope stability, presence of fish or habitat for fish, presence of obstructions to fish movement, general water quality, and stream bank vegetation;~~

~~v. A summary of existing stream value for fisheries habitat; and~~

~~vi. A summary of proposed stream and buffer alterations, impacts, and the need for the alterations as proposed. Potential impacts may include but are not limited to vegetation removal, stream bed and stream bank alterations, alteration of fisheries habitat, changes in water quality, and increases in human intrusion. If alteration of a stream is proposed, a stream mitigation plan is required per this section.~~

~~G. Alteration or Development of Stream Areas.~~

~~1. General Provisions.~~

~~a. Alteration of a stream and/or its established buffer may be permitted by the Department subject to the provisions and criteria of this section.~~

~~b. Standards for mitigation of impacts are subject to subsection H of this section, and with mitigation for critical areas in general as identified in MTMC 16.15.210 through 16.15.240. The mitigation plan shall satisfy performance standards per subsection I of this section, as applicable.~~

~~2. Relocation of a Stream:~~

~~a. Relocation of a Type S stream shall be prohibited.~~

~~b. Relocation of other streams may take place only when it is part of an approved mitigation or enhancement or restoration plan, will result in equal or better habitat and water quality, and will not diminish the flow capacity of the stream.~~

~~c. Relocation of a Type F, Np, or Ns stream exclusively to facilitate general site design shall not be permitted.~~

~~3. Stream Crossings:~~

~~a. Bridges shall be used to cross Type S streams. Boring/micro tunneling may be considered for utility crossings if it would result in the same or lower impacts as bridging.~~

~~b. Culverts are allowable only under the following circumstances:~~

~~i. Only in Type F, Np, or Ns streams;~~

~~ii. When fish passage will not be impaired;~~

~~iii. When the following design criteria are met:~~

~~(A) Oversized culverts will be installed;~~

~~(B) Culverts will include gradient controls and creation of pools within the culvert for Type F streams;~~

~~(C) Gravel substrate will be placed in the bottom of the culvert to a minimum depth of one foot for Type F or Np streams;~~

~~iv. The applicant or successors shall, at all times, keep any culvert free of debris and sediment to allow free passage of water and, if applicable, fish.~~

~~e. The City may require that a culvert be removed from a stream as a condition of approval, unless the culvert is not detrimental to fish habitat or water quality, or removal would be a long term detriment to fish or wildlife habitat or water quality.~~

~~H. Mitigation Requirements. Mitigation, when applicable or required, shall be implemented consistent with sections MTMC 16.15.210 through 16.15.240, and any other applicable mitigation provisions in this section, including the specific performance standards per subsection I of this section.~~

~~Mitigation projects should be completed immediately following disturbance and prior to use or occupancy of the action or development. Construction of mitigation projects shall be timed to reduce impacts to existing fisheries, wildlife, and flora.~~

~~I. Performance Standards for Stream Mitigation Plans. The performance standards in this subsection shall be incorporated into performance standard requirements set forth in MTMC 16.15.230.~~

~~1. Use plants native to the Puget Lowlands. Nonnative, introduced plants or plants listed by the Washington State Department of Agriculture as noxious weeds (Chapter 16-750 WAC) shall not be used;~~

~~2. Use plants adapted to and appropriate for the proposed habitats and consider the ecological conditions known or expected to be present on the site;~~

~~3. Avoid planting significant areas of the site with species that have questionable potential for successful establishment, such as species with a narrow range of habitat tolerances;~~

~~4. Specify plants that are commercially available from native plant nurseries or available from local sources; if collecting some or all native plants from donor sites, collect in accordance with ecologically accepted methods, such as those described in the Washington Native Plant Society's Policy on Collection and Sale of Native Plants, that do not jeopardize the survival or integrity of donor plant populations;~~

~~5. Use perennial plants in preference to annual species;~~

~~6. Use plant species high in food and cover value for native fish and wildlife species that are known or likely to use the mitigation site (according to reference wetlands, published information, and professional judgment);~~

~~7. Install a temporary irrigation system and specify an irrigation schedule unless a sufficient naturally occurring source of water is demonstrated;~~

~~8. For stream substrate, at least one foot of clean inorganic and/or organic materials, such as cobble, gravel, sand, silt, clay, muck, or peat as appropriate shall be ensured. The stream substrate soils shall be free from solid, dangerous, or hazardous substances as defined by Chapter 70.105 RCW and implementing rules;~~

~~9. Confine temporary stockpiling of soils to upland areas. Unless otherwise approved by the Department, comply with all applicable best management practices for clearing, grading, and erosion control to protect any nearby surface waters from sediment and turbidity;~~

~~10. Show densities and placement of plants; these should be based on the ecological tolerances of species proposed for planting, as determined by a qualified professional;~~

~~11. Provide sufficient specifications and instructions to ensure proper placement diversity and spacing of seeds, tubers, bulbs, rhizomes, springs, plugs, and transplanted stock and other habitat features, to provide a high probability of success, and to reduce the likelihood of prolonged losses of stream functions from proposed development. Prepare contingency plans for all mitigation proposals;~~

~~12. Do not rely on fertilizers and herbicides to promote establishment of plantings; if fertilizers are used, they must be applied per manufacturer specifications to planting holes in organic or time-release forms, such as Osmocote® or comparable formulations, and never broadcast on the ground surface; if herbicides are used to control invasive species or noxious weeds and to help achieve performance standards, only those approved for use in aquatic ecosystems by the Washington Department of Ecology shall be used; herbicides shall only be used in conformance with all applicable laws and regulations and be applied per manufacturer specifications by an applicator licensed in the state of Washington;~~

~~13. Include the applicant's mitigation plan qualified professional in the construction process to ensure the approved mitigation plan is completed as designed. At a minimum, the qualified professional's participation will include site visits to inspect completed rough and final grading, installation of in-water or other habitat structures, and to verify the quality and quantity of native plant materials before and after installation; and~~

~~14. During construction, place temporary markers, signs and/or fencing around the perimeter of the critical area, where practical and applicable to particular critical areas.~~

~~J. Stream Protection. Protective covenants shall be provided, pursuant to MTMC 16.15.250 and 16.15.270. (Ord. 2731 § 2 (Exh. A), 2018).~~

16.15.420 Fish and Wildlife ~~H~~abitat Conservation Areas.

~~Fish and wildlife habitat conservation areas are areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness. "Fish and wildlife habitat conservation areas" does not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of, and are maintained by, a port district or an irrigation district or company. Wildlife corridors are needed to maintain connectivity, provide access to larger habitats, and allow wildlife populations to interbreed. In urban areas, where wildlife corridors and habitat areas are often small and/or isolated, such areas can still provide valuable habitat for more urban tolerant species including amphibians, fish, and birds, provide significant recreational opportunities, and provide important linkages in a highly fragmented landscape.~~

A. Applicability.

1. To promote consistent application of the standards and requirements of this chapter, fish and wildlife habitat conservation areas within the City of Mountlake Terrace shall be classified according to their characteristics, function and value, and/or their sensitivity to disturbance. Classification of wildlife habitat shall be determined by the Department based on consideration of the following factors and in the following order:

- a. Consideration of the technical reports submitted by qualified professionals in connection with applications subject to these regulations;
- b. Application of the criteria contained in this section; and
- c. Maps adopted pursuant to this chapter, and Washington Department of Fish and Wildlife (WDFW) priority habitat maps.

2. Fish and Wildlife Habitat Conservation Areas Classification. ~~Fish and W~~ildlife habitat conservation areas shall be classified ~~as critical or secondary~~, according to the criteria in this section.

- a. Areas where endangered, threatened, sensitive, and candidate species have a primary association
~~"Critical habitats" are those habitat areas which meet the definition of "secondary habitat" and meet any one of the following criteria:~~
- b. Habitats and species of local importance, as determined locally

c. Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat

d. Waters of the state

e. Lands, ponds, streams, and rivers planted with game fish by a government or tribal entity

f. Stream types F, Np, Ns

f. State natural area preserves, natural resource conservation areas, and state wildlife areas

g. Shown on WDFW priority habitat maps and/or listed

h. Land essential for preserving connections between habitat blocks and critical areas, such as wildlife habitat networks or corridors

~~i. Shown on WDFW priority habitat maps; or~~

~~ii. The documented presence of species or habitat listed by federal or state agencies as “endangered,” “threatened,” “candidate,” “sensitive” or “priority”; or~~

~~iii. The presence of unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or~~

~~iv. Located in or adjacent to a “Category I wetland,” as defined in these regulations; or~~

~~v. Located in or adjacent to a “Type S stream,” as defined in these regulations.~~

~~b. “Secondary habitats” are habitats which are valuable to wildlife and support a wide variety of species due to their undisturbed nature, a diversity of plant species and structure, presence of water, or the area’s size, location or seasonal importance, and is not classified as a critical habitat.~~

B. Buffers and Setbacks from Wildlife Habitat.

1. General Provisions.

a. Buffer widths for critical-priority habitat areas shall be determined by the Department based on consideration of the following factors:

~~i. The Department may require a buffer for habitats and species based on its own expertise or third-party review. The Department may also allow minimization and conservation measures, habitat retention, mitigation, or corridors in lieu or in addition to buffers depending on the specific species.~~

~~ii. Species recommendations of the WDFW, based on consideration of published species-specific information and consultation with the Department~~

~~;~~

~~iii. Recommendations contained in the wildlife study submitted by a qualified professional, following the reporting requirements of these regulations; and~~

~~iv. The nature and intensity of land uses and activities occurring on the site and on adjacent sites. Buffers shall not be required for secondary habitat unless such habitat includes another regulated critical area for which a buffer is required by this chapter.~~

b. Wildlife habitat buffer widths may be modified by averaging buffer widths or by enhancing or restoring buffer quality, pursuant to scientific analysis that the functions and values of the wildlife habitat will be retained or enhanced. Buffer averaging is not permitted for stream buffers.

~~eb.~~ Certain uses and activities which are consistent with the purpose and function of the habitat buffer, and do not detract from its integrity, may be permitted by the Department within the buffer depending on the sensitivity of the habitat area. Examples of uses and activities with minimal impact, which may be permitted in appropriate cases, include permeable pedestrian trails and viewing platforms, and utility easements; provided, that any impacts to the buffer resulting from permitted facilities shall be mitigated. When permitted, such facilities shall be located in the outer 10 feet of the buffer.

c. Functionally disconnected buffers may be appropriate to exclude from regulated buffers per MTMC 16.15.100(B)(5).

C. Critical Area Report Requirements – ~~Fish and Wildlife Habitat Conservation Areas~~~~Wildlife Habitat~~. The purpose of the report is to determine the extent, function and value of wildlife habitat on any site where regulated activities are proposed. The report will also be used by the City to determine the sensitivity and appropriate classification of the habitat or stream rating designation, appropriate buffering requirements, and potential impacts of proposed activities. The information required by this report should be coordinated with the study and reporting requirements for any other sensitive area located on the site.

In addition to the general critical area report requirements of MTMC 16.15.200, critical area reports must meet the requirements of this section.

For streams, the edge of the channel migration zone; ordinary high water mark; top of the stream bank; or stream centerline (in order of preference as data is available) shall be flagged in field by a qualified professional. Field flagging must be distinguishable from other survey flagging on the site. The field flagging must be accompanied by a Critical Area Report.

1. The report shall include the following information:

a. Vicinity map;

b. The site designated on the City's Critical Area Map

~~bc.~~ A map at an appropriate engineering scale such that information shown is not cramped or illegible. Generally, a scale of one inch equals 40 feet or greater (such as one inch equals 20 feet) should be used. Existing features must be distinguished from proposed features. The map must show:

i. Site boundary property lines and roads;

ii. Internal property lines, rights-of-way, easements, etc.;

iii. Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;

iv. Contours at the smallest readily available intervals, preferably at five-foot intervals;

v. For large and/or complex projects, an air photo with overlays displaying the site boundaries and wetland delineation may be required. Generally, an orthophotograph at a scale of one inch equals 400 feet or greater (such as one inch equals 200 feet) should be used. If an orthophotograph is not available, the center of a small scale (e.g., one inch equals 2,000 feet) aerial photograph enlarged to one inch equals 400 feet may be used;

vi. A map of vegetative cover types, reflecting the general boundaries of different plant communities on the site;

vii. A description of the species typically associated with the cover types, including an identification of any critical wildlife species that might be expected to be found and habitat corridors that might connect these species;

viii. The results of searches of DNR's Natural Heritage and Non-Game Data System databases; and

- ix. The result of searches of the WDFW Priority Habitat and Species database.
- x. For streams, the map shall show:
 - (A) Approximate locations of all streams on the property;
 - (B) Hydrologic mapping showing patters of water movement into, through, and out of the site area
- ed. The report must describe:
 - i. Locational information including legal description and address;
 - ii. All natural and manmade features within 150 feet of the site boundary;
 - iii. General site conditions including topography, acreage, and hydrology, water bodies or wetlands;
 - iv. Identification of any areas that have previously been disturbed or degraded by human activity or natural processes;
 - v. The layers, diversity and variety of habitat found on the site;
 - vi. Identification of edges between habitat types and any species commonly associated with that habitat;
 - vii. The location of any migration or movement corridors; and
- viii. A narrative summary of existing habitat functions and values. The analysis shall use a habitat evaluation procedure or methodology approved by the department.

- ix. Reports for streams must include:
 - (A) Specific descriptions of streams, including gradient and flow characteristics, stream bed condition, stream bank and slope stability, presence of fish or habitat for fish, presence of obstructions to fish movement, general water quality, and stream bank vegetation;
 - (B) A summary of existing stream value for fisheries habitat;
 - a.(C) Where degraded streams and stream buffers occur, provide a restoration plan for degraded areas.
- de. A summary of proposed habitat and buffer alterations, impacts and mitigation, and the need for alterations as proposed. Potential impacts may include but are not limited to clearing of vegetation, fragmentation of wildlife habitat, expected decreases in species diversity or quantity, changes in water quality, increases in human intrusion, and impacts on wetlands or water resources such as stream bed and stream bank alterations and alterations of fisheries habitat.
- ef. The level of detail contained in the report shall generally reflect the size and complexity of the proposal and the function and value of the habitat. The Department may require field studies in appropriate cases.

D. Alteration of Wildlife Habitat Areas.

~~1. Critical Wildlife Habitat. Alterations of critical habitat shall be avoided, subject to the reasonable use and/ or variance provisions of this chapter.~~

~~2. Secondary Habitat. Alterations of secondary habitat may be permitted; provided, that the applicant mitigates adverse impacts consistent with the mitigation performance standards of subsection E of this section.~~

E. Streams.

~~A. Streams are those areas where surface waters produce a defined channel or bed. A defined channel or bed is an area which demonstrates clear evidence of the passage of water and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds, and defined channel swales. The channel or bed need not contain water year round. This definition is not intended to include artificially created irrigation ditches, canals, storm or surface water devices or other entirely artificial watercourses unless they are used by salmonids or created for the purposes of stream mitigation.~~

~~1. B.~~ Classification and Rating of Streams. Streams shall be classified pursuant to WAC 222-16-030, Water typing system. When more than one stream type is present on a subject property (e.g., the stream changes character in short alternating segments), it will be classified according to the stream class present along the majority of the length within a given section. The stream class shall change at the point at which the majority of the length receives a different classification.

~~a.~~—The waters will be classified using the following criteria:

~~1. “Type S water” means all waters, within their bankfull width, as inventoried as “shorelines of the state” under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW, including periodically inundated areas of their associated wetlands.~~

~~b. 2. “Type F water” means segments of natural waters other than Type S waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands, or within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat or are described by one of the following four categories:~~

~~e. a. Waters which are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;~~

~~d. b. Waters which are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F water upstream from the point of diversion for 1,500 feet, including tributaries if highly significant for protection of downstream water quality. The Department may allow additional harvest beyond the requirements of Type F water designation, provided the Department determines after a landowner requested on-site assessment by the Department of Fish and Wildlife, Department of Ecology, the affected tribes and interested parties that:~~

~~e. i. The management practices proposed by the landowner will adequately protect water quality for the fish hatchery; and~~

~~f. ii. Such additional harvest meets the requirements of the water type designation that would apply in the absence of the hatchery;~~

~~g. c. Waters which are within a federal, state, local, or private campground having more than 10 camping units; provided, that the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;~~

~~h. d. Riverine ponds, wall based channels, and other channel features that are used by fish for off channel habitat. These areas are critical to the maintenance of optimum survival of fish. This habitat shall be identified based on the following criteria:~~

~~i. i. The site must be connected to a fish habitat stream and accessible during some period of the year; and~~

~~j. ii. The off channel water must be accessible to fish.~~

~~k. 3. "Type Np water" means all segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of a year of normal rainfall and include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow.~~

~~4. "Type Ns water" means all segments of natural waters within the bankfull width of defined channels that are not Type S, F, or Np waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np water. Ns waters must be physically connected by an above-ground channel system to Type S, F, or Np waters.~~

<u>Water Type Classifications using DNR's water typing system</u>	
<u>Type</u>	<u>Description</u>
<u>Type S</u> <u>(Shoreline)</u>	<u>All waters, within their bankfull width, as inventoried as "shorelines of the state" under chapter 90.58 RCW and the rules promulgated pursuant to chapter 90.58 RCW including periodically inundated areas of their associated wetlands. MTMC 16.10 regulations apply.</u>
<u>Type F</u> <u>(Fish)</u>	<u>Segments of natural waters other than Type S Waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands, or within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat or are described by one of the following four categories:</u> <u>1. Waters, which are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F Water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;</u> <u>2. Waters, which are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F Water upstream from the point of diversion for 1,500 feet, including tributaries if highly significant for protection of downstream water quality. The department may allow additional harvest beyond the requirements of Type F Water designation provided the department determines after a landowner-requested on-site assessment by the department of fish and wildlife, department of ecology, the</u>

	<u>affected tribes and interested parties that:</u> i. <u>The management practices proposed by the landowner will adequately protect water quality for the fish hatchery; and</u> ii. <u>Such additional harvest meets the requirements of the water type designation that would apply in the absence of the hatchery;</u> 3. <u>Waters, which are within a federal, state, local, or private campground having more than 10 camping units: Provided, That the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;</u> 4. <u>Riverine ponds, wall-based channels, and other channel features that are used by fish for off-channel habitat. These areas are critical to the maintenance of optimum survival of fish. This habitat shall be identified based on the following criteria:</u> i. <u>The site must be connected to a fish habitat stream and accessible during some period of the year; and</u> ii. <u>The off-channel water must be accessible to fish.</u>
<u>Type Np</u> <u>(Non-Fish)</u>	<u>All segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of a year of normal rainfall and include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow.</u>
<u>Type Ns</u> <u>(Non-Fish Seasonal)</u>	<u>All segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters.</u>

2. Mapping. The approximate location of streams is shown on the adopted critical areas maps, pursuant to MTMC 16.15.080. The exact location and classification shall be determined through field investigation by a qualified professional applying the applicable manuals adopted by this chapter.

3. Stream Buffer Areas and Setbacks.

a. 1. General Provisions. The establishment of buffers, ~~buffer areas or setbacks~~ shall be required for all development proposals and activities in or adjacent to ~~critical areas~~streams. ~~The purpose of the buffer shall be to protect the integrity, function and value of the subject critical area (wetlands, streams, and wildlife habitat areas), and/or to protect life, property and resources from risks associated with development on unstable or critical lands (geologic hazard areas, flood hazard areas, aquifer recharge).~~ Buffers shall typically consist of an undisturbed area of native vegetation. ~~No buildings or structures shall be allowed unless otherwise permitted by this chapter.~~ If the site has previously been disturbed, the buffer area shall be revegetated, pursuant to an approved enhancement plan.

b. Unless otherwise provided, buildings and other structures shall be set back from the edge of the stream buffer per the table below in this section. The following may be allowed in the building setback area:

- i. Building overhangs, if such overhangs do not extend more than 24 inches into the setback area; and
- ii. Impervious ground surfaces, such as driveways and patios; provided, that such improvements may be subject to water quality regulations, pursuant to City stormwater regulations.

c. Buffers shall be protected during construction by placing a temporary barricade, posting notice of the presence of the critical area, and implementing appropriate erosion and sedimentation controls. Restrictive covenants or conservation easements may be required to provide long-term preservation and protection of buffer areas.

~~2. Required Buffer Widths. Required buffer widths shall reflect the sensitivity of the particular critical area or the risks associated with development. In those circumstances permitted by these regulations, the type and intensity of human activity proposed to be conducted on or near the critical area should also be considered. Buildings shall be set back a minimum of 15 feet from the edge of the buffer. Buffers shall be measured as follows:~~

d. Stream Buffers. The buffer shall be measured from the edge of the channel migration zone (CMZ) (preferred) or ordinary high water mark (OHWM) where a channel migration zone is not present. If neither the CMZ or OHWM can be identified, the buffer shall be measured from the top of the bank if the if the ordinary high water mark cannot be identified.

~~1.e. The following table below contains~~ minimum buffers ~~are established~~ for streams:

Water Type	Description	Minimum Buffer Width (in Feet)	Additional Buffer for Threatened or Endangered Species (in Feet)	Building Setback (in Feet)
S	Shoreline of the state (Per RCW 90.58.030)	150	75	15
S	Shoreline of the state (per RCW 90.58.030)	See MTMC 16.10		
F	Defined channel and periodically inundated areas	150100	50	1510
Np	Perennial	10050	0 (no anadromous fish)	1510
Ns	Seasonal	100Determined based on review of technical information	0 (no anadromous fish)	1510
–	Intermittent streams			

- i. The buffer widths in the table above assume the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer does not meet vegetative buffer standards, is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer must either be densely planted to create the appropriate native plant community or be widened by 33 percent to ensure that the buffer provides adequate functions to protect the stream.
 - (A) To meet vegetative buffer standards, the stream buffer must contain at least an average of 80 percent native plant cover, and noxious weed cover cannot exceed 10 percent. The native cover must include tree, shrub and groundcover strata in proportions that mimic native forest.
 - ii. For interrupted buffer regulations, see MTMC 16.15.100(B)(5).
 - iii. Legally established buffer. Where a buffer has been previously established on a legally created parcel or tract that was legally established according to the regulations in place at the time of establishment and is permanently recorded on title or placed within a separate tract, and the parcels that are included on the plat at the time of recording of the subject parcel or tract, then the buffer shall remain as previously established, provided:
 - (A) It is equal to or greater than 50 percent of the required standard buffer distance for the applicable stream category; and
 - (B) Meets vegetative buffer standards above; and
 - (C) Impact minimization measures are applied.
- f. The buffer widths required in this section are minimums, ~~except as provided below~~, and may be increased by the Department in response to site-specific conditions and based on the information submitted to characterize the functions and values of the stream.
- g. A stream buffer width greater than the minimum may be required by the Department based on the findings of site-specific studies.
- h. The applicant shall implement the enhancement measures, listed below, when developing or redeveloping a site that contains a stream or stream buffer:
 - i. Removal of fish barriers to restore accessibility to anadromous fish;
 - ii. Enhancement of fish habitat using log structures incorporated as part of a fish habitat enhancement plan;
 - iii. Upgrading retention/detention facilities or other drainage facilities to required levels;
 - iv. Manage stormwater following latest Ecology manual;
 - v. Stormwater retrofit is required for redevelopment projects; or
 - vi. Similar measures determined applicable by the Department.
- i. The applicant may propose to implement one or more enhancement measures, listed below, ~~when developing or redeveloping a site that contains a stream or stream buffer; which may be considered in establishing buffer requirements under subsection (D)(2)(c) or (D)(2)(g) of this section; Removal of fish barriers to restore accessibility to anadromous fish; Enhancement of fish habitat using log structures incorporated as part of a fish habitat enhancement plan;~~

- i. Landscaping outside the buffer area with native vegetation or a reduction in the amount of clearing outside the buffer area;
 - ii. Planting native vegetation within the buffer area, especially vegetation that would increase value for fish and wildlife, increase stream bank or slope stability, improve water quality, or provide aesthetic/recreational value;
 - iii. Creating a surface channel where a stream was previously culverted or piped;
 - iv. Removing or modifying existing stream culverts (such as at road crossings) to improve fish passage and flow capabilities which are not detrimental to fish;
 - v. Upgrading retention/detention facilities or other drainage facilities beyond required levels; ~~or~~
 - vi. Maintain and restore in-stream connectivity; or
 - vii. Similar measures determined applicable by the Department.
- j. No structures or improvements shall be permitted within the stream buffer area, including buildings, decks, and docks, except as otherwise permitted under one of the following circumstances:
- i. When the improvements are part of an approved enhancement, restoration or mitigation plan; or
 - ii. For construction of new public roads and utilities, and accessory structures, when no feasible alternative location exists; or
 - iii. Construction of foot trails, according to the following criteria:
 - (A) Constructed of permeable materials;
 - (B) Designed to minimize impact on the stream system;
 - (C) Of a maximum width of eight feet;
 - (D) Located within the outer half of the buffer, i.e., the portion of the buffer that is farther away from the stream; or
 - iv. Construction of footbridges with climate- resilient measures; or
 - ~~m.v.~~ Construction of educational facilities, such as viewing platforms and informational signs.
~~f. The Department may permit stream buffer widths to be averaged for segments of Type S, F, Np and Ns streams based on the findings of the stream report, subject to the following criteria: stream functions will not be reduced; fish habitat will not be adversely affected; additional enhancement of habitat is provided in conjunction with the reduced buffer; the buffer is not reduced more than 25 percent in any location; and the total buffer area after averaging is not less than what would be contained in the standard buffer. For averaging purposes, stream buffer widths shall be calculated based only on the stream segment located on the parcel being developed.~~

~~Stream buffer width on a site with existing or prior commercial development that has a legal nonconforming buffer and is proposed for redevelopment with improvements that will increase the economic viability of the development, notwithstanding the provisions of MTMC 19.120.250, may be reduced by up to 25 percent if an applicant undertakes measures approved by the Department to enhance or restore the buffer; provided, that best available science indicates such measures are likely to~~

~~enhance the functions and values of the buffer compared to existing conditions. The restoration or enhancement measures may include, but are not limited to, those measures listed in subsection (D)(2)(d) of this section~~

~~4.~~ 4. ~~Long-Term Protection of Streams and Buffers Required.~~ A regulated stream and its associated buffer shall be protected by recording a notice on title, pursuant to MTMC 16.15.250, and can occur by one of the following methods: placing in a separate critical tract on which development is prohibited; protected by execution of an easement; dedicated to a conservation organization or land trust; or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the stream and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with Snohomish County.

~~n.5. E.~~ 5. E. ~~Buffer Width Variances.~~ A “minor critical area buffer width variance,” defined as up to and including 10 percent of the standard requirement per subsection D of this section, Stream Buffer Areas and Setbacks, may be granted by the Hearing Examiner, pursuant to MTMC 16.15.350, Variances, and the mitigation to achieve the proposed variance results in a higher functional system and values than mitigation would otherwise provide ~~commensurate with the replacement ratios.~~

~~o.~~ F. ~~Critical Area Report Requirements—Streams.~~

~~p.~~ 1. ~~The purpose of the report is to determine the physical and biological characteristics of streams on any site where regulated activities are proposed. The report will also be used by the City to determine the appropriate stream rating designation and buffering requirement for the stream. The information required for this report should be coordinated with the study and reporting requirements established for any other sensitive areas located on the site.~~

~~q.~~ In addition to the general critical area report requirements of MTMC 16.15.200, critical area reports must meet the requirements of this section.

~~r.~~ 2. ~~Stream banks (or stream centerline) should be flagged in the field by a qualified consultant. Field flagging must be distinguishable from other survey flagging on the site. The field flagging must be accompanied by a stream reconnaissance report. The report shall include the following information:~~

~~s.~~ a. ~~Vicinity map;~~

~~t.~~ b. ~~Site designated on a City of Mountlake Terrace stream inventory map;~~

~~u.~~ c. ~~Streams shall be located approximately on a site map at an appropriate engineering scale such that information shown is not cramped or illegible. Generally, a scale of one inch equals 40 feet or greater (such as one inch equals 20 feet) should be used. Existing features must be distinguished from proposed features. The map must show:~~

~~v.~~ i. ~~Site boundary property lines and roads;~~

~~w.~~ ii. ~~Internal property lines, rights of way, easements, etc.;~~

~~x.~~ iii. ~~Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;~~

~~y.~~ iv. ~~Contours at the smallest readily available intervals, preferably at five foot intervals;~~

~~z.~~ v. ~~Approximate locations of all streams on the property;~~

~~aa.~~ vi. ~~Hydrologic mapping showing patterns of water movement into, through, and out of the site area; and~~

~~bb.~~ vii. ~~For large and/or complex projects, an air photo with overlays displaying the site boundaries and stream locations may be required. Generally, an orthophotograph at a scale of one inch equals 400 feet or greater (such as one inch equals 200 feet) should be used. If an orthophotograph is not available, the center of a small scale (e.g., one inch equals 2,000 feet) aerial photograph enlarged to one inch equals 400 feet may be used.~~

~~cc.~~ d. ~~The report must describe:~~

~~dd.~~ i. ~~Locational information including legal description and address;~~

~~ee.~~ ii. ~~All natural and manmade features within 150 feet of the site boundary;~~

~~ff.~~ iii. ~~General site conditions including topography, acreage, and area hydrology;~~

~~gg.~~ iv. ~~Specific descriptions of streams, including gradient and flow characteristics, stream bed condition, stream bank and slope stability, presence of fish or habitat for fish, presence of obstructions to fish movement, general water quality, and stream bank vegetation;~~

~~hh.~~ v. ~~A summary of existing stream value for fisheries habitat; and~~

~~ii.~~ vi. ~~A summary of proposed stream and buffer alterations, impacts, and the need for the alterations as proposed. Potential impacts may include but are not limited to vegetation removal, stream bed and stream~~

~~bank alterations, alteration of fisheries habitat, changes in water quality, and increases in human intrusion. If alteration of a stream is proposed, a stream mitigation plan is required per this section.~~

6. ~~G.~~ Alteration or Development of Stream Areas.

a. ~~1.~~ General Provisions.

- i. ~~a.~~ Alteration of a stream and/or its established buffer may be permitted by the Department subject to the provisions and criteria of this section.

- ii. ~~b.~~ Standards for mitigation of impacts are subject to subsection ~~16.15.420(E)(H of this section 7)~~, and with mitigation for critical areas in general as identified in MTMC 16.15.210 through 16.15.240. The mitigation plan shall satisfy performance standards per ~~subsectection IMTMC 16.15.420(E)(8)~~ of this section, as applicable.

b. ~~2.~~ Relocation of a Stream.

~~ii. a. Relocation of a Type S stream shall be prohibited.~~

- i. ~~b.~~ Relocation of ~~other Type F, Np, Ns~~ streams may take place only when it is part of an approved mitigation or enhancement or restoration plan, will result in equal or better habitat and water quality, and will not diminish the flow capacity of the stream.

- ii. ~~e.~~ Relocation of a Type F, Np, or Ns stream exclusively to facilitate general site design shall not be permitted.

c. ~~3.~~ Stream Crossings.

~~a. Bridges shall be used to cross Type S streams. Boring/micro tunneling may be considered for utility crossings if it would result in the same or lower impacts as bridging.~~

- i. ~~b.~~ Culverts must be designed with climate-resilient measures and are allowable only under the following circumstances:

(A) ~~i.~~ Only in Type F, Np, or Ns streams;

(B) ~~ii.~~ When fish passage will not be impaired;

(C) ~~iii.~~ When the following design criteria are met:

a. ~~(A)~~ Oversized culverts will be installed;

b. ~~(B)~~ Culverts will include gradient controls and creation of pools within the culvert for Type F streams

c. ~~(C)~~ Gravel substrate will be placed in the bottom of the culvert to a minimum depth of one foot for Type F or Np streams;

(D) ~~iv.~~ The applicant or successors shall, at all times, keep any culvert free of debris and sediment to allow free passage of water and, if applicable, fish.

- ii. ~~e.~~ The City may require that a culvert be removed from a stream as a condition of approval, unless the culvert is not detrimental to fish habitat or water quality, or removal would be a long-term detriment to fish or wildlife habitat or water quality.

7. ~~H.~~ Mitigation Requirements. Mitigation, when applicable or required, shall be implemented consistent with sections MTMC 16.15.210 through 16.15.240, and any other applicable mitigation provisions in ~~this section~~ MTMC 16.15.420(F), including the specific performance standards per ~~subsectection IMTMC 16.15.420(E)(6)~~ of this section.

~~Mitigation projects should be completed immediately following disturbance and prior to use or occupancy.~~

~~of the action or development. Construction of mitigation projects shall be timed to reduce impacts to existing fisheries, wildlife, and flora.~~

~~a.8.~~ 1. Performance Standards for Stream Mitigation Plans. The performance standards in this subsection shall be incorporated into performance standard requirements set forth in MTMC 16.15.230.

~~jj.a.~~ 1. Use plants native to the Puget Lowlands. Nonnative, introduced plants or plants listed by the Washington State Department of Agriculture as noxious weeds (Chapter 16-750 WAC) shall not be used;

~~kk.b.~~ 2. Use plants adapted to and appropriate for the proposed habitats and consider the ecological conditions known or expected to be present on the site;

~~ll.c.~~ 3. Avoid planting significant areas of the site with species that have questionable potential for successful establishment, such as species with a narrow range of habitat tolerances;

~~mm.d.~~ 4. Specify plants that are commercially available from native-plant nurseries or available from local sources; if collecting some or all native plants from donor sites, collect in accordance with ecologically accepted methods, such as those described in the Washington Native Plant Society's Policy on Collection and Sale of Native Plants, that do not jeopardize the survival or integrity of donor plant populations;

~~nn.e.~~ 5. Use perennial plants in preference to annual species;

~~oo.f.~~ 6. Use plant species high in food and cover value for native fish and wildlife species that are known or likely to use the mitigation site (according to reference wetlands, published information, and professional judgment);

~~pp.g.~~ 7. Install a temporary irrigation system and specify an irrigation schedule unless a sufficient naturally occurring source of water is demonstrated;

~~qq.h.~~ 8. For stream substrate, at least one foot of clean inorganic and/or organic materials, such as cobble, gravel, sand, silt, clay, muck, or peat as appropriate shall be ensured. The stream substrate soils shall be free from solid, dangerous, or hazardous substances as defined by Chapter 70.105 RCW and implementing rules;

~~rr.i.~~ 9. Confine temporary stockpiling of soils to upland areas. Unless otherwise approved by the Department, comply with all applicable best management practices for clearing, grading, and erosion control to protect any nearby surface waters from sediment and turbidity;

~~ss.j.~~ 10. Show densities and placement of plants; these should be based on the ecological tolerances of species proposed for planting, as determined by a qualified professional;

~~tt.k.~~ 11. Provide sufficient specifications and instructions to ensure proper placement diversity and spacing of seeds, tubers, bulbs, rhizomes, springs, plugs, and transplanted stock and other habitat features, to provide a high probability of success, and to reduce the likelihood of prolonged losses of stream functions from proposed development. Prepare contingency plans for all mitigation proposals;

~~uu.l.~~ 12. Do not rely on fertilizers and herbicides to promote establishment of plantings; if fertilizers are used, they must be applied per manufacturer specifications to planting holes in organic or time-release forms, such as Osmocote® or comparable formulations, and never broadcast on the ground surface; if herbicides are used to control invasive species or noxious weeds and to help achieve performance standards, only those approved for use in aquatic ecosystems by the Washington Department of Ecology shall be used; herbicides shall only be used in conformance with all applicable laws and regulations and be applied per manufacturer specifications by an applicator licensed in the state of Washington;

~~vv.m.~~ 13. Include the applicant's mitigation plan qualified professional in the construction process to ensure the approved mitigation plan is completed as designed. At a minimum, the

qualified professional's participation will include site visits to inspect completed rough and final grading, installation of in-water or other habitat structures, and to verify the quality and quantity of native plant materials before and after installation; and

~~www.n.~~ ~~14.~~ During construction, place temporary markers, signs and/or fencing around the perimeter of the critical area, where practical and applicable to particular critical areas.

~~J. Stream Protection. Protective covenants shall be provided, pursuant to MTMC 16.15.250 and 16.15.270. (Ord. 2731 § 2 (Exh. A), 2018).~~

~~EF.~~ Mitigation of Wildlife Habitat. When applicable or required, mitigation plans for impacts to wildlife habitat shall be prepared and implemented consistent with MTMC 16.15.210 through 16.15.240, together with the standards in this section. Mitigation projects should be completed prior to activities that will disturb habitat. At the very least, mitigation shall be completed immediately following disturbance and prior to use or occupancy of the action or development. Construction of mitigation projects shall be timed to reduce impacts to existing fisheries, wildlife, and flora.

1. Preserve significant or existing native trees, preferably in stands or groups;
2. Wherever possible, retain and consolidate ~~critical-priority~~ habitats into larger, unfragmented, contiguous blocks;
3. Use native plant species adapted to and appropriate for the proposed habitats, and consider the ecological conditions known or expected to be present on the site;
4. Avoid planting significant areas with species that have questionable potential for successful establishment, such as species with a narrow range of habitat tolerances;
5. Specify plants that are commercially available from native-plant nurseries or available from local sources; if collecting some or all native plants from donor sites, collect in accordance with ecologically accepted methods, such as those described in the Washington Native Plant Society's Policy on Collection and Sale of Native Plants, that do not jeopardize the survival or integrity of donor plant populations;
6. Use perennial plants in preference to annual species;
7. Use plant species high in food and cover value for native fish and wildlife species that are known or likely to use the mitigation site (according to reference wetlands, published information, and professional judgment);
8. Install a temporary irrigation system and specify an irrigation schedule unless a sufficient naturally occurring source of water is demonstrated;
9. Confine temporary stockpiling of soils to upland areas. Unless otherwise approved by the department, comply with all applicable best management practices for clearing, grading, and erosion control to protect any nearby surface waters from sediment and turbidity;
10. Show densities and placement of plants; these should be based on the ecological tolerances of species proposed for planting, as determined by a qualified professional;
11. Provide sufficient specifications and instructions to ensure proper placement diversity and spacing of plant material, to provide a high probability of success;
12. Include the applicant's mitigation plan qualified professional in the construction process to ensure the approved mitigation plan is completed as designed. At a minimum, the qualified professional's participation will include site visits to inspect completed rough and final grading, installation of in-water or other habitat structures, and to verify the quality and quantity of native plant materials before and after installation;

13. Create habitat heterogeneity and structural diversity that emulates native plant communities described in Natural Vegetation of Oregon and Washington (Franklin, J.F. and C.T. Dyrness 1988) or other regionally recognized publications on native landscapes;

14. Remove and/or control any noxious weeds or exotic animals which are problematic to the ~~critical~~-priority habitat area; and

15. On completion of construction, any approved mitigation project must be signed off by the applicant's qualified professional and approved by the Director. Signature will indicate that the construction has been completed as approved.

~~F-G~~ Monitoring Fish and Wildlife Habitat Conservation Areas. Maintenance and monitoring is required per MTMC 16.15.240.

H. Wildlife Habitat Protection. Protective covenants shall be provided, pursuant to MTMC 16.15.250 and 16.15.270. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.430 Geologic hazard area.

A. Geologic Hazard Classifications. Geologic hazard areas shall be classified according to the criteria in this section.

1. Critical Erosion Hazard Areas. ~~“Critical erosion hazard areas” are lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resource Conservation Service, previously known as the Soil Conservation Service (SCS), as having “severe” or “very severe” erosion hazards. This includes the following group of soils when they occur on slopes of 15 percent or greater: Alderwood-Kitsap (AkF), Alderwood-gravelly sandy loam (AgD), Kitsap silt loam (KpD), Everett (EvD) and Indianola (InD). Lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resource Conservation Service as having “severe” or “very severe” erosion hazards. Erosion hazards also include channel migration zones. Erosion hazard areas include areas likely to become unstable, such as bluffs, steep slopes, and areas with unconsolidated soils.~~

2. Landslide Hazard Areas.

a. Areas at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors. They include any areas susceptible to landslide because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other factors, and include, at a minimum, the following:

i. Areas of historic failures designated as quaternary slumps, earthflows, mudflows, or landslides on maps published by the United States Geological Survey or Washington department of natural resources, including but not limited to the 2022 Landslide Inventory of Portions of Snohomish County, Washington (Mickelson).

ii. Slopes that are parallel or subparallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;

iii. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action, including stream channel migration zones;

iv. ~~“Landslide hazard areas” a~~ Areas classified as “Class I,” “Class II,” “Class III” or “Class IV” as follows:

(A) Class II/Moderate Hazard. Areas with slopes of between 15 percent and 40 percent and that are underlain by soils that consist largely of sand, gravel or glacial till.

(B) Class III/High Hazard. Areas with slopes between 15 percent and 40 percent that are underlain by soils consisting largely of silt and clay.

(C) Class IV/Very High Hazard. Areas with slopes steeper than 15 percent with mappable zones of emergent water (e.g., springs or ground water seepage), areas of known (mappable) landslide deposits regardless of slope, and all areas with slopes 40 percent or greater.

v. 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.

a.—

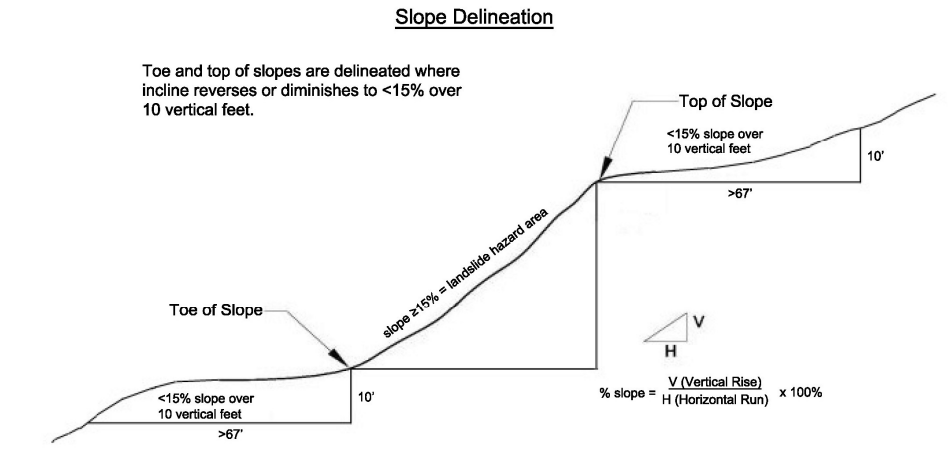
a. Class I/Low Hazard. Areas with slopes of 15 percent or less.

b. Class II/Moderate Hazard. Areas with slopes of between 15 percent and 40 percent and that are underlain by soils that consist largely of sand, gravel or glacial till.

c. Class III/High Hazard. Areas with slopes between 15 percent and 40 percent that are underlain by soils consisting largely of silt and clay.

d. Class IV/Very High Hazard. Areas with slopes steeper than 15 percent with mappable zones of emergent water (e.g., springs or ground water seepage), areas of known (mappable) landslide deposits regardless of slope, and all areas with slopes 40 percent or greater.

Figure 16.15.430(2)



3. Seismic Hazard Areas. "Seismic hazard areas" are lands that, due to a combination of soil and ground water conditions, are subject to severe risk of ground shaking, subsidence or liquefaction of soils during earthquakes. These areas are typically underlain by soft or loose saturated soils (such as alluvium), have a shallow ground water table and are typically located on the floors of river valleys.

B. Buffer Areas and Setbacks.

1. Required buffer widths and setbacks shall reflect the sensitivity of the particular geologic hazard and the risks associated with development. The type and intensity of human activity proposed on, or near, the geologic hazard area should also be considered. In determining the appropriate buffer width, the Department shall consider the standards of this section and recommendations contained in any technical reports required by this chapter.

2. Minimum standards include:

- a. Buffers shall be measured from the top and toe and along the sides of the geologically hazardous slope.
- b. The minimum required buffers width from a critical geologic hazard shall be 30 feet. The buffer width may be increased when the geotechnical report recommends. The buffer width may also be reduced when

the applicant demonstrates, through technical studies, that the reduction will still adequately protect the geologic hazard and the proposed development, in view of proposed engineering techniques.

c. Buildings and structures shall be set back a minimum of 15 additional feet from the edge of the buffer.

3. Buffers shall typically consist of an undisturbed area of native vegetation. No buildings or structures shall be allowed unless otherwise permitted by this chapter. If the site has previously been disturbed, the buffer area shall be revegetated, pursuant to an approved enhancement plan.

4. Buffers shall be protected during and after construction per MTMC 16.15.260, as applicable.

C. Alterations. Alteration of geologic hazard areas may be permitted by the Director, subject to the criteria of this section.

1. General Standard. The City may approve, condition or deny proposals for the alteration of geologic hazard areas based on the degree to which significant risks posed by critical hazard areas to public and private property and to public health and safety can be mitigated. The objective of mitigation measures shall be to render a site containing a critical geologic hazard site as safe as one not containing such hazard or one characterized by a low hazard. In appropriate cases, conditions may include limitations of proposed uses, modification of density, alteration of site layout and other appropriate changes to the proposal. Where potential impacts cannot be effectively mitigated, or where the risk to public health, safety and welfare, public or private property, or important natural resources is significant notwithstanding mitigation, the proposal shall be denied, unless permitted as a reasonable use exception under MTMC 16.15.360.

2. Class IV Landslide Hazard Areas. Alteration shall be prohibited in Class IV (very high) landslide hazard areas, subject to the reasonable use provisions of this chapter.

3. Critical Seismic Hazard Areas.

a. For one-story and two-story residential structures, the applicant shall conduct an evaluation of site response and liquefaction potential based on the performance of similar structures under similar foundation conditions; and

b. For all other proposals, the applicant shall conduct an evaluation of site response and liquefaction potential including sufficient subsurface exploration to provide a site coefficient (S) for use in the static lateral force procedure described in the International Building Code.

4. When development is permitted in geologic hazard areas by these regulations, an applicant and/or its qualified professional shall provide assurances which, at the City's discretion, may include one or more of the following:

a. A letter from the geotechnical engineer and/or geologist who prepared the studies required by these regulations that risks of damage from the proposal, both on site and off site, are minimal subject to the conditions set forth in the report, that the proposal will not increase the risk of occurrence of the potential geologic hazard, and that measures to eliminate or reduce risks have been incorporated into its recommendations;

b. A letter from the applicant, or the owner of the property if not the applicant, stating an understanding and acceptance of any risk of injury or damage associated with development of the site and agreeing to notify any future purchasers of the site, portions of the site, or structures located on the site of the geologic hazard;

c. A legally enforceable hold harmless agreement, which shall be recorded as a covenant and noted on the face of the deed or plat, and executed in a form satisfactory to the City, acknowledging that the site is located in a geologic hazard area; the risks associated with development of such site; and a waiver and release of any and all claims of the owner(s), their directors, employees, successors or assigns against the City of Mountlake Terrace for any loss, damage or injury, whether direct or indirect, arising out of issuance of development permits for the proposal; and

- d. Posting of a guarantee, bond, or other assurance device approved by the City, to cover the cost of monitoring, maintenance and any necessary corrective actions.

D. Critical Area Report Requirements – Geotechnical. In addition to the basic critical area report requirements, per MTMC 16.15.200, the technical information for an erosion hazard or landslide hazard area shall include the following information at a minimum:

1. Site Plan. The critical area report shall include a copy of the site plan for the proposal showing:
 - a. The height of slope, slope gradient, and cross-section of the project area;
 - b. The location of springs, seeps, or other surface expressions of ground water on or within 200 feet of the project area or that have potential to be affected by the proposal;
 - c. The location and description of surface water runoff features.
2. Hazards Analysis. The hazards analysis component of the critical area report shall specifically include:
 - a. A description of the extent and type of vegetative cover;
 - b. A description of subsurface conditions based on data from site-specific explorations;
 - c. Descriptions of surface and ground water conditions, public and private sewage disposal systems, fills and excavations, and all structural improvements;
 - d. An estimate of slope stability and the effect construction and placement of structures will have on the slope over the estimated life of the structure;
 - e. An estimate of the bluff retreat rate that recognizes and reflects potential catastrophic events such as seismic activity or a 100-year ~~storm-flood~~ event;
 - f. Consideration of the run-out hazard of landslide debris and/or the impacts of landslide run-out on down-slope properties;
 - g. A study of slope stability including an analysis of proposed cuts, fills, and other site grading;
 - h. An assessment of cumulative impacts;
 - i. Recommendations for building siting limitations;
 - j. An analysis of proposed surface and subsurface drainage, and the vulnerability of the site to erosion; and
 - k. The location and description of surface water runoff features.
3. Geotechnical Engineering Report. The technical information for a project within a landslide hazard area shall include a geotechnical engineering report prepared by a licensed engineer that presents engineering recommendations for the following:
 - a. Parameters for design of site improvements including appropriate foundations and retaining structures. These should include allowable load and resistance capacities for bearing and lateral loads, installation considerations, and estimates of settlement performance;
 - b. Recommendations for drainage and subdrainage improvements;
 - c. Earthwork recommendations including clearing and site preparation criteria, fill placement and compaction criteria, temporary and permanent slope inclinations and protection, and temporary excavation support, if necessary; and

d. Mitigation of adverse site conditions including slope stabilization measures and seismically unstable soils, if appropriate.

4. Erosion and Sediment Control Plan. For any development proposal on a site containing an erosion hazard area, an erosion and sediment control plan shall be required. The erosion and sediment control plan shall be prepared in compliance with requirements set forth in the City codes, regulations and standards.

5. Drainage Plan. The technical information shall include a drainage plan for the collection, transport, treatment, discharge, and/or recycling of water prepared in accordance with City codes, regulations and standards. The drainage plan should consider on-site septic system disposal volumes where the additional volume will affect the erosion or landslide hazard area.

6. Mitigation Plans. Hazard and environmental mitigation plans for erosion and landslide hazard areas shall include the location and methods of drainage, surface water management, locations and methods of erosion control, a vegetation management and/or replanting plan, and/or other means for maintaining long-term soil stability.

7. Monitoring Surface Waters. If the Director determines that there is a significant risk of damage to downstream receiving waters due to potential erosion from the site, based on the size of the project, the proximity to the receiving waters, or the sensitivity of the receiving waters, the technical information shall include a plan to monitor the surface water discharge from the site. The monitoring plan shall include a recommended schedule for submitting monitoring reports to the City.

8. Seismic Hazard Areas. In addition to the basic geologic report requirements, a critical area report for a seismic hazard area shall also meet the following requirements:

a. The site map shall show all known and mapped faults within 200 feet of the project area or that have potential to be affected by the proposal.

b. The hazards analysis shall include a complete discussion of the potential impacts of seismic activity on the site (for example, forces generated and fault displacement).

c. A geotechnical engineering report shall evaluate the physical properties of the subsurface soils, especially the thickness of unconsolidated deposits and their liquefaction potential. If it is determined that the site is subject to liquefaction, mitigation measures appropriate to the scale of the development shall be recommended and implemented.

d. For one- and two-story single-family structures, conduct an evaluation of site response and liquefaction potential based on the performance of similar structures under similar foundation conditions.

e. For all other proposals, conduct an evaluation of site response and liquefaction potential including sufficient subsurface exploration to provide a site coefficient (S) for use in the static lateral force procedure described in the Uniform Building Code.

9. Critical Aquifer Recharge Areas. When present, add the information listed in the Critical Aquifer Recharge Reporting Requirements to the geotechnical report.

E. Mitigation Planning. The applicable standards in MTMC 16.15.210 through 16.15.240 shall be incorporated into mitigation plans submitted to the Director to address impacts to geologic hazard areas. Mitigation plans shall contain sufficient information and detail to analyze impacts and alternatives. The following shall be reflected in proposals within geologic hazard areas, at a minimum:

1. A geotechnical study shall be prepared to identify and evaluate potential hazards and to formulate mitigation measures;

2. Construction methods will reduce or not adversely affect geologic hazards;

3. Site planning shall minimize disruption of existing topography and natural vegetation;

4. Impervious surface coverage shall be minimized;
5. Disturbed areas shall be replanted as soon as feasible, pursuant to an approved landscape plan;
6. Clearing and grading shall be limited to the period of May 1st to October 1st unless the geotechnical report specifically addresses measures necessary to perform clearing and grading during other portions of the year;
7. Use of retaining walls that allow maintenance of existing natural slope areas are preferred over graded slopes;
8. Temporary erosion and sedimentation controls, pursuant to an approved plan, shall be implemented during construction;
9. A master drainage plan shall be prepared for large projects as required by the City Engineer;
10. Development shall not increase instability or create a hazard to the site or adjacent properties, or result in a significant increase in sedimentation or erosion;
11. Any other information and analysis, as determined by the Department, to be relevant to incorporate into mitigation plans.

F. Mitigation, when applicable or required, shall be implemented consistent with MTMC 16.15.210, mitigation sequencing, MTMC 16.15.220, mitigation plan, MTMC 16.15.230, performance standards, and MTMC 16.15.240, maintenance and monitoring plan, and any other applicable mitigation provisions in this section, and any specific standards per this section.

G. Geologic Hazard Protection. Protective covenants or conservation easements may, per MTMC 16.15.270, be required to provide long-term preservation and protection. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.440 Flood hazard areas.

A. Purpose and Applicability. The purpose of regulating activities and structures in flood hazard areas is to protect the integrity, function, and value of the floodplain and to protect life, property and resources from risks associated with development in flood hazard areas.

B. Location and Designation of Flood Hazard Areas.

1. Flood areas within the City of Mountlake Terrace shall be designated according to the latest version of flood insurance rate maps (FIRM) issued by the Federal Insurance Administrator.
2. No specific buffer widths apply to frequently flooded areas beyond the edge of floodplain Zone A as shown on the FIRMs. However, buffer widths and building setbacks from the edge of other underlying critical areas, as regulated by this chapter, shall apply.
3. A flood elevation level may be amended only through property owner or proponent application to FEMA for a letter of map amendment (LOMA), per FEMA filing requirements and applicable procedures per Chapter 16.18 MTMC. Documentation thereof shall be provided to the City prior to or concurrent with an application to do work subject to the revised flood elevation.

C. Allowed Activities and Standards.

1. No structure or land within a designated floodway shall hereafter be constructed, reconstructed, located, extended, converted, or altered without full compliance with this section and Chapter 16.18 MTMC.
2. Construction, reconstruction, or substantial improvement of any residential or nonresidential structure, or appurtenances, is subject to Chapter 16.18 MTMC, except as provided for in WAC 173-158-070.
3. Any development in flood hazard areas is subject to the applicable provisions of Chapter 15.05 MTMC and any applicable City stormwater standards including Chapters 16.20 and 16.21 MTMC.

4. Critical facilities are subject to the provisions set forth in Chapter 16.18 MTMC.
5. Emergencies, exemptions, and reasonable use exceptions are permitted consistent with MTMC 16.15.100, 16.15.110 and 16.15.360 and Chapter 16.18 MTMC.
6. Elevation Certificate Following Construction. Following construction of a structure in the floodplain, the applicant shall obtain an elevation certificate that records the elevation of the lowest floor. The elevation certificate shall be completed by a surveyor licensed in the state of Washington and shall be submitted to the City and recorded per MTMC 16.15.250, Notice on title.

D. NFIP Compliance – FEMA Habitat Assessment. Projects within the FEMA-designated floodplains are required to prepare a habitat assessment to ascertain their potential effects on federally-listed endangered species. Flood storage volumes shall not be decreased nor base flood elevations increased by a project.

ED. Variances.

1. Variance requests for actions and activities within the floodplain are subject to the general variance criteria per MTMC 16.15.350 and any additional considerations per MTMC 16.18.060.
2. Variances shall only be issued upon a demonstration that the requirements for variances have been satisfied pursuant to Chapter 16.18 MTMC. Unavoidable impacts to floodplain functions and values shall be mitigated per subsection E of this section.

EF. Mitigation. Unavoidable impacts to floodplain functions and values, when applicable or required, shall be mitigated consistent with MTMC 16.15.210 through 16.15.240.

EG. Flood Hazard Area Protection. Protective covenants shall be established and noticed on title, pursuant to MTMC 16.15.250 and 16.15.270.

(Ord. 2770 § 4, 2020; Ord. 2731 § 2 (Exh. A), 2018).

16.15.450 Critical Aquifer ~~recharge~~ Recharge Areas.

A. Classification – Critical Aquifer Recharge Areas. Critical Aquifer ~~recharge~~ Recharge areasAreas, if identified, shall be classified as “low” (Class 3),” “medium” (Class 2) and “high” (Class 1) significance-susceptibility based on the soil and ground water conditions and risks to potable water and to surface water during periods of low hydrology. Wellhead protection areas are a type of critical aquifer recharge area. Critical Aquifer recharge areas shall be rated as having high, moderate, or low susceptibility based on soil permeability, geologic matrix, infiltration, and depth to water as determined by the criteria established by the state Department of Ecology. The classification of Critical Aquifer Recharge Areas also considers the number of system connections, system ownership, and contamination susceptibility of wellhead protection areas in alignment with WAC 365-190-030(3). Classification ~~depends on the combined effects of hydrogeological susceptibility to contamination and contaminant loading potential;~~ is as follows:

1. Class 1. High susceptibility significance— uplands and sloping areas underlain predominantly by sand and gravel, ~~and~~ valley floors underlain by relatively coarse alluvium, ~~and~~ include QVa soils, the six month, one-year or five-year capture zone of a wellhead protection area associated with a Group A public water system.
2. Class 2. Medium susceptibility significance— valley floors underlain by relatively fine-grained alluvial soils ~~and~~ the ten-year capture zone of a wellhead protection area associated with a Group A public water system.
3. Class 3. Low susceptibility significance— recharge areas – uplands and sloping areas underlain by silt, clay or glacial till. Private water systems or areas with non-contiguous critical aquifer recharge areas requiring protection from contamination (buffer zone).

B. Mapping. The approximate location and classification of critical aquifer recharge areas is shown on the critical areas maps, pursuant to MTMC 16.15.080. The exact location and classification shall be determined through field

investigation by a qualified professional applying the applicable manuals adopted by this chapter. Any critical aquifer recharge areas will be added on the map at such time as they are identified and delineated.

BC. Allowed Activities. The following activities are allowed in critical aquifer recharge areas, if identified, pursuant to exempt activities per MTMC 16.15.100 and do not require submission of a critical area report, unless otherwise indicated, or if regulated per MTMC 16.15.090:

1. Development and improvement of parks, recreation facilities, open space, or conservation areas resulting in less than five percent total site impervious surface area, that do not increase the use of a hazardous substance.
2. Construction of structures and improvements, including additions, resulting in less than five percent or 2,500 square feet (whichever is greater) total site impervious surface area that does not result in a change of use or increase the use of a hazardous substance.

3. Rainwater collection and use.

~~C. Mapping. There are no known or mapped aquifer recharge areas in the City. Any aquifer recharge areas will be added on the map at such time as they are identified and delineated.~~

D. Regulated Activities.

1. Development that will not cause contaminants to enter the aquifer may be permitted in critical aquifer recharge areas.

2. The following activities and uses in Table 1 below establishes land uses and related activities that are prohibited and restricted within a specific CARA classification. New land uses or activities that pose a hazard to the city's groundwater resources, resulting from storing, handling, treating, using, producing, recycling, or disposing of hazardous materials or other deleterious substances, are prohibited in CARA class 1 and 2. Some uses are prohibited in all CARA classes. Uses and activities lawfully established prior to the effective date of this code are considered to be legal nonconforming uses subject to MTMC 16.15.105 and may continue to operate within the scope of the existing use.

Table 1

<u>Use Activity</u>	<u>CARA Restriction</u>
<u>All mineral resource uses</u>	<u>Mining, processing and reclamation of any type below the water table or the upper surface of the saturated groundwater is prohibited in Class 1 and 2 CARA and in exposed QVa soils in Class 3 CARA. A hydrogeologic report is required for the use in Class 3 CARA outside of the area of exposed QVa.</u>
<u>Automotive uses</u>	<u>Wrecking yards are prohibited in all CARA classes. Vehicle towing yards that store vehicles on permeable surfaces are also prohibited. Service stations are prohibited in Class 1 and 2 CARA as well as in exposed QVa soils in Class 3 CARA. In Class 3 CARA outside of the area of exposed QVa, vehicle repair and servicing must be conducted indoors over impermeable pads. For underground storage tanks (UST) with hazardous substances, applicants must demonstrate that the facility complies with federal and state laws.</u>
<u>Bulk storage facilities where flammable or combustible liquids, solids, or gels are received by pipeline or tank vehicle, and are stored or blended in bulk for the purpose</u>	<u>Prohibited in all CARA.</u>

<u>of distributing such substances by pipeline, tank vehicle, portable tank, or container;</u>	
<u>Cemeteries</u>	<u>Cemeteries are prohibited in the Class 1 and 2 CARA and in exposed QVa soils in Class 3 CARA. Best management practices (BMPs) and integrated pest management (IPM) are required for the use in Class 3 CARA outside of the areas of exposed QVa.</u>
<u>Chemical manufacturing, including but not limited to organic and inorganic chemicals, plastics and resins, pharmaceuticals, cleaning compounds, paints and lacquers, and agricultural chemicals;</u>	<u>Prohibited in Class 1 and 2 CARA as well as in exposed QVa soils in Class 3 CARA. A hydrogeologic report is required for the use in Class 3 CARA outside of the area of exposed QVa. Applicants must demonstrate that the facility complies with federal and state laws.</u>
<u>Crumb rubber (styrene-butadiene rubber) for artificial turf installations.</u>	<u>Prohibited in all CARA.</u>
<u>Dry cleaning</u>	<u>Dry cleaning using chlorinated solvents or using solvent perchloroethylene is prohibited in all CARA classes.</u>
<u>Hazardous liquid transmission pipelines</u>	<u>As defined in Chapter 81.88 RCW, pipelines are prohibited in Class 1 and 2 CARA as well as in exposed QVa soils in Class 3 CARA. A hydrogeologic report is required for the use in Class 3 CARA outside of the area of exposed QVa.</u>
<u>Hazardous waste storage and/or treatment facilities and/or processing, or disposal of radioactive substances;</u>	<u>Hazardous waste storage and/or treatment facilities, as defined by Chapter 173-303-70 WAC through Chapter 173-303-100 and Chapter 173-342 WAC, are prohibited in all CARA classes.</u> <u>Storage, processing, or disposal of radioactive substances as defined in RCW 70.99.020 is prohibited in all CARA classes, except for medical equipment and/or material and medical waste, defined by RCW 70A.390.020, that is held for proper disposal.</u> <u>Aboveground storage tanks for hazardous substances or hazardous wastes with primary and secondary containment area(s) and spill protection plan are prohibited in Class 1 and 2 CARA as well as in exposed QVa soils in Class 3 CARA. A hydrogeologic report is required for the use in Class 3 CARA outside of the area of exposed QVa.</u> <u>Underground storage of chemicals, substances or materials that are toxic, hazardous or dangerous is prohibited in Class 1 and 2 CARA. A hydrogeologic report is required for the use in Class 3 CARA;</u>
<u>Hydrocarbon extraction;</u>	<u>Prohibited in all CARA.</u>
<u>Irrigation and infiltration of greywater</u>	<u>Prohibited in all CARA.</u>

<u>Landfills, including hazardous or dangerous waste, municipal solid waste, special waste, woodwaste, and inert and demolition waste landfills;</u>	<u>Prohibited in all CARA.</u> <u>Solid waste is defined in WAC 173-304-100.</u>
<u>Large on-site sewage systems, as defined in Chapter 246-272A WAC</u>	<u>Prohibited in all CARA.</u>
<u>Metal recycling facilities with outdoor storage and handling activities</u>	<u>Prohibited in all CARA.</u>
<u>Mobile fleet fueling operations.</u>	<u>Prohibited in all CARA. “Mobile fleet fueling” means the practice of filling fuel tanks of vehicles from tank vehicles. “Mobile fleet fueling” is also known as wet fueling and wet hosing. “Mobile fleet fueling” does not include fueling at construction sites.</u>
<u>Petroleum refinement processes, including any related reprocessing or storage.</u>	<u>Prohibited in all CARA.</u>
<u>Permanent dewatering of the aquifer when done as part of remediation action that is approved by the Department of Ecology;</u>	<u>Prohibited in all CARA.</u>
<u>Primary and secondary metal industries that manufacture, produce, smelt, or refine ferrous and nonferrous metals from molten materials;</u>	<u>Prohibited in all CARA.</u>
<u>Reclaimed or recycled water use with the exception of uses that discharge to the sanitary sewer;</u>	<u>Prohibited in all CARA.</u>
<u>Solid waste transfer stations.</u>	<u>Prohibited in all CARA. Solid waste is defined under WAC 173-304-100.</u>
<u>Wood Treatment Facilities. Commercial wood preserving and wood products preserving. Treatment facilities that allow any portion of the treatment process to occur over permeable surfaces (both natural and manmade);</u>	<u>Prohibited in all CARA.</u>

DE. Alteration or Development of Critical Aquifer Recharge Areas – Standards and Criteria.

1. Development should be clustered and impervious surfaces limited where possible;
2. All development shall implement best management practices for water quality, as approved by the Department, such as biofiltration swales and use of oil-water separators, and BMPs appropriate to the particular use proposed;
3. The City shall impose development conditions to prevent degradation of critical aquifer recharge areas. Development conditions shall be based on all known, available, and reasonable methods of prevention, control, and treatment (“AKART”);
4. An emergency response/spill clean-up plan shall be prepared and employees properly trained in reacting to accidental spills;

5. A written operations plan should be developed, including procedures for loading/unloading liquids and for training of employees in proper materials handling;
6. The proposed activity must comply with the water source protection requirements and recommendations of the Federal Environmental Protection Agency, State Department of Ecology, State Department of Health, and Public Health – Snohomish County;
7. The proposed activity must be designed and constructed in accordance with the City's stormwater manuals adopted in MTMC 16.20;
8. No waste liquids or chemicals of any kind shall be discharged to storm sewers;
- a-9. The following code provisions are established to further protect critical aquifer recharge areas: 16.20 MTMC, 16.21 MTMC, 19.120.220 MTMC, 16.18 MTMC.

~~1. Alteration of critical areas and/or their established buffers may be permitted by the Department subject to the criteria of this section. Standards for mitigation of impacts to critical areas are identified in MTMC 16.15.310.~~

~~2. Medium or Low Significance Recharge Areas. Development within "medium or low significance aquifer recharge areas," as those terms are defined in this section, shall implement the mitigation standards contained in MTMC 16.15.210 and 16.15.220.~~

~~3. The following land uses and activities shall be avoided in critical (high significance) aquifer recharge areas:~~

~~a. Land uses and activities that involve the use, storage, transport or disposal of regulated quantities of chemicals, substances or materials that are toxic, dangerous or hazardous, as those terms are defined by state regulations (per WAC 173 303 070 through 173 303 100, and Chapter 173 342 WAC);~~

~~b. On site sewage disposal systems;~~

~~c. Underground or outdoor storage of chemicals;~~

~~d. Petroleum pipelines; and~~

~~e. Solid waste landfills.~~

~~EF. Critical Area Reporting Requirements – Critical Aquifer Recharge Areas. Applications for activities where an critical aquifer recharge area is present shall require prepare a critical hydrogeologic area report prepared by a qualified professional. A qualified professional is someone who is a currently licensed Washington State geologist holding a current specialty license in hydrogeology. The hydrogeologic report shall consistent with the geologic hazard area reporting requirements per MTMC 16.15.430, together with the following additional information contain the following information:~~

- ~~1. Information regarding geologic and hydrogeologic characteristics of the site including the surface location of all critical aquifer recharge areas located on site or immediately adjacent to the site, and permeability of the unsaturated zone. A characterization of the affected aquifer system and a description of subsurface soil types (between the surface and the uppermost significant aquifer);~~
- ~~2. Description of proposed uses and activities;~~
- ~~3. Ground water depth, flow direction, and gradient based on available information. Identification of the type and quantities of any dangerous or hazardous chemicals or substances that will be used, stored, transported or disposed of on the site;~~
- ~~4. Currently available data on wells and springs within 1,320 feet of the project area. Proposed methods of storing any of the above substances, including containment methods;~~

5. A spill plan that identifies equipment and structures that could fail, resulting in an impact to the critical aquifer recharge area. Spill plans shall include provisions for regular inspection, repair, and replacement of structures and equipment with the potential to fail; An emergency response plan for dealing with any spills; and
- 5.—When present, add wellhead protection information including protection measures.
6. Proposed best management practices (BMPs) relevant to the proposed activity or use; for controlling surface water runoff.
7. Historic water quality data for the area to be affected by the proposed activity or use compiled for at least the previous five-year period;
- 6.—Provisions to monitor the groundwater quality and quantity;
8. Discussion of the effects of the proposed project on the ground water quality and quantity, including:
 - a. Predictive evaluation of ground water withdrawal effects on nearby wells and surface water features;
 - b. Predictive evaluation of contaminant transport based on potential releases to ground water;

F. Mitigation Planning.

1. The mitigation and performance standards in this section and the standards in MTMC 16.15.210 through 16.15.240 shall be incorporated into mitigation plans to address impacts to aquifer recharge areas. Mitigation plans shall contain detailed critical area information as required by the Department to analyze impacts and alternatives.
2. Development within “low significance aquifer recharge areas” shall implement best management practices for water quality as approved by the City.
3. Development within “high and medium significance aquifer recharge areas,” as those terms are defined in this section, shall implement the following measures:
 - a. Underground storage of chemicals, substances or materials that are toxic, hazardous or dangerous is prohibited;
 - b. Any chemicals, substances or materials that are toxic, hazardous or dangerous as defined by state law (per WAC 173-303-070 through 173-303-100 and Chapter 173-342 WAC) should be segregated and stored in receptacles or containers that meet state and federal standards;
 - c. Storage containers should be located in a designated, secured area that is paved and able to contain leaks and spills, and surrounded by a dike;
 - d. Secondary containment devices should be constructed around storage areas to retard the spread of any spills and a monitoring system should be implemented;
 - e. A written operations plan should be developed, including procedures for loading/unloading liquids and for training of employees in proper materials handling;
 - f. An emergency response/spill clean up plan shall be prepared and employees properly trained in reacting to accidental spills;
 - g. The tanks should include overfill protection systems and positive controls on outlets to prevent uncontrolled discharges;
 - h. Development should be clustered and impervious surfaces limited where possible;
 - i. No waste liquids or chemicals of any kind shall be discharged to storm sewers; and
 - j. All development shall implement best management practices for water quality, as approved by the Department, such as biofiltration swales and use of oil-water separators, and BMPs appropriate to the particular use proposed.
4. On completion of construction, any approved mitigation project must be signed off by the applicant’s qualified professional and approved by the Department. Signature will indicate that the construction has been completed as approved.

G. Third-Party Review. The city may employ a hydrogeologic consultant licensed in Washington State at the applicant’s expense for third-party review for compliance

H. Critical Aquifer Recharge Area Protection. Protective covenants shall be provided, pursuant to MTMC 16.15.250 and 16.15.270. (Ord. 2731 § 2 (Exh. A), 2018).

16.15.500 Definitions.

For the purposes of this chapter, the following definitions shall apply:

“Active channel” means the portion of a stream channel defined by the lower limit of continuous riparian vegetation, and it may be delineated by absence of both moss on rocks and rooted vegetation. The upper most elevation of the active channel is sometimes equated with the ordinary high-water mark.

“Alteration” means any human induced change to, addition to, or modification of an existing condition, structure, or use of a critical area or its buffer. Alterations include, but are not limited to, grading, filling, channelizing, dredging, clearing (vegetation), construction, compaction, excavation, or any other activity that changes the character of the critical area.

“Anadromous fish” means fish, such as wild salmon, that spawn and rear in fresh water and mature in the marine environment.

“Applicant” means any person, party, firm, corporation, or other entity which applies for a development proposal, permit or approval subject to review under this chapter.

“Application” means the completed form or forms and all accompanying documents, exhibits, and fees required of an applicant for review and approval to conduct an activity or use as required and permitted in this chapter.

“Aquifer” means, generally, any water-bearing soil or rock unit. Specifically, a body of soil or rock that contains sufficient saturated permeable material to conduct ground water and yield economically significant quantities of ground water to wells or springs.

~~“Aquifer recharge area” means an area where, due to permeable soils, water infiltrates from the surface to ground water aquifers.~~

“Aquifer susceptibility” means the ease with which contaminants can move from the land surface to the aquifer based solely on the types of surface and subsurface materials in the area.

~~“Aquifer vulnerability” means the combined effect of aquifer susceptibility and contaminant loading potential; it includes hydrogeologic, land use and other factors that affect the potential for ground water contamination.~~

“Artificially created wetland” means wetlands created from nonwetland sites through purposeful, legally authorized human action, such as irrigation and drainage ditches, grass-lined swales, canals, retention or detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities.

“Base flood” or “100-year flood” means a flood having a one percent chance of being equaled or exceeded in any given year, also referred to as the “100-year flood.” The base flood is determined for existing conditions, and is shown on Flood Insurance Rate Maps (FIRM), current version; unless a more complete basin plan including projected flows under future developed conditions has been completed and adopted by the City of Mountlake Terrace, in which case these future flow projections shall be used. In areas where the flood insurance study for the City includes detailed base flood calculations, those calculations may be used.

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

“Best management practices (BMPs)” means conservation practices or systems of practices and management measures that:

1. Controls soil loss and reduces water quality degradation caused by high concentrations of nutrients, animal waste, toxins, and sediment;

2. Minimizes adverse impacts to surface water and ground water flow and circulation patterns, and to the chemical, physical, and biological characteristics of wetlands;
3. Protects trees and vegetation designated to be retained during and following site construction, and uses native plant species appropriate to the site for revegetation of disturbed areas; and
4. Provides standards for proper use of chemical herbicides within critical areas.

“Buffer, critical area” means that area which surrounds and helps protect the functions and values of critical areas from adverse impacts, minimizes public safety risks, and/or may provide wildlife habitat integrally related to the critical area. The purpose of the buffer shall be to protect the integrity, function and value of the subject critical area (wetlands, streams, and wildlife habitat areas), and/or to protect life, property and resources from risks associated with development on unstable or critical lands (geologic hazard areas, flood hazard areas, aquifer recharge). Buffers shall typically consist of an undisturbed area of native vegetation

“Buffer, functionally disconnected,” see “Functionally disconnected buffers.”

“Building setback” means an area that ~~is the~~ begins at the outermost ~~portion edge~~ of a critical area buffer which shall not contain a building or structure of such size, individually or cumulatively, as to require issuance of a building permit. Building/structure overhangs not more than 24 inches may extend into the required building setback, and that may provide a transition between the primary portion of the critical area buffer and the potential location of a building.

“Channel Migration Zone” (CMZ) means areas in a floodplain where a stream or river channel can be expected to move naturally over time in response to gravity and topography. It includes the land adjacent to the current river channel that is at high risk of occupation by the channel within the next 100 years. All areas separated from the active channel by a legally existing artificial structure(s) that is publicly maintained and likely to restrain channel migration, including transportation facilities, built above or constructed to remain intact through the one hundred-year flood, shall not be considered to be in the channel migration zone. Areas behind natural or manmade features which limit channel migration that allow fish passage shall not be included in the channel migration zone.

“City” means the City of Mountlake Terrace.

“Clearing” means the removal of timber, brush, grass, ground cover or other vegetative matter from a site which exposes the earth’s surface of the site, or any actions which disturb the existing ground surface.

“Comprehensive Plan” means the City of Mountlake Terrace Comprehensive Plan as now adopted or hereafter amended.

“Conservation easement” means a legal agreement that the property owner enters into to restrict uses of the land, providing permanent or long-term protection that is granted to the City or a nonprofit entity (e.g., land trust) to enable the City to protect a critical area and associated buffer from use and development that is inconsistent with this chapter.

“Contaminant loading potential” means the availability within an aquifer recharge area of any potential physical, chemical, biological, or radiological substance that enters the hydrological cycle and may cause a deleterious effect on ground water resources.

“Creation” means the purposeful and legally authorized construction or forming of a wetland or stream from an upland (nonwetland or dry) site through artificial means. See also “Mitigation, compensatory.”

“Critical aquifer recharge areas” ~~means are areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge. areas where an aquifer that is a source of drinking water is both highly susceptible and vulnerable to contamination. High significance/high susceptibility recharge areas—generally uplands and sloping areas underlain predominantly by sand and gravel, and valley floors underlain~~

~~by relatively coarse alluvium—are considered to be critical recharge areas unless site specific information demonstrates little or no contaminant loading potential.~~

“Critical area report” means a report prepared by a “qualified professional” (as that term is defined in this section) to determine the presence, type, class, size, function and/or value of an area and mitigation and monitoring of impacts subject to these regulations.

“Critical area tract” means land held in private ownership and retained in an open condition in perpetuity for the protection of critical areas.

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

“Critical erosion hazard areas” ~~—means lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resource Conservation Service as having “severe” or “very severe” erosion hazards.~~
~~means lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resource Conservation Service as having “severe” or “very severe” erosion hazards.~~

“Critical facility” means a facility for which even a slight chance of flooding, inundation, or impact from a hazard event might be too great. Critical facilities include, but are not limited to, schools, nursing homes, hospitals, police, fire, and emergency response installations, and installations that produce, use, or store hazardous materials or hazardous waste.

“Critical geologic hazard areas” means lands or areas subject to high or severe risks of geologic hazard, including critical erosion hazard areas, critical landslide hazard areas, and critical seismic hazard areas.

~~“Critical Priority~~ habitat” means habitat areas associated with threatened, endangered, sensitive, monitor or priority species of plants or wildlife and which, if altered, could reduce the likelihood that the species will maintain and reproduce over the long term. Such areas are identified herein with reference to lists, categories and definitions of species promulgated by the Washington Department of Fish and Wildlife (Nongame Data System Special Animal Species) as identified in WAC 232-12-011 or 232-12-014; in the priority habitat and species (PHS) program of the Department of Fish and Wildlife; or by rules and regulations adopted currently or hereafter by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

~~“Critical IL~~ landslide hazard areas” means lands or areas where there is a moderate (Class II), high (Class III) or very high (Class IV) risk of landslide due to a combination of slope, soil permeability and water.

“Critical seismic hazard areas” means lands or areas where there is a high risk of seismic events and damage.

“Department” means the City of Mountlake Terrace Community and Economic Development Department, or successor agency, unless the context indicates otherwise.

“Development” means any human-made change to real estate including, but not limited to, buildings or other structures, grading, dredging, filling, paving, mining, excavation, drilling, or storage of equipment and materials, or any other activity of a temporary or permanent nature which results in the removal of vegetation or in the alteration of natural site characteristics.

“Director” means the Director of the City of Mountlake Terrace Community and Economic Development Department, or his/her designee.

“Earth/earth material” means naturally occurring rock, soil, stone, sediment, or a combination thereof.

“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 habitats.

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

“Emergency” means that there exists an immediate threat to public health, safety, or welfare, or that the circumstances pose an immediate risk of damage to private property and require remedial or preventative action in a time frame too short to allow for compliance with the standard procedural requirements of this chapter.

“Enhancement” means the improvement of an existing viable wetland, stream or habitat area or the buffers established for such areas, through such measures as increasing plant diversity, increasing wildlife habitat, installing environmentally compatible erosion controls, increasing structural diversity or removing plant or animal species that are not indigenous to the area. Enhancement also includes actions performed to improve the quality of an existing degraded wetland, stream or habitat area. See also “Restoration.”

“Erosion” means a process whereby wind, rain, water and other natural agents mobilize and transport soil particles.

“Erosion control” means on-site and off-site control measures needed to control conveyance or deposition of earth, turbidity or pollutants during development, construction, or restoration. Erosion control may be temporary or permanent.

~~“Erosion hazard areas” are those areas containing soils which, according to the United States Department of Agriculture Natural Resources Conservation Service Soil Survey Program, may experience significant erosion. Erosion hazard areas also include channel migration zones. Erosion hazard areas include areas likely to become unstable, such as bluffs, steep slopes, and areas with unconsolidated soils. means lands or areas that, based on a combination of slope inclination and the characteristics of the underlying soils, are susceptible to varying degrees of risk of erosion. These include, but are not limited to, those identified by the U.S. Department of Agriculture Natural Resource Conservation Service Soil Classification System, with a water erosion hazard of “severe” or “high.”~~

“Excavation” means the removal or displacement of earth material by human or mechanical means.

“Exotic” means any species of plant or animal that is foreign and not indigenous to the Mountlake Terrace area including non-native invasive species from other regions of the conterminous United States.

“Fill/fill material” means a deposit of earth material placed by human or mechanical means.

“Filling” means the act of transporting or placing (by any manner or mechanism) fill material from, to, or on any surface water body or wetland, soil surface, sediment surface, or other fill material.

~~“Fish and wildlife habitat conservation” means land management for maintaining populations of species in suitable habitats within their natural geographic distribution so that the habitat available is sufficient to support viable populations over the long term and isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term.~~

“Fish and wildlife habitat conservation areas” (FWHCAs) 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. “Habitats of local importance” designated as fish and wildlife habitat conservation areas include those areas found to be locally important by counties and cities. “Fish and wildlife habitat conservation areas” does not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of, and are maintained by, a port district or an irrigation district or company.

~~“Flood fringe” means that portion of the floodplain outside of the floodway which is generally covered by flood waters during the base flood; it is generally associated with shallow, slower moving water rather than rapidly flowing water.~~

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

“Flood hazard areas” means those areas subject to inundation by the base flood. A flood hazard area consists of the floodplain, flood fringe, and floodway.

“Flood Insurance Rate Map (FIRM)” means the official map prepared as part of (but published separately from) the Flood Insurance Rate Study on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the applicable risk premium zones.

“Flood or flooding” means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland waters and/or the unusual and rapid accumulation of runoff of surface waters from any source.

~~“Flood protection elevation” means the elevation that is one foot above the base flood elevation.~~

“Floodplain” means the total area adjoining a river, stream, watercourse, or lake subject to inundation by the base flood.

“Floodplain, 100-year,” “100-year floodplain” or “flood hazard areas” means those lands which are subject to a one percent or greater chance of flooding in any year.

“Floodway” means the channel of the stream or river and that portion of the adjoining floodplain which is necessary to contain and discharge the base flood flow without increasing the base flood elevation more than one foot. It is generally associated with rapidly flowing water.

“Frequently flooded areas” are lands in the floodplain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater. These areas include, but are not limited to, streams, rivers, lakes, coastal areas, wetlands, and areas where high groundwater forms ponds on the ground surface, and those lands that provide important flood storage, conveyance, and attenuation functions, as determined by the Director in accordance with WAC 365-190-080(3). Classifications of frequently flooded areas include, at a minimum, the 100-year floodplain designations of the Federal Emergency Management Agency and the National Flood Insurance Program (NFIP).

~~“Functionally disconnected buffer” means legally established development blocks the protective measures that a buffer provides and increasing the buffer of the far side of the development would add no protective benefit. Functionally disconnected buffers can be created by significant developments, public infrastructure such as paved roads and railroads, and private development. Functionally disconnected buffers typically do not include trails, minor accessory structures, paths, driveways serving a single unit residence.~~

“Functions and values” or “functions” means the beneficial roles served by critical areas including, but not limited to, water quality protection and enhancement; fish and wildlife habitat; food chain support; flood storage, conveyance and attenuation; ground water recharge and discharge; erosion control; wave attenuation; protection from hazards; historical, archaeological, and aesthetic value protection; educational opportunities; and recreation.

“Geologic hazard areas” means those areas that because of their susceptibility to erosion, landsliding, earthquake, ~~volcanic lahar, liquefaction~~ or other geological events, may not be suited to siting commercial, residential or industrial development consistent with public health or safety concerns.

“Grading” means any excavating, filling, clearing, leveling, or contouring or any combination thereof of the ground surface by human or mechanical means.

~~“Habitat connectivity” means the degree to which the landscape facilitates or impedes wildlife movement.~~

~~“Habitat corridor” means corridors set aside and protected for preserving connections between habitats on development proposal sites that contain streams and/or wetlands with a moderate to high habitat score greater than or equal to six on the Washington State Wetland Rating System for Western Washington (Department of Ecology 2014 or as revised) that are located within 200 feet of an on-site or off-site stream and/or wetland with a moderate to high habitat score greater than or equal to six on the Washington State Wetland Rating System for Western Washington. Fish and wildlife habitat corridors do not increase stream buffers, except as required to provide a connection between two features as described above.~~

“Habitat management” means management of land and its associated resources/features to maintain species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. This does not imply maintaining all habitat or individuals of all species in all cases.

~~“Habitats and species areas of local importance” means habitats the City may identify, classify and designate as locally important habitats and species.~~

“Habitats of local importance” means habitats designated as fish and wildlife habitat conservation areas to include those areas found to be locally important by the city (WAC 365-190-030(6)(b)).

“Hazard areas” means areas designated as frequently flooded areas or geologically hazardous areas due to potential for erosion, landslide, seismic activity, mine collapse, or other geological condition.

~~“Hazard tree” means a tree that or tree part that is structurally unsound and has a high likelihood of failure and causing damage or injury and is therefore a threat to life, property, or public safety. is dead, unstable, diseased to the point of hazard, has tree limbs or trunks that are demonstrably cracked, leaning toward overhead utility lines, structures or site improvements, or are uprooted by flooding, heavy winds or storm events that may constitute a hazard requiring cutting in whole or part, pose a threat to public safety, or pose an imminent risk of damage to private property.~~

“High impact land use” means land uses which are likely to have significant adverse impacts to critical areas because of the intensity of the use, levels of human activity, use of machinery or chemicals, site design or arrangement of buildings and structures. High impact land uses include, but are not limited to, active recreation, residential, institutional, commercial, and industrial land uses.

“Hydrologically isolated” means wetlands which: (1) have no surface water connection to a lake, river, or stream during any part of the year; (2) are outside of and not contiguous to any 100-year floodplain of a lake, river, or stream; and (3) have no contiguous hydric soil between the ~~wetland S~~ and any lake, river, or stream. May also be a pond excavated from uplands with no surface water connection to a stream, lake, or other wetland.

“In-kind mitigation” or “in-kind compensation” means to replace a critical area whose characteristics and functions closely approximate those destroyed or degraded by a regulated activity.

“Intentionally created streams” means streams created through purposeful human action, such as irrigation and drainage ditches, grass-lined swales, and canals. This definition does not include stream modifications performed, pursuant to City authorization, such as changes or redirection of stream channels.

“Landslide” means episodic downslope movement of a mass of soil or rock.

~~“Landslide hazard areas” means areas at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors. areas that, due to a combination of geologic, topographic, and/or hydrologic factors, are considered to be susceptible, in varying degrees of risk, to landsliding.~~

~~“Low impact development” means A stormwater and land use management strategy that strives to mimic natural hydrologic conditions by emphasizing the pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration.~~

“Low impact land use” means land uses which are not likely to have significant adverse impacts to critical areas because of the intensity of the use, levels of human activity, use of machinery or chemicals, site design or arrangement of buildings and structures. Depending on the specific context, examples of low impact land uses may include utility facilities and passive recreation.

“Mitigation” or “compensatory mitigation” means to replace project or activity-induced losses or impacts to critical area or buffers, and includes, but is not limited to, restoration, creation, enhancement or preservation. (See also separate definitions.)

1. Restoration – Actions performed to reestablish wetland, stream or other critical area functional characteristics and processes that have been lost by alterations, activities, or catastrophic events within an area that no longer meets the definition of that critical area.
2. Creation – Actions performed to intentionally establish a wetland, stream or other critical area at a site where it did not formerly exist.
3. Enhancement – Actions performed to improve the condition of existing degraded wetland, stream or other critical area so that the functions they provide are of a higher quality.
4. Preservation – Actions taken to ensure the permanent protection of existing, high-quality wetland, stream or other critical area.

Mitigation Bank. See “Wetlands mitigation bank.”

“Mitigation, off-site” or “off-site mitigation” means to replace a critical area, buffer and functions, on a site or in an area other than the site impacted by an allowable use or activity.

“Mitigation, on-site” or “on-site mitigation or compensation” means to replace critical areas at or adjacent to the site on which a critical area has been impacted.

“Mitigation, out-of-kind” or “out-of-kind mitigation” means to replace a critical area, buffer and their functions away from the site on which a critical area has been impacted with a substitute critical area, buffer or function whose characteristics do not closely approximate those adversely affected, destroyed or degraded by an allowable use or activity.

“Mitigation sequencing” means to consider and/or perform mitigation actions in a priority or sequential order from avoidance to compensation, as defined by this chapter.

“Monitoring” means the collection and analysis of data by various methods for the purposes of understanding and documenting changes in natural ecosystems and features, and includes gathering baseline data, evaluating the impacts of development proposals on the biological, hydrologic and geologic elements of such systems and assessing the performance of required mitigation measures.

“MTMC” means Mountlake Terrace Municipal Code.

“Native vegetation” means vegetation existing on a site or plant species which are or were indigenous to the area in question.

~~“No net loss of critical areas” refers to the actions taken to achieve and ensure no overall reduction in existing ecosystem functions and values or the natural systems constituting the protected critical areas. This may involve fully offsetting any unavoidable impacts to critical area functions and values. means that permitted uses in critical areas shall be designed and conducted in a manner consistent with WAC 197-11-768 to avoid, minimize and/or mitigate, insofar as practical, any resultant damage to the ecology and environment of the critical area. It may also encompass restoration of ecological functions necessary to sustain critical areas.~~

The concept of “net” as used herein, recognizes that any development has potential or actual, short-term or long-term impacts and that through application of appropriate development standards and employment of mitigation measures in accordance with the mitigation sequence, those impacts will be addressed in a manner necessary to assure that the end result will not diminish the critical area resources and functions as they currently exist.

~~“Ordinary High Water Mark” (OHWM) means (1) That mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland (Washington Department of Ecology 2016). (2) That line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (U.S. Army Corps of Engineers, 2014).~~

“Permit, critical area” means any authorization to proceed with an activity, action, or use in a critical area or buffer. An authorization may consist of an approved land use, building, or other type of construction, permit.

“Priority habitats and species” means important fish and wildlife species and habitats as determined by the Washington State Department of Fish and Wildlife. Priority Habitats include endangered, threatened, sensitive, candidate, and vulnerable species and habitats deemed priorities of WDFW and reflective of best available science. a habitat type or elements “with unique or significant value to one or more species as classified by the state Department of Fish and Wildlife. A priority habitat may consist of a unique vegetation type or dominant plant species, a described successional stage, or a specific structural element.

“Priority species, ~~state~~” or “~~state priority species~~” means a fish or wildlife species requiring protective measures and/or management actions to ensure its survival. A Priority Species fits one or more of the following criteria (WDFW Priority Habitats and Species List):

- is a State-listed endangered, threatened, sensitive, or candidate species;
- has vulnerable aggregations; or
- is of recreational, commercial, and/or tribal importance.

those species that are so identified by the Washington Department of Fish and Wildlife due to their population status and their sensitivity to habitat manipulation. Priority species include those which are state-listed endangered, threatened, sensitive and candidate species; animal aggregations considered vulnerable; vulnerable species of recreational, commercial or tribal importance; as well as other species of concern and game species.

“Qualified Professional.” For purposes of this chapter, “qualified professional” shall mean a person who has attained a degree from an accredited college or university in the subject matter necessary to evaluate the critical area in question (e.g., biology, ecology or horticulture/arboriculture for wetlands, streams and wildlife habitat and significant vegetation, geology and/or civil engineering for geologic hazards and critical aquifer recharge areas), and/or who is professionally trained and/or certified or licensed by the state of Washington to practice in the scientific disciplines necessary to identify, evaluate, manage and mitigate impacts to the critical area in question and who has at least two years of experience in the relevant discipline. In addition, for a Critical Aquifer Recharge Area hydrogeologic report, a qualified professional is someone who is a currently licensed Washington State geologist holding a current specialty license in hydrogeology.

“Recreation” means an active or passive enjoyable outdoor leisure activity.

1. Active recreation – Outdoor recreational activity that may require development of facilities, and can have a high impact on critical areas, such as larger group activities, organized sports, playground activities, and the use of motorized equipment.
2. Passive recreation – Nonconsumptive recreation, education, and scientific research activities that are smaller scale with low impact to critical areas including, but not limited to, interpretive field trips, fishing, hiking, canoeing, kayaking, and bird or wildlife watching.

“Redevelopment” means development of a site that contains or has contained real estate improvements such as, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, or excavation.

“Regulated activity” means activities that have a potential to significantly impact a critical area that is subject to the provisions of this chapter. Regulated activities generally include but are not limited to any filling, dredging, dumping or stockpiling, draining, excavation, flooding, clearing or grading, construction or reconstruction, driving pilings, obstructing, shading, clearing or harvesting.

“Restoration” means to reestablish critical area functional values and characteristics, to its unaltered state, prior to being destroyed or degraded by past alterations activities, past management activities, or catastrophic events, as closely as possible. Commonly applies, but is not limited to, to active steps taken to restore damaged wetlands, streams, protected habitat, or their buffers to the functioning condition that existed prior to an unauthorized alteration. (See also “Mitigation, compensatory” and “Enhancement.”)

“Riparian habitat” means areas adjacent to aquatic systems with flowing water that contain elements of both aquatic and terrestrial ecosystems that mutually influence each other.

~~“Secondary habitat” means areas that offer less diversity of animal and plant species than priority habitat but that are important for performing the essential functions of habitat.~~

“Seismic hazard areas” means areas that, due to a combination of soil and ground water conditions, are subject to risk of damage as a result of earthquake-induced ground shaking, slope failure, subsidence or liquefaction of soils.

“Significant tree” means a healthy ~~evergreen-coniferous~~ or deciduous tree, ~~eight-six~~ inches in diameter or greater, measured ~~four feet at diameter breast height (DBH) for a deciduous tree; and above existing grade and at least seven feet in height for a coniferous tree.~~ The Director may authorize the exclusion of any tree which, for reasons of health, age, or site development, is not desirable to retain, or require retention of trees which are unique or unnecessary to remove to accomplish the activity.

“Site” means the location containing a regulated critical area and on which a regulated activity is proposed. The location may be a parcel or portion thereof, or any combination of contiguous parcels where a proposed activity may impact a critical area.

“Slope” means an inclination of the earth’s surface expressed as the ratio of horizontal distance to vertical distance.

“Slope, steep” means a slope of 40 percent or more within a vertical elevation change of at least 10 feet. For the purpose of this definition, a slope is delineated by establishing the “toe” and “top” of slope, as defined by this section, and is measured by averaging the inclination over at least 10 feet of elevation difference. See “Critical landslide hazard areas.”

“Streams” means those areas where surface waters produce a defined channel or bed. A “defined channel or bed” is an area which demonstrates clear evidence of the passage of water and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water year-round. This definition is not intended to include artificially created irrigation ditches, canals, storm or surface water devices or other entirely artificial watercourses unless they are used by salmonids or created for the purposes of stream mitigation.

~~“Stream buffer” means a designated area contiguous or adjacent to a stream that is required for the continued maintenance, function, and structural stability of the stream. Functions of a buffer include shading, input of organic debris and coarse sediments, uptake of nutrients, stabilization of banks, pollution control, protection from intrusion, or maintenance of wildlife habitat.~~

“Structural diversity, vegetative” means the relative degree of diversity or complexity of vegetation in a wildlife habitat area as indicated by the stratification or layering of different plant communities (e.g., ground cover, shrub layer and tree canopy); the variety of plant species; and the spacing or pattern of vegetation.

“Substantial improvement” means any repair, reconstruction or improvement the cost of which, during any three-year period, is more than 50 percent of the market value of the structure either:

1. Before the improvement is started; or
2. Before the damage occurred if the structure damaged is being replaced. An improvement occurs when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not the alteration affects the external dimensions of the structure. Substantial improvement does not include:
 - a. An improvement undertaken solely to comply with existing state or local health, sanitary or safety code specifications which are necessary to assure safe conditions; or
 - b. Alteration of a structure listed on the National Register of Historic Places or a state inventory of historic places.

“Substrate” means the soil, sediment, decomposing organic matter or combination of those located on the bottom surface of the wetland, lake, stream or river.

“Toe” or “toe of slope” means a distinct topographic break in slope that separates slopes inclined at less than 40 percent from slopes inclined at 40 percent or more. Where no distinct break exists, the “toe” of a slope is the lowermost limit of the area where the ground surface drops 10 feet or more vertically within a horizontal distance of 25 feet.

“Top” or “top of slope” means a distinct topographic break in slope that separates slopes inclined at less than 40 percent from slopes inclined at 40 percent or more. Where no distinct break exists, the “top” of a slope is the uppermost limit of the area where the ground surface drops 10 feet or more vertically within a horizontal distance of 25 feet.

Tree, Hazard. See “Hazard tree.”

Tree, Significant. See “Significant tree.”

“Utility” includes natural gas, electric, telephone and telecommunications, cable communications, water, sewer, or storm drainage and their respective facilities, lines, pipes, mains, equipment and appurtenances.

“Variance” means an adjustment in the application of the specific provisions of this chapter to a particular piece of property which, because of a unique physical character or condition, is deprived of privileges commonly enjoyed by other properties in similar circumstances.

“Water-dependent use” means a principal use which can only exist when the land/water interface provides biological or physical conditions necessary for the use.

~~“Wellhead protection area (WHPA)” means protective areas associated with public drinking water sources established by water systems and approved or assigned by the state department of health.~~

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

~~Wetland Class. The U.S. Fish and Wildlife Service wetland classification scheme uses a hierarchy of systems, subsystems, classes and subclasses to describe wetland types (refer to USFWS, December 1979, “Classification of Wetlands and Deepwater Habitats of the United States” for a complete explanation of the wetland classification scheme). Eleven class names are used to describe wetland and deepwater habitat types. These include: forested wetland, scrub shrub wetland, emergent wetland, moss lichen wetland, unconsolidated shore, aquatic bed, unconsolidated bottom, rock bottom, rocky shore, streambed, and reef.~~

Wetland Classification. Wetland classifications shall incorporate the Washington State Wetlands Rating System for Western Washington (Department of Ecology 2014 Update Publication No. 23-06-00944-06-029 or as revised).

~~“Wetland delineation manual” or “wetland delineation methodology” means the manual and methodology used to identify wetlands in the field, as described in the U.S. Army Corps of Engineers Wetlands Delineation Manual (1987) and applicable regional supplements. Use of this manual is required by RCW 36.70A.175 and 90.58.380.~~

~~“Wetland impact assessment report” means a report prepared by a “qualified professional” as that term is defined in this section that identifies, characterizes and analyzes potential impacts to wetlands consistent with applicable provisions of these regulations. A wetland impact assessment may be combined with and include a formal wetland delineation.~~

“Wetlands mitigation bank” means a site where wetlands are restored, created, enhanced, or in exceptional circumstances, preserved, expressly for the purpose of providing compensatory mitigation in advance of unavoidable impacts to wetlands or other aquatic resources are typically unknown at the time of certification to compensate for future, permitted impacts to similar resources.

~~Wetland Subclass. Twenty-eight subclass names are used in the USFWS wetland classification scheme to distinguish between different types of wetland classes. Subclass names include, but are not limited to, the following: persistent, nonpersistent, broad-leaved deciduous, needle-leaved deciduous, broad-leaved evergreen, needle-leaved evergreen, dead. The classification system is fully described in Cowardin et al., “Classification of Wetlands and Deepwater Habitats of the United States U.S. Fish and Wildlife Service, Washington, DC, 1979.”~~

“Wildlife habitat” means areas including naturally occurring ponds that provide food, protective cover, nesting, loafing, breeding or movement for fish and wildlife and with which individual species have a primary association.

~~“Wildlife report” means a report prepared by a qualified professional that evaluates plant communities and wildlife functions and values on a site, consistent with the format and requirements established by this chapter.~~

(Ord. 2747 § 5, 2019; Ord. 2731 § 2 (Exh. A), 2018).



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Floodplain Management Ordinance Update

Planning Commission Work Session: October 13, 2025

Sara Pizzo, AICP, Senior Planner
Community and Economic Development

PURPOSE

- Review specific Floodplain Management Ordinance code changes proposed by staff
- Gather questions and concerns from Planning Commission
- Discuss next steps



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AGENDA

- Council Goals
- Subject Summary
- Key topics/supporting information and graphics
- Timeline
- Questions and Discussion



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COUNCIL GOALS

Environmental Sustainability and Resiliency

- Minimize climate impacts while protecting vulnerable populations
- Plan for city-wide resilience
- Safeguard water quality and critical areas
- Collaborate regionally for environmental sustainability.



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SUBJECT SUMMARY

- NFIP is managed by the Federal Emergency Management Agency (FEMA).
- The NFIP provides flood insurance to property owners, renters and businesses, and having this coverage helps them recover faster when floodwaters recede.
- In Washington State, the Dept. of Ecology helps jurisdictions adopt and enforce floodplain management regulations that mitigate flooding effects.
- Minor updates required by the end of 2025.
- Updating Floodplain Management regulations aligns with Vision 2044 Environmental Element



FEMA

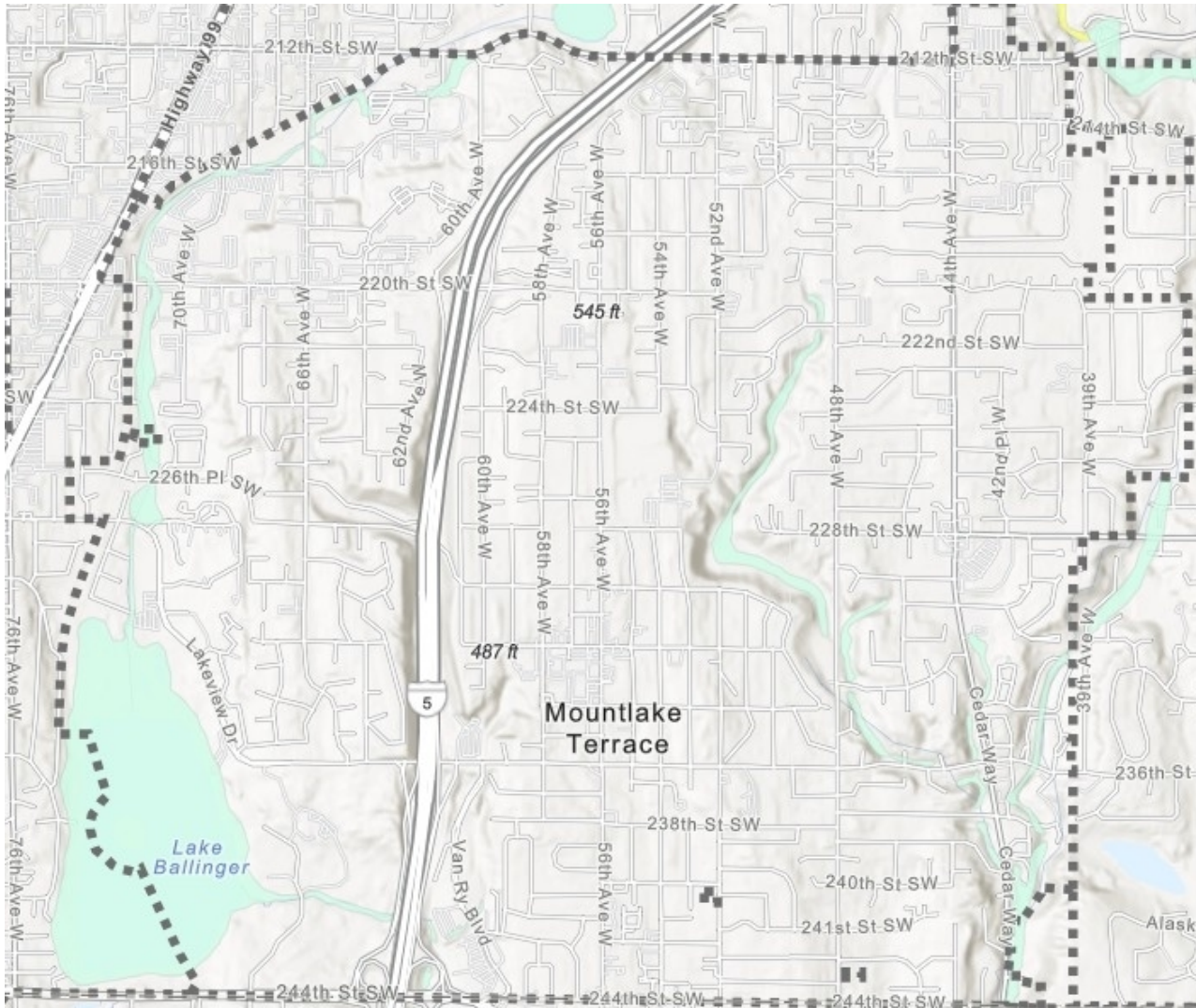


DEPARTMENT OF
ECOLOGY
State of Washington



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FLOOD INSURANCE RATE MAPS (FIRMs)



Mountlake Terrace contains only zone A areas of special flood hazard.

Zone A 
Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage.



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DEFINITIONS - PROPOSED UPDATES

- Updated definitions
 - Functionally dependent use
 - Historic Structure
 - Reasonably safe from flooding
 - Substantial improvement
 - Variance
- Removed
 - Water dependent
- Added words/phrases
 - Accessory structure
 - Area of shallow flooding
 - ASCE 24
 - Breakaway wall
 - Floodway
 - Water surface elevation



ADMINISTRATION - PROPOSED UPDATES

Application for Development Permit

- CLARIFIED:
 - Information provided must include the proposed elevation of lowest floor level in relation to mean sea level.
- ADDED:
 - Requirement to provide an engineering analysis indicating no rise of the base flood elevation when development is proposed in a floodway.



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ADMINISTRATION - PROPOSED UPDATES

Duties and Responsibilities of the Floodplain Administrator

Review all permits to determine that:

- ADDED:
 - The proposed development is not located in the floodway or meets no rise standards. Encroachments are prohibited unless otherwise proven not to result in increased flood levels through an engineering analysis
 - FEMA is notified when annexations occur in the Special Flood Hazard Area
 - FEMA is notified of changes to base flood elevation



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ADMINISTRATION - PROPOSED UPDATES

Duties and Responsibilities of the Floodplain Administrator

Information obtained and maintained:

- CLARIFIED:
 - Records required where base flood elevation is provided through FIS, FIRM, or as required by the code
 - As-built elevations of lowest floor are in relation to mean sea-level
- ADDED:
 - Certification required by No Rise Standards (Floodway Encroachments)



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ADMINISTRATION - PROPOSED UPDATES

Duties and Responsibilities of the Floodplain Administrator

- REMOVED:
 - Changes to Special Flood Hazard Areas
(no longer required by FEMA)



FEMA



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ADMINISTRATION - PROPOSED UPDATES

Review of Building Permits

Where elevation data is not available, either through the FIS, FIRM, or from another authoritative source (Section 4.3-2), applications for floodplain development shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available.



CONSTRUCTION PROVISIONS FOR FLOOD HAZARD REDUCTION - PROPOSED UPDATES

Utilities

- ADDED:
 - Waterwells shall be located on high ground that is not in the floodway

Subdivision and Development Proposals

- ADDED:
 - Where proposals are greater than 50 lots or 5 acres (whichever is less) include base flood elevation as part of application



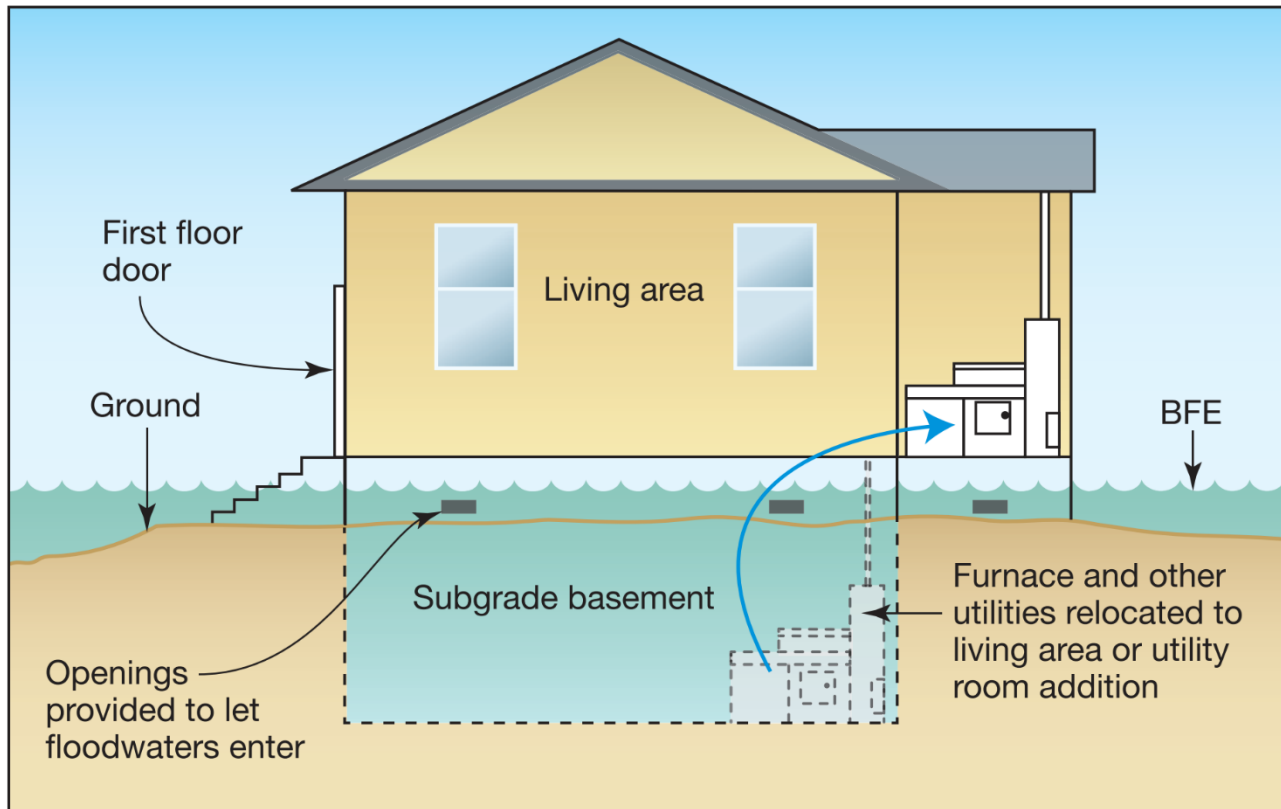
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CONSTRUCTION PROVISIONS FOR FLOOD HAZARD REDUCTION - PROPOSED UPDATES

Specific Standards

Residential & Nonresidential Construction

- **ADDED:**
 - Where the BFE has been determined or obtained, new construction and substantial improvement shall have the lowest floor, including basement, elevated one foot or more above the BFE. Mechanical equipment and utilities shall be waterproofed or elevated at least one foot above the BFE.



CONSTRUCTION PROVISIONS FOR FLOOD HAZARD REDUCTION - PROPOSED UPDATES

Specific Standards

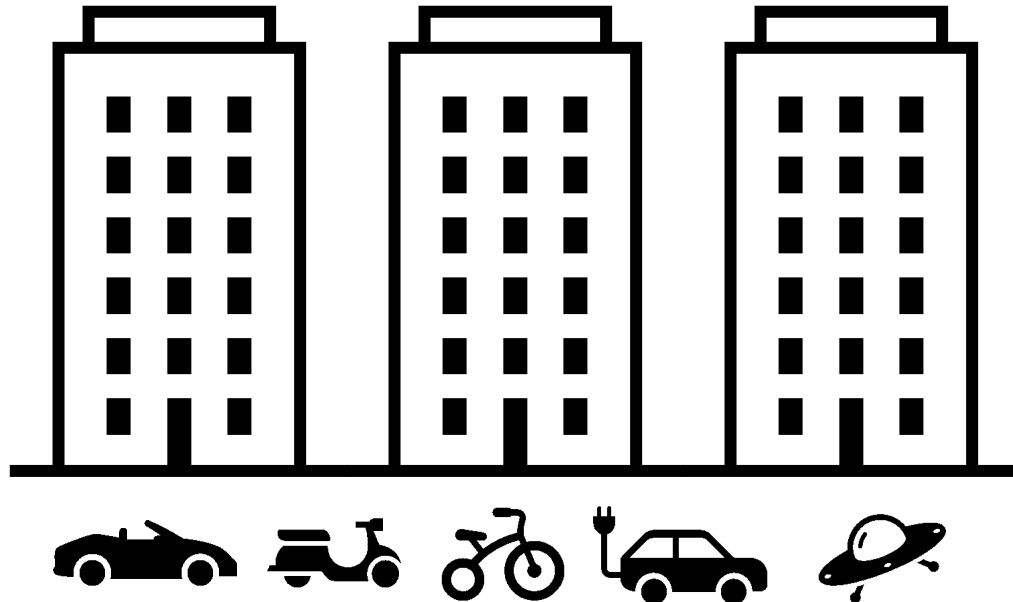
Non-residential Construction Only

- UPDATED:
 - IF BFE cannot be obtained, structures lowest floor must be two feet above highest adjacent grade
 - Fully enclosed areas below lowest floor are prohibited or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing entry and exit of floodwaters designed by a professional engineer or architect
 - Alternatively engineered openings are allowed
 - If above is not yet building must be structurally floodproofed
 - Insurance premiums are based on rates that are one foot below the flood proofed level

CONSTRUCTION PROVISIONS FOR FLOOD HAZARD REDUCTION - PROPOSED UPDATES

Specific Standards

- ADDED:
 - If buildings or manufactured homes 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.



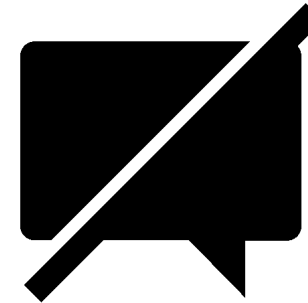
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COMMERCE 60-DAY REVIEW & SEPA

Commerce Review Period: July 10, 2025-September 8, 2025

SEPA Comment Period: August 8, 2025-August 22, 2025

No comments have been received.



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DISCUSSION & QUESTIONS



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Thank you



Chapter 16.18

FLOODPLAIN MANAGEMENT

Sections:

- 16.18.010 Purpose.
- 16.18.020 Definitions.
- 16.18.030 General provisions.
- 16.18.040 Administration.
- 16.18.050 Construction provisions for flood hazard reduction.
- 16.18.060 Variances.
- 16.18.070 Appeals.

16.18.010 Purpose.

A. Purpose. The purpose of this chapter is to promote the public health, safety, and general welfare; reduce the annual cost of flood insurance; and minimize public and private losses due to flood conditions in specific areas by provisions designed to:

1. Protect human life and health;
2. Minimize expenditure of public money for costly flood control projects;
3. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. Minimize prolonged business interruptions;
5. Minimize damage to public facilities and utilities, such as water and gas mains; electric, telephone, and sewer lines; and streets and bridges located in flood hazard areas;
6. Help maintain a stable tax base by providing for the sound use and development of flood hazard areas so as to minimize blight areas caused by flooding;
7. Notify potential buyers that the property is in a special flood hazard area;
8. Notify those who occupy flood hazard areas that they assume responsibility for their actions; and
9. Participate in and maintain eligibility for flood insurance and disaster relief.

B. Provisions for Reducing Flood Losses. In order to accomplish its purposes, this chapter includes methods and provisions to:

1. Restrict or prohibit development that is dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
2. Require that development vulnerable to floods be protected against flood damage at the time of initial construction;
3. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
4. Control filling, grading, dredging and other development which may increase flood damage; and
5. Prevent or regulate the construction of flood barriers that unnaturally divert floodwaters or may increase flood hazards in other areas. (Ord. 2770 § 3 (Exh. A), 2020).

16.18.020 Definitions.

The definitions in Chapter 16.15 MTMC, Critical Areas, are incorporated by reference when applicable. Where there is a conflict in definitions or their meaning with this chapter or other City regulations, this chapter shall prevail.

A. “Accessory structure” means a structure on the same parcel of property as a principal structure and the use of which is incidental to the use of the principal structure. For floodplain management purposes, the term includes only accessory structures used for parking and storage.

B. “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.

BC. “Appeal” means a request for a review of the interpretation of any provision of this chapter or a request for a variance.

CD. “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 one percent 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.

DE.C. “Area of special flood hazard” means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. It is shown on the flood insurance rate map (FIRM) as Zone A, AO, AH, A1-30, AE, A99, AR (V, VO, V1-30, VE). “Special flood hazard area” is synonymous in meaning with the phrase “area of special flood hazard.”

F. “ASCE 24” means the most recently published version of ASCE 24, Flood Resistant Design and Construction published by the American Society of Civil Engineers.

G.E.D. “Base flood” means the flood having a one percent chance of being equaled or exceeded in any given year (also referred to as the “100-year flood”).

H.F.E. “Base flood elevation (BFE)” means the elevation to which floodwater is anticipated to rise during the base flood.

I. G.F. “Basement” means any area of the building having its floor sub-grade (below ground level) on all sides.

H.J.G. “Breakaway wall” means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

Building. See subsection II of this section, “structure.”

IK.H. “Building code” means the currently effective versions of the International Building Code and the International Residential Code adopted by the State of Washington Building Code Council and as amended by the City of Mountlake Terrace.

JL.I. “Critical facility” means a facility for which even a slight chance of flooding might be too great. Critical facilities include but are not limited to schools, nursing homes, hospitals, police, fire and emergency response installations, and installations which produce, use, or store hazardous materials or hazardous waste.

KM.J. “Development” means any human-made 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.

LN.K. “Elevation certificate” means an administrative tool of the National Flood Insurance Program (NFIP) that can be used to provide elevation information, to determine the proper insurance premium rate, and to support a request for a letter of map amendment (LOMA) or letter of map revision based on fill (LOMR-F).

~~MO.L~~ “Elevated building” means, for insurance purposes, a non-basement building that has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

~~NP.M~~ “FEMA” or “the Federal Emergency Management Agency” means an agency within the Department of Homeland Security responsible for coordinating the federal government’s response to natural and manmade disasters and charged with providing both immediate and long-term assistance to local and state governments as well as individuals.

~~QQ.N~~ “Federal Insurance Administrator” means the administrator of the Federal Insurance and Mitigation Administration who is authorized to establish and carry out the National Flood Insurance Program (NFIP).

~~PR.O~~ Flood or Flooding.

1. A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - a. The overflow of inland or tidal waters.
 - b. The unusual and rapid accumulation or runoff of surface waters from any source.
 - c. Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in subsection (~~PΘ~~)(1)(b) of this section and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
2. 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 or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in subsection (~~PΘ~~)(1)(a) of this section.

~~QS.P~~ “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).

~~RT.Q~~ “Flood insurance rate map (FIRM)” means the official map for Mountlake Terrace, on which the Federal Insurance Administrator has delineated both the special hazard areas and the risk premium zones applicable to the city. A FIRM that has been made available digitally is called a digital flood insurance rate map (DFIRM).

~~SU.R~~ “Floodplain or flood prone area” means any land area susceptible to being inundated by water from any source. See subsection O of this section, Flood or Flooding.

~~TV.S~~ “Floodplain Administrator” means the Community and Economic Development Director, or designee, responsible for administering and enforcing the floodplain management regulations.

~~UW.T~~ “Floodplain management regulations” means zoning chapters, subdivision regulations, building codes, health regulations, special purpose chapters (such as floodplain chapter, grading chapter and erosion control chapter) and other application of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

~~VX.U~~ “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 base flood elevation.

~~WY~~ “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.”

~~XZ.V.~~ “Functionally dependent use” means a ~~water-dependent~~ use, which cannot perform its intended purpose unless it is located or carried out in close proximity to water ~~or on water~~. The term includes only docking ~~or fishing~~ facilities, port facilities that are necessary for the loading and unloading of ~~nonmotorized watercraft and its passengers, and incidental support facilities~~ cargo or passengers, and ship building and ship repair facilities, and does not include long-term storage or related manufacturing facilities.

~~YAA.W.~~ “Highest adjacent grade” means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

~~ZBB.X.~~ “Historic structure” means any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
2. 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;
3. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or
4. Individually listed on a ~~local-state~~ inventory of historic places in ~~communities-states~~ with historic preservation programs that have been certified either:
 - a. By an approved state program as determined by the Secretary of the Interior, or
 - b. Directly by the Secretary of the Interior in states without approved programs.

~~AACC.Y.~~ “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 nonelevation design requirements of this chapter (i.e., provided there are adequate flood ventilation openings).

~~DDBB.Z.~~ “Manufactured home” means, for floodplain management purposes, a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include a “recreational vehicle.”

~~EEEE.AA.~~ “Manufactured home park or subdivision” means, for floodplain management purposes, a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

~~DDFF.BB.~~ “Mean sea level” means, for purposes of the National Flood Insurance Program, the vertical datum to which base flood elevations shown on a community’s Flood Insurance Rate Map are referenced.

~~EEGG.CC.~~ “New construction” means, for the purposes of determining insurance rates, 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.

~~FFHH.DD.~~ One-Hundred-Year Flood or 100-Year Flood. See subsection ~~ED~~ of this section, “base flood.”

~~GGII.EE.~~ “Reasonably safe from flooding” means development that is designed and built to be safe from flooding based on consideration of current flood elevation studies, historical data, high water marks and other reliable data known to the community. In unnumbered A zones where flood elevation information is not available and cannot be

obtained by practicable means, reasonably safe from flooding means that the lowest floor is at least two feet above the Highest Adjacent Grade.

~~HHJJ.FF.~~ “Recreational vehicle” means a vehicle that is:

1. Built on a single chassis;
2. Four hundred square feet or less when measured at the largest horizontal projection;
3. Designed to be self-propelled or permanently towable by a light duty truck; and
4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

~~HHKK.GG.~~ Special Flood Hazard Area or SFHA. See subsection DE of this section, “area of special flood hazard.”

~~JLL.HH.~~ “Start of construction” includes substantial improvement and 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.

~~MMKK.H.~~ “Structure” means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally aboveground, as well as a manufactured home.

~~LNN.H.~~ “Substantial damage” means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

~~MMOO.KK.~~ “Substantial improvement” means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which ~~cumulatively over a three year period~~ equals or exceeds 50 percent of the market value of the structure before the “start of construction” of the improvement. This term includes structures which have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a structure to correct previously identified existing violations of state or local health, sanitary, or safety code specifications that have been identified by the local code enforcement official and that are the minimum necessary to assure safe living conditions; or
2. Any alteration of a “historic structure”; provided, that the alteration will not preclude the structure’s continued designation as a “historic structure.”

~~NNPP.LL.~~ “Variance” means a grant of relief by a community from the terms of a floodplain management regulation.

~~QOOO.MM.~~ “Violation” means to proceed or act in a manner that is inconsistent with or not permitted by a regulation. For floodplain management purposes, “violation” means the failure of a structure or other development to be fully compliant with the community’s floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this chapter is presumed to be in violation until such time as that documentation is provided.

~~RRPP.NN. “Water dependent” means a structure for commerce or industry that cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations.~~

~~SS. “Water Surface elevation” means the height, in relation to the vertical datum utilized in the applicable flood insurance study of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas. (Ord. 2770 § 3 (Exh. A), 2020).~~

16.18.030 General provisions.

A. Applicability. This chapter shall apply to the regulatory floodplain which is comprised of the special flood hazard areas within the boundaries of the City of Mountlake Terrace.

B. Basis for Establishing the Areas of Special Flood Hazard. The special flood hazard areas identified by the Federal Insurance Administrator in a scientific and engineering report entitled “The Flood Insurance Study (FIS) for Snohomish County and Incorporated Areas,” dated June 19, 2020, and any revisions thereto, with accompanying flood insurance rate maps (FIRMs) dated June 19, 2020, and any revisions thereto, are hereby adopted by reference and declared to be a part of this chapter. The FIS and the FIRM are on file at City of Mountlake Terrace, Mountlake Terrace, WA.

The best available information for flood hazard area identification as outlined in MTMC 16.18.040(C)(2), Use of Other Base Flood Data, shall be the basis for regulation until a new FIRM is issued that incorporates data utilized under that section of this chapter.

C. Compliance. All development within special flood hazard areas is subject to the terms of this chapter and other applicable regulations.

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 chapter and another chapter, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

E. Interpretation. In the interpretation and application of this chapter, all provisions shall be:

1. Considered as minimum requirements;
2. Liberally construed in favor of the governing body; and
3. Deemed neither to limit nor repeal any other powers granted under state statutes.

F. Warning and Disclaimer of Liability. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by human-made or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the City of Mountlake Terrace, 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. (Ord. 2770 § 3 (Exh. A), 2020).

16.18.040 Administration.

A. Establishment of Development Permit.

1. Development Permit Required.

- a. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in MTMC 16.18.030(B), Basis for Establishing the Areas of Special Flood Hazard.
- b. The permit shall be for all structures, including manufactured homes, and for all development including fill and other activities, as defined in MTMC 16.18.020, Definitions.

2. Application for Development Permit. Application for a development permit shall be made on forms furnished by the Floodplain Administrator and may include, but not be limited to, plans drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

- a. Proposed elevation in relation to mean sea level, of the lowest floor (including basement) of all structures recorded on a current FEMA elevation certificate form (Note: The Floodplain Administrator is to complete Section B of said form);
- b. Proposed elevation in relation to mean sea level to which any structure will be floodproofed;
- c. Where a structure is to be floodproofed, certification by a state of Washington registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in MTMC 16.18.050(B)(2), Nonresidential Construction;
- d. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development; ~~and~~
- e. Where development is proposed in a floodway, an engineering analysis indicating no rise of the Base Flood Elevation; and
- fe. Any other such information that may be reasonably required by the Floodplain Administrator in order to review and process the application at the time of application or subsequent thereto.

3. Permit processing procedures apply per Chapter 16.15 MTMC, Critical Areas, unless provided otherwise by this chapter.

B. Designation of the Floodplain Administrator. The Community and Economic Development Director is hereby designated the Floodplain Administrator for floodplain management in the City.

C. Duties and Responsibilities of the Floodplain Administrator. The Floodplain Administrator is to administer, implement, and enforce the floodplain management regulations in this chapter, to include, but not be limited to:

1. Permit Review. To review all development permits to determine that:

- a. The permit requirements and standards of this chapter have been satisfied;
- b. All other required state and federal permits have been obtained;
- c. The proposed development is not located in the floodway. If located in the floodway, assure the encroachment provisions of the No Rise Standards (Model ordinance 5.4.1) are met. Encroachments, including fill, new construction, substantial improvements, and other development is prohibited, 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.
- de. The site is reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available; and
- e. Notify FEMA when annexations occur in the Special Flood Hazard Area.
- f. Notify FEMA of changes to the base flood elevation within six months of when technical information of such changes becomes available. Such notification shall include technical or scientific information.
- ge. Issue a written determination, to grant or deny the application, which may be in the form of a building permit or land use entitlement or similar.

2. Use of Other Base Flood Data—When base flood elevation data has not been provided in accordance with MTMC 16.18.030(B), Basis for Establishing the Areas of Special Flood Hazard, the Floodplain Administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source in order to administer MTMC 16.18.050, Construction provisions for flood hazard reduction.

3. Information to Be Obtained and Maintained by Floodplain Administrator.

- a. Where base flood elevation data is provided through the FIS, FIRM, or required as in MTMC 16.18.040(C)(2), obtain and maintain a record of the actual (as-built) elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.
- b. For all new or substantially improved floodproofed nonresidential structures where base flood elevation data is provided through the FIS, FIRM, or as required in MTMC 16.18.040(C)(2):
 - i. Obtain and maintain a record of the elevation (in relation to mean sea level) to which the structure was floodproofed.
 - ii. Maintain the floodproofing certifications required in MTMC 16.18.040(A)(2).MTMC 16.18.050(B)(2).
- c. Records of all variance actions, including justification for their issuance.
- d. Improvement and damage calculations.
- e. Maintain for public inspection all records pertaining to the provisions of this chapter.
- f. Certification required by No Rise Standards (Floodway Encroachments)

4. Alteration of Watercourse and Notification. Whenever a watercourse is to be altered or relocated, the proponent shall first comply with subsection (C)(5) of this section, and provide a maintenance program to assure that the flood carrying capacity of the altered or relocated portion of said watercourse is maintained and not diminished. The Floodplain Administrator shall:

- a. Notify adjacent communities and the Department of Ecology prior to such alteration or relocation of a watercourse; and
- b. Submit evidence of such notification to the Federal Insurance Administrator through appropriate notification means.

5. Changes to Special Flood Hazard Area.

- a. If a project will alter the BFE or boundaries of the SFHA, then the project proponent shall provide the Floodplain Administrator with engineering documentation and analysis regarding the proposed change. If the change to the BFE or boundaries of the SFHA would normally require a letter of map change, then the project proponent shall initiate, and receive approval of, a conditional letter of map revision (CLOMR) prior to approval of the development permit. The project shall be constructed in a manner consistent with the approved CLOMR.
- b. If a CLOMR application is made, then the project proponent shall also supply the full CLOMR documentation package to the Floodplain Administrator to be attached to the floodplain development permit, including all required property owner notifications.
- c. The project proponent shall submit to FEMA any new technical information regarding changes to flooding conditions as soon as such information is known.

~~d. The city shall, within six months of being made aware of any new technical information regarding flooding conditions (44 CFR 65.3), submit such information to FEMA.~~

D. Penalties for Noncompliance.

1. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations.
2. Violations of the provisions of this chapter by failure to comply with any of its requirements shall constitute a misdemeanor.
3. The enforcement and penalty provisions in MTMC 16.15.380 shall be applicable to violations of this chapter.
4. Nothing herein contained shall prevent the City of Mountlake Terrace from taking such other lawful action as is necessary to prevent or remedy any violation. (Ord. 2770 § 3 (Exh. A), 2020).

E. Review of Building Permits

Where elevation data is not available, either through the FIS, FIRM, or from another authoritative source (Section 4.3-2), applications for floodplain development shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available.

16.18.050 Construction provisions for flood hazard reduction.

A. General Standards. In all areas of special flood hazards, the following standards are required:

1. Anchoring.
 - a. 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.
 - b. 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. For more detailed information, refer to guidebook FEMA-85, "Manufactured Home Installation in Flood Hazard Areas."
2. Construction Materials and Methods.
 - a. All construction as indicated below shall be consistent with the provisions of this chapter or Appendix G of the IBC or IRC, whichever is more restrictive.
 - b. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage (as described in FEMA Technical Bulletin 2).
 - c. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
 - d. Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located to prevent water from entering or accumulating within the components during conditions of flooding.
3. Storage of Materials and Equipment.
 - a. The storage or processing of materials that could be injurious to human, animal, or plant life if released due to damage from flooding is prohibited in special flood hazard areas.

- b. Storage of other materials or equipment may be allowed if not subject to damage by floods and if firmly anchored to prevent flotation, or if readily removable from the area within the time available after flood warning.

4. Utilities.

- a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems;

b. Water wells shall be located on high ground that is not in the floodway;

- b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;

- c. ~~W~~Waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

5. Subdivision Proposals and Development Proposals. All subdivisions, any divisions of land, new development, or redevelopment must:

- a. Be consistent with the need to minimize flood damage;
- b. Have public utilities and facilities, such as sewer, gas, electrical, and water systems, located and constructed to minimize or eliminate flood damage;
- c. Have adequate drainage provided to reduce exposure to flood damage;
- d. Where subdivision proposals and other proposed developments contain greater than 50 lots or 5 acres (whichever is the lesser) include base flood elevation data as part of the application.

B. Specific Standards. In all areas of special flood hazards, where base flood elevation data has been provided as set forth in MCMT 16.18.030(B) (Basis for Establishing the Areas of Special Flood Hazard) or MCMT 16.18.040(C)(2) (Use of Other Base Flood Data) the following provisions are required:

1. Residential Construction.

- a. In AE and A1-30 zones or other A zoned areas where the BFE has been determined or can be reasonably obtained, new construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one foot or more above the BFE. Mechanical equipment and utilities shall be waterproofed or elevated at least one foot above the BFE.

b. New construction and substantial improvement of any residential structure in an unnumbered A zone for which a BFE is not available and cannot be reasonably obtained shall be reasonably safe from flooding, but in all cases the lowest floor shall be at least two feet above the highest adjacent grade. Mechanical equipment and utilities shall be waterproof or likewise elevated.

~~ce~~b. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited or must be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.

- i. Designs must meet or exceed the following minimum criteria:

(A) Have a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding.

(B) The bottom of all openings shall be no higher than one foot above grade.

(C) Openings may be equipped with screens, louvers, valves, or other coverings or devices; provided, that they permit the automatic entry and exit of floodwater.

(D) A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters.

- ii. Alternatively, a registered engineer or architect may design and certify engineered openings and submit such record of certification to the Floodplain Administrator.
 - iii. All buildings or manufactured homes constructed or substantially improved with fully enclosed areas below the lowest floor shall be used solely for parking of vehicles, building access, or storage.
2. Nonresidential Construction. New construction, reconstruction, or substantial improvement of any commercial, industrial or other nonresidential structure shall meet the requirements of subsection (B)(1) of this section for residential construction, or shall:

~~a. Together with attendant utility and sanitary facilities, be designed so that below two feet or more above the base flood level when established or at least two feet above highest adjacent grade, whichever is greater, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and~~

~~b. Provided, that where a nonresidential structure is intended to be made watertight below the base flood level when established or at least two feet above highest adjacent grade, whichever is greater, shall have:~~

~~i. A registered professional engineer or architect develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of the above; and~~

~~ii. Submit such record of such certification to the Floodplain Administrator.~~

a. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall meet all of the following requirements:

i) In AE and A1-30 zones or other A zoned areas where the BFE has been determined or can be reasonably obtained:

b. New construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall have the lowest floor, including basement, elevated one foot or more above the 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.

i) If located in an Unnumbered A zone for which a BFE is not available and cannot be reasonably obtained, the structure shall be reasonably safe from flooding, but in all cases the lowest floor shall be at least two feet above the Highest Adjacent Grade.

ii) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall 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:

iii) Have a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding.

- iv) The bottom of all openings shall be no higher than one foot above grade.
 - v) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwater.
 - vi) A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters.
 - c. Alternatively, a registered engineer or architect may design and certify engineered openings.
 - d. If the requirements of subsection 1 are not met, then new construction and substantial improvement of any commercial, industrial or other nonresidential structure shall meet all of the following requirements:
 - i) 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;
 - ii) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
 - iii) 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 official as set forth in Section 4.3-3(3);
 - e. (Applicants who are flood proofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the flood proofed level (e.g. a building flood proofed to the base flood level will be rated as one foot below). Flood proofing the building an additional foot will reduce insurance premiums.)
- 3. Manufactured Homes. All manufactured homes to be placed or substantially ~~improved on~~improved on sites shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated two feet or more above the base flood elevation or highest adjacent grade, whichever is higher and be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement.*
- 4. Recreational Vehicles. Recreational vehicles placed on an approved site are required to:
 - a. Be on the site for not more than two weeks within any six-month period; and
 - b. Be 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, and have no permanently attached additions; or
 - c. Meet the requirements of subsection (B)(3) of this section for manufactured homes.
- 5. Appurtenant Structures (Detached Garages and Small Storage Structures).
 - a. Appurtenant structures used solely for parking of vehicles or limited storage may be constructed such that the lowest floor is below the BFE, provided the structure is designed and constructed in accordance with the following requirements:
 - i. Use of the appurtenant structure must be limited to parking of vehicles or limited storage. The structure must not be used for human habitation; and

- ii. The portions of the appurtenant structure located below the BFE must be built using flood-resistant materials;
 - iii. The appurtenant structure must be adequately anchored to prevent flotation, collapse, and lateral movement;
 - iv. Any machinery or equipment servicing the appurtenant structure must be elevated or floodproofed to or above the BFE;
 - v. The appurtenant structure must be designed to allow for the automatic entry and exit of floodwaters in accordance with subsection (B)(1)(b) of this section;
 - vi. The structure shall have low damage potential; and
 - vii. If the structure is converted to another use, it must be brought into full compliance with the standards governing such use.
- b. Detached garages, storage structures, and other appurtenant structures not meeting the above standards must be constructed in accordance with all applicable standards in this subsection B.
 - c. Upon completion of any structure, certification that the requirements of this section have been satisfied shall be provided to the Floodplain Administrator for verification.
 - d. The maximum cumulative footprint of all appurtenant structures on a single development site is 500 square feet. The maximum height of any appurtenant structure is 20 feet to the ridgeline and maximum sidewall height of 14 feet on at least two sides.

6. Enclosed Area Below the Lowest Floor. If buildings or manufactured homes 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.

C. Other Development. All development, including human-made changes to improved or unimproved real estate for which specific provisions are not specified in this chapter or the state building codes with adopted amendments and any local amendments, shall:

1. Be located and constructed to minimize flood damage;
2. Meet the encroachment limitations of this chapter if located in a regulatory floodway;
3. Be anchored to prevent flotation, collapse, or lateral movement resulting from hydrostatic loads, including the effects of buoyancy, during conditions of the design flood;
4. Be constructed of flood damage-resistant materials;
5. Meet the flood opening requirements of subsection (B)(1) of this section, Residential Construction; and
6. Have mechanical, plumbing, and electrical systems above the design flood elevation or meet the requirements of ASCE 24, except that minimum electrical service required to address life safety and electric code requirements is permitted below the design flood elevation provided it conforms to the provisions of the electrical part of the building code for wet locations.

D. Critical Facility. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the SFHA (100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to

or above the level of the BFE shall be provided to all critical facilities to the extent possible. (Ord. 2770 § 3 (Exh. A), 2020).

16.18.060 Variances.

A. Purpose and Limits.

1. Variances are strictly limited and may only be granted for a parcel of property with physical characteristics so unusual that complying with the requirements of this chapter would create an exceptional hardship to the applicant or the surrounding property owners;
2. The characteristics must be unique to the property and not be shared by adjacent parcels; and
3. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants, or the property owners.

B. Requirements for Variance Criteria.

1. A variance request shall demonstrate consistency with the following:
 - a. The granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or chapters;
 - b. For the repair, rehabilitation, or restoration of historic structures, the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure;
 - c. Upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;
 - d. The showing of good and sufficient cause;
 - e. Upon a determination that failure to grant the variance would result in exceptional hardship to the applicant;
 - f. The use cannot be performed in its intended purpose unless it is located or carried out in close proximity to water. This includes only facilities defined in this chapter in the definition of "functionally dependent use";
 - g. Any additional variance criteria in ~~general and~~ Chapter ~~16.19.15-110.210~~ MTMC apply.
2. In considering variance applications, the City of Mountlake Terrace shall consider all technical evaluations, all relevant factors, all standards and criteria specified in other sections of this chapter, and:
 - a. The danger that materials may be swept onto other lands to the injury of others;
 - b. The danger to life and property due to flooding or erosion damage;
 - c. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - d. The importance of the services provided by the proposed facility to the community;
 - e. The necessity to the facility of a waterfront location, where applicable;
 - f. The availability of alternative locations for the proposed use, which are not subject to flooding or erosion damage;
 - g. The compatibility of the proposed use with existing and anticipated development;

- h. The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
- i. The safety of access to the property in time of flood for ordinary and emergency vehicles;
- j. The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site; and
- k. The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities, such as sewer, gas, electrical, water system, and streets and bridges.

C. Review and Administration.

- 1. The review and approval process shall be per MTMC 16.15.350.
- 2. Record Keeping. The Floodplain Administrator shall maintain a record of all variance actions, including justification for their issuance.
- 3. Decisions.
 - a. The responsible decision maker (Floodplain Administrator or Hearing Examiner) shall condition the variance as needed to ensure that the requirements and criteria of this chapter are met.
 - b. A notice of decision shall be issued per Chapter 18.05 MTMC.
 - c. Any applicant to whom a variance is granted shall be given written notice by the Floodplain Administrator that:
 - i. The issuance of a variance to construct a structure below the BFE will result in increased premium rates from NFIP for flood insurance coverage; and
 - ii. Such construction below the BFE increases risks to life and property. (Ord. 2770 § 3 (Exh. A), 2020).

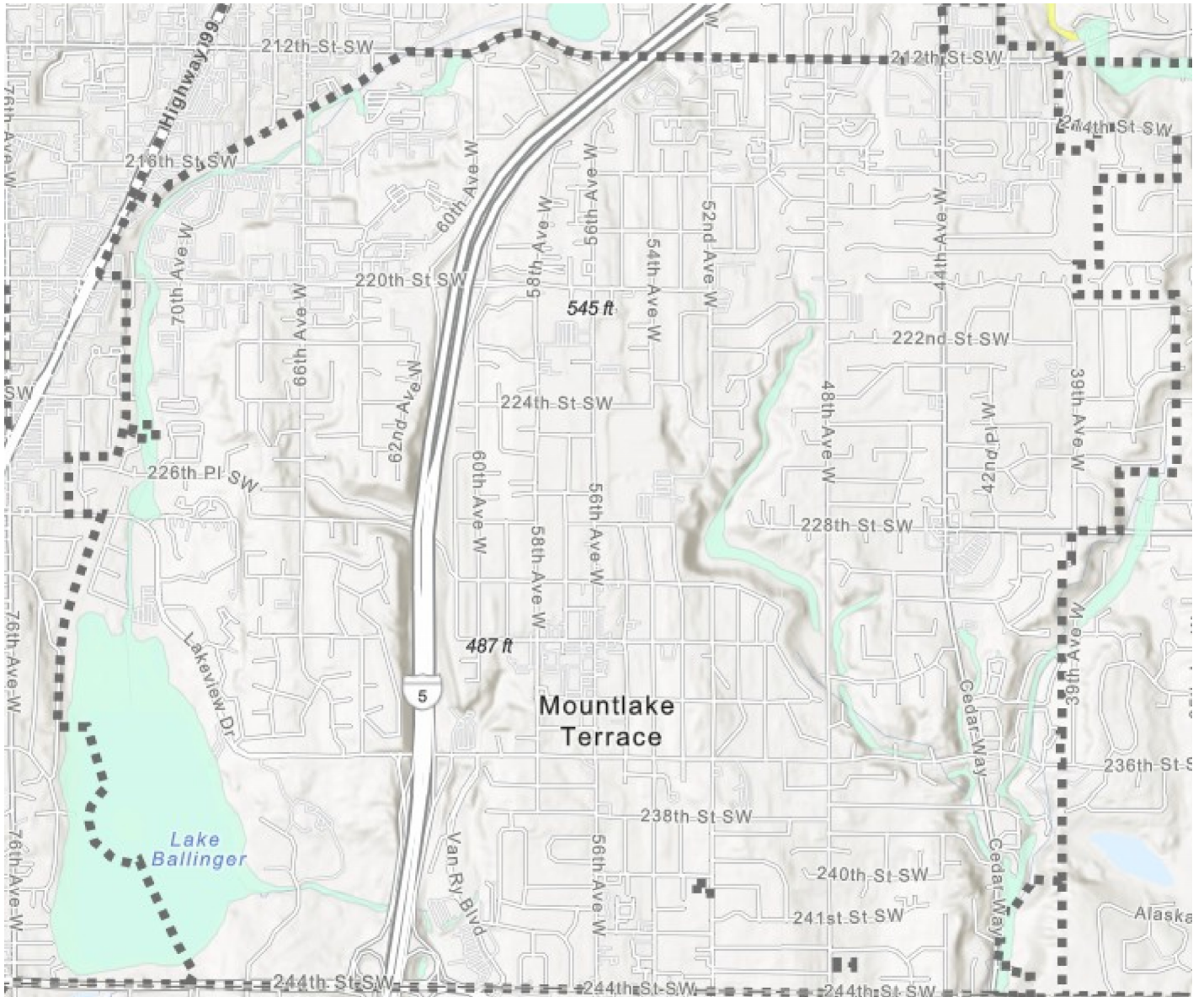
16.18.070 Appeals.

A. Appeals of administrative interpretations and administrative approvals may be appealed by the applicant or any party of record to the Hearing Examiner, pursuant to Chapter 18.05 MTMC.

B. Appeals from the final decision of the Hearing Examiner, and for which all other appeals specifically authorized have been timely exhausted, shall be made to Snohomish County Superior Court within 21 days of the date of the notice of action, unless another time period is established by state law or local ordinance. (Ord. 2770 § 3 (Exh. A), 2020).

Flood Rate Insurance Maps (FIRMs)
Mountlake Terrace

Zone A: Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage.



WA State Model Ordinance

December 2020 Version

Simplified Evaluation Sheet

Locality: Mountlake Terrace

Reviewer's Name: Sarah Caggiano

Review Date: 3/12/2025

Reason for Review: CAC

Criteria & Model Ordinance Reference	Community Regulation Citation & Federal Regulation Reference
Section 1.0 - Statutory Authorization, Findings of Fact, Purpose, and Objectives	<i>(Not mandatory to adopt section 1.0)</i>
1.1 Statutory Authorization The Legislature of the State of Washington has delegated the responsibility to local communities to adopt floodplain management regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the {Decision Making Body} of {Community Name}, does ordain as follows:	Not included, suggest adding
1.2 Findings of Fact The flood hazard areas of {Community Name} are subject to periodic inundation, which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare. These flood losses may be caused by the cumulative effect of obstructions in areas of special flood hazards that increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately flood proofed, elevated, or otherwise protected from flood damage also contribute to the flood loss.	Not included, suggest adding

1.3 Statement of Purpose It is the purpose of this ordinance to promote the public health, safety, and general welfare; reduce the annual cost of flood insurance; and minimize public and private losses due to flood conditions in specific areas by provisions designed to: 1) Protect human life and health; 2) Minimize expenditure of public money for costly flood control projects; 3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; 4) Minimize prolonged business interruptions; 5) Minimize damage to public facilities and utilities, such as water and gas mains; electric, telephone, and sewer lines; and streets and bridges located in flood hazard areas; 6) Help maintain a stable tax base by providing for the sound use and development of flood hazard areas so as to minimize blight areas caused by flooding; 7) Notify potential buyers that the property is in a Special Flood Hazard Area; 8) Notify those who occupy flood hazard areas that they assume responsibility for their actions; and 9) Participate in and maintain eligibility for flood insurance and disaster relief.	16.18.010 (A)
1.4 Methods of Reducing Flood Losses In order to accomplish its purposes, this ordinance includes methods and provisions for: 1) Restricting or prohibiting development that is dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities, 2) Requiring that development vulnerable to floods be protected against flood damage at the time of initial construction; 3) Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters; 4) Controlling filling, grading, dredging, and other development, which may increase flood damage; and 5) Preventing or regulating the construction of flood barriers that unnaturally divert floodwaters or may increase flood hazards in other areas.	16.18.010(B)

Section 2.0 – Definitions	<i>44 CFR 59.1 (Not mandatory to adopt all definitions as shown)</i>
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	<i>* Terms with one asterisk trigger a specific minimum requirement and must be adopted.</i>
Accessory Structure: a structure on the same parcel of property as a principal structure and the use of which is incidental to the use of the principal structure. For floodplain management purposes, the term includes only accessory structures used for parking and storage. *Alteration of watercourse: Any action that will change the location of the channel occupied by water within the banks of any portion of a riverine waterbody. Appeal: A request for a review of the interpretation of any provision of this ordinance or a request for a variance. *Area of shallow flooding: A designated zone AO, AH, AR/AO or AR/AH (or VO) on a community's Flood Insurance Rate Map (FIRM) with a one percent 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. *Area of special flood hazard: The land in the floodplain within a community subject to a 1 percent or greater chance of flooding in any given year. It is shown on the Flood Insurance Rate Map (FIRM) as zone A, AO, AH, A1-30, AE, A99, AR (V, VO, V1-30, VE). "Special flood hazard area" is synonymous in meaning with the phrase "area of special flood hazard". ASCE 24: The most recently published version of ASCE 24, Flood Resistant Design and Construction, published by the American Society of Civil Engineers. *Base flood: The flood having a 1% chance of being equaled or exceeded in any given year (also referred to as the "100-year flood"). *Base Flood Elevation (BFE): The elevation to which floodwater is anticipated to rise during the base flood. *Basement: Any area of the building having its floor sub-grade (below ground level) on all sides. Building: See "Structure." Building Code: The currently effective versions of the International Building Code and the International Residential Code adopted by the State of	16.18.020 • Suggest adding optional definitions • Must add Area of Shallow Flooding • Must add Floodway • Edited Functionally dependent use • Edited Substantial improvement • Edited Variance

Breakaway wall: A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

Coastal High Hazard Area: An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The area is designated on the FIRM as zone V1-30, VE or V.

Critical Facility: A facility for which even a slight chance of flooding might be too great. Critical facilities include (but are not limited to) schools, nursing homes, hospitals, police, fire and emergency response installations, and installations which produce, use, or store hazardous materials or hazardous waste.

***Development:** Any man-made 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.

Elevation Certificate: An administrative tool of the National Flood Insurance Program (NFIP) that can be used to provide elevation information, to determine the proper insurance premium rate, and to support a request for a Letter of Map Amendment (LOMA) or Letter of Map Revision based on fill (LOMR-F).

Elevated Building: For insurance purposes, a non-basement building that has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.

Essential Facility: This term has the same meaning as "Essential Facility" defined in ASCE 24. Table 1-1 in ASCE 24-14 further identifies building occupancies that are essential facilities.

Existing Manufactured Home Park or Subdivision: A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by the community.

Expansion to an Existing Manufactured Home Park or Subdivision: The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

Farmhouse: A single-family dwelling located on a farm site where resulting agricultural products are not produced for the primary consumption or use by the occupants and the farm owner.

***Flood or Flooding:**

- 1) A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - a) The overflow of inland or tidal waters.
 - b) The unusual and rapid accumulation or runoff of surface waters from any source.
 - c) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
- 2) 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 or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (1)(a) of this definition.

***Flood elevation study:** 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).

***Flood Insurance Rate Map (FIRM):** The official map of a community, on which the Federal Insurance Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).

Flood Insurance Study: See "Flood Elevation Study."

***Floodplain or flood-prone area:** Any land area susceptible to being inundated by water from any source. See "Flood or flooding."

***Floodplain administrator:** The community official designated by title to administer and enforce the floodplain management regulations.

Floodplain management regulations: Zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as floodplain ordinance, grading ordinance and erosion control ordinance) and other application of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

***Floodproofing:** 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 Base Flood Elevation.

***Floodway:** 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."

***Functionally dependent use:** A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, and does not include long-term storage or related manufacturing facilities.

***Highest adjacent grade:** The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

***Historic structure:** Any structure that is:

- 1) 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;
- 2) 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;

- 3) 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
- 4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - a) By an approved state program as determined by the Secretary of the Interior, or
 - b) Directly by the Secretary of the Interior in states without approved programs.

***Lowest Floor:** 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).

Manufactured Home: A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured home" does not include a "recreational vehicle."

Manufactured Home Park or Subdivision: A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

***Mean Sea Level:** For purposes of the National Flood Insurance Program, the vertical datum to which Base Flood Elevations shown on a community's Flood Insurance Rate Map are referenced.

***New construction:** For the purposes of determining insurance rates, 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.

New Manufactured Home Park or Subdivision: A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of adopted floodplain management regulations adopted by the community.

One-hundred-year flood or 100-year flood: See "Base flood."

Reasonably Safe from Flooding: Development that is designed and built to be safe from flooding based on consideration of current flood elevation studies, historical data, high water marks and other reliable data known to the community. In unnumbered A zones where flood elevation information is not available and cannot be obtained by practicable means, reasonably safe from flooding means that the lowest floor is at least two feet above the Highest Adjacent Grade.

***Recreational Vehicle:** A vehicle,

- 1) Built on a single chassis;
- 2) 400 square feet or less when measured at the largest horizontal projection;
- 3) Designed to be self-propelled or permanently towable by a light duty truck; and
- 4) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

***Start of construction:** Includes substantial improvement and 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.

*Structure: For floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. *Substantial Damage: Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. *Substantial improvement: Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include either: 1) Any project for improvement of a structure to correct previously identified existing violations of state or local health, sanitary, or safety code specifications that have been identified by the local code enforcement official and that are the minimum necessary to assure safe living conditions; or 2) Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure." *Variance: A grant of relief by a community from the terms of a floodplain management regulation. Water surface elevation: The height, in relation to the vertical datum utilized in the applicable flood insurance study of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas. Water Dependent: A structure for commerce or industry that cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations.	

Section 3.0 – General Provisions	
3.1 Lands to Which This Ordinance Applies (44 CFR 59.22(a)) This ordinance shall apply to all special flood hazard areas within the boundaries of {Community Name}.	(44 CFR 59.22(a)) 16.18.030(A)

3.2 Basis for Establishing the Areas of Special Flood Hazard The special flood hazard areas identified by the Federal Insurance Administrator in a scientific and engineering report entitled “The Flood Insurance Study (FIS) for {exact title of study}” dated {date}, and any revisions thereto, with accompanying Flood Insurance Rate Maps (FIRMs) dated {date}, and any revisions thereto, are hereby adopted by reference and declared to be a part of this ordinance. The FIS and the FIRM are on file at {community address}. The best available information for flood hazard area identification as outlined in Section 4.3-2 shall be the basis for regulation until a new FIRM is issued that incorporates data utilized under Section 4.3-2.	<i>Mandatory (44 CFR 60.3 (preamble) and 44 CFR 60.2(h)). *In some communities, the phrase “and any revisions thereto” is not considered legally binding and should not be adopted.</i> 16.18.030(B)
3.3 Compliance All development within special flood hazard areas is subject to the terms of this ordinance and other applicable regulations.	<i>Mandatory (44 CFR 60.2(h))</i> 16.18.030(C)
3.4 Penalties For Noncompliance No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this ordinance and other applicable regulations. Violations of the provisions of this ordinance by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions), shall constitute a misdemeanor. Any person who violates this ordinance or fails to comply with any of its requirements shall upon conviction thereof be fined not more than _____ or imprisoned for not more than ___ days, or both, for each violation, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the _____ from taking such other lawful action as is necessary to prevent or remedy any violation.	<i>Mandatory (44 CFR 60.2(h))</i> 16.18.040(D) - Optional clarifying language - Check reference aligns with statutory language (MTMC 16.15.380)
3.5 Abrogation and Greater Restrictions This ordinance 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.	16.18.030(D)
3.6 Interpretation In the interpretation and application of this ordinance, all provisions shall be: 1) Considered as minimum requirements; 2) Liberally construed in favor of the governing	<i>Recommended (Not mandatory)</i> 16.18.030(E)

body; and, 3) Deemed neither to limit nor repeal any other powers granted under state statutes.	
3.7 Warning and Disclaimer of Liability The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of {Community Name}, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.	<i>Recommended (Not mandatory)</i> 16.18.030(F)
3.8 Severability This ordinance and the various parts thereof are hereby declared to be severable. Should any Section of this ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any portion thereof other than the Section so declared to be unconstitutional or invalid.	<i>Mandatory (44 CFR 60.1(b)) The severability cause may be included in the adopting ordinance and left uncodified.</i> 16.18.030(G) Missing must add

Section 4.0 – Administration	
4.1 Establishment of Development Permit 4.1-1 Development Permit Required A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 3.2. The permit shall be for all structures including manufactured homes, as set forth in the “Definitions,” and for all development including fill and other activities, also as set forth in the “Definitions.”	<i>Mandatory (44 CFR 60.3(b)(1))</i> 16.18.040(A1)
4.1-2 Application for Development Permit Application for a development permit shall be made on forms furnished by the Floodplain Administrator and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:	<i>Note: The format of Section 4.1-2 is not mandatory but the elevation information in subsection 1 and information in subsections 2 through 7 is mandatory.</i> <i>Elevation Certificates are not mandatory outside of Community Rating System communities but highly recommended.</i> 16.18.040(A2)

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. 1 2) Elevation in relation to mean sea level to which any structure has been flood proofed; 2 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 in Section 5.2-2; 3 4) Description of the extent to which a watercourse will be altered or relocated as a result of proposed development; 4 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; and 5 7) Any other such information that may be reasonably required by the Floodplain Administrator in order to review the application. 6	• Language update • Missing point 6 must add
4.2 Designation of the Floodplain Administrator The {job title of the appropriate administrative official} is hereby appointed to administer, implement, and enforce this ordinance by granting or denying development permits in accordance with its provisions. The Floodplain Administrator may delegate authority to implement these provisions.	<i>Mandatory (44 CFR 59.22(b)(1))</i> 16.18.040(B) 16.18.040(C)
4.3 Duties & Responsibilities of the Floodplain Administrator Duties of the (<i>Floodplain Administrator</i>) shall include, but not be limited to:	<i>Mandatory, (44 CFR 60.1 (b))</i> 16.18.040(C)
4.3-1 Permit Review Review all development permits to determine that: 1) The permit requirements of this ordinance have been satisfied; 1 2) All other required state and federal permits have been obtained; 2 3) The site is reasonably safe from flooding; 4 4) The proposed development is not located in the floodway. If located in the floodway, assure the encroachment provisions of Section 5.4-1 are met. 3 5) Notify FEMA when annexations occur in the Special Flood Hazard Area. 5 6) Notify FEMA of changes to the base flood elevation within six months of when technical information of such changes becomes available. Such notification shall include technical or scientific information. 6	<i>Mandatory, (44 CFR 60.1 (b))</i> 16.18.040(C1A-G) • Must add point 4 • Must add point 5 and 6 • Must add no rise section for reference to this section

4.3-2 Use of Other Base Flood Data (In A and V Zones) When base flood elevation data has not been provided (in A or V zones) in accordance with Section 3.2, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the Floodplain Administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source, in order to administer Sections 5.2, SPECIFIC STANDARDS, and 5.4 FLOODWAYS.	<i>Mandatory</i> (44 CFR 60.3(b)(4)) 16.18.040(C2)
4.3-3 Information to be Obtained and Maintained 1) Where base flood elevation data is provided through the FIS, FIRM, or required as in Section 4.3-2, obtain and maintain a record of the actual (as-built) elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement. 1 2) Documentation of the elevation of the bottom of the lowest horizontal structural member in V or VE zones. 3) For all new or substantially improved flood proofed nonresidential structures where base flood elevation data is provided through the FIS, FIRM, or as required in Section 4.3-2: a) Obtain and maintain a record of the elevation (in relation to mean sea level) to which the structure was flood proofed. b) Maintain the flood proofing certifications required in Section 4.1-2(3). 2 4) Certification required by Section 5.4.1 {or the numbering system used by the community} (floodway encroachments). 4 5) Records of all variance actions, including justification for their issuance. 5 6) Improvement and damage calculations. 6 7) Maintain for public inspection all records pertaining to the provisions of this ordinance. 3	<i>Required, verbatim</i> (44 CFR 60.3 (b)(5)) (44 CFR 60.3(b)(5)(i) and (iii)) (44 CFR 60.3(e)(2)) (44 CFR 60.3(b)(5)(i) and (iii)) (44 CFR 60.3(b)(5)(ii)) (44 CFR 60.3(b)(5)(iii)) (44 CFR 60.3(d)(3)) (44 CFR 60.6(a)(6)) (44 CFR 60.3(b)(5)(iii)) 16.18.040(C3) Missing must add
4.3-4 Notification to Other Entities Whenever a watercourse is to be altered or relocated: 1) Notify adjacent communities and the Department of Ecology prior to such alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administrator through appropriate notification means, and 2) Assure that the flood carrying capacity of the altered or relocated portion of said watercourse is maintained.	<i>Mandatory</i> (44CFR 60.3(b)(6)) (44CFR 60.3(b)(7)) 16.18.040(C4)

4.3-5 Interpretation of FIRM Boundaries Make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (e.g. where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation. Such appeals shall be granted consistent with the standards of Section 60.6 of the Rules and Regulations of the NFIP.	(44 CFR 59-76) <i>(This section is not required, but if the Local Administrators are performing this task on a regular basis, it should be adopted.)</i> Missing, recommend adding
4.3-6 Review of Building Permits Where elevation data is not available, either through the FIS, FIRM, or from another authoritative source (Section 4.3-2), applications for floodplain development shall be reviewed to assure that proposed construction will be <i>reasonably safe from flooding</i>. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. (Failure to elevate habitable buildings at least two feet above the highest adjacent grade in these zones may result in higher insurance rates.)	Mandatory (44 CFR 60.3(a)(3)) Missing must add

Section 5.0 – Provisions for Flood Hazard Reduction	<i>(Section 5.0 is required)</i>
5.1 General Standards In all areas of special flood hazards, the following standards are required:	16.18.050(A)
5.1-1 Anchoring 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.	Mandatory (44 CFR 60.3(a)(b)) (44 CFR 60.3(a)(3)(i)) (44 CFR 60.3(b)(8)) <i>For more detailed information, refer to guidebook, FEMA-85, "Manufactured Home Installation in Flood Hazard Areas."</i> 16.18.050(A1)
5.1-2 Construction Materials and Methods 1) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage. 2) All new construction and substantial	Mandatory (44 CFR 60.3(a)(3)(ii-iv)) 16.18.050(A2)

improvements shall be constructed using methods and practices that minimize flood damage. 3) Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.	
5.1-3 Storage of Materials and Equipment 1) The storage or processing of materials that could be injurious to human, animal, or plant life if released due to damage from flooding is prohibited in special flood hazard areas. 2) Storage of other material or equipment may be allowed if not subject to damage by floods and if firmly anchored to prevent flotation, or if readily removable from the area within the time available after flood warning.	<i>(recommended)</i> 16.18.050(A3)
5.1-4 Utilities 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) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters; 4) Onsite waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.	<i>Mandatory</i> <i>(44 CFR 60.3(a)(5)(6))</i> <i>WAC 173-160-171 prohibits new water wells in floodways.</i> 16.18.050(A4) • Missing must add
5.1-5 Development and Subdivision Proposals All subdivisions, as well as 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. 4) Where subdivision proposals and other proposed developments contain greater than 50 lots or 5 acres (whichever is the lesser) base flood elevation data shall be included as part of the application.	<i>Mandatory</i> <i>(44 CFR 60.3(a)(4) and (b)(3))</i> 16.18.050(A5) • Language updated
5.2 Specific Standards In all areas of special flood hazards where base flood elevation data has been provided as set forth in Section 3.2, BASIS FOR ESTABLISHING THE AREAS OF	<i>Mandatory</i> <i>(44 CFR 60.3(c)(1))</i> <i>(Additional standards were clarified in FEMA Technical Bulletin 11-01 to allow below-grade crawlspace construction for buildings located in the special flood</i>

SPECIAL FLOOD HAZARD, or Section 4.3-2, USE OF OTHER BASE FLOOD DATA. The following provisions are required:	<i>hazard areas. However, the standards in 11-01 must be specifically adopted, and adopting them can result in a 20% increase in flood insurance premiums.)</i> 16.18.505(B) • Language update
5.2-1 Residential Construction 1) In AE and A1-30 zones or other A zoned areas where the BFE has been determined or can be reasonably obtained, new construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one foot or more above the BFE. Mechanical equipment and utilities shall be waterproofed or elevated at least one foot above the BFE. 1 2) New construction and substantial improvement of any residential structure in an AO zone shall meet the requirements in Appendix A. 3 3) New construction and substantial improvement of any residential structure in an Unnumbered A zone for which a BFE is not available and cannot be reasonably obtained shall be reasonably safe from flooding, but in all cases the lowest floor shall be at least two feet above the Highest Adjacent Grade. 4 4) New construction and substantial improvement of any residential structure in a V, V1-30, or VE zone shall meet the requirements in Appendix B. 5) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs must meet or exceed the following minimum criteria: 2 a) Have a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding. b) The bottom of all openings shall be no higher than one foot above grade. c) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwater. d) A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters. Alternatively, a registered engineer or architect may design and certify engineered openings.	<i>Mandatory</i> (44 CFR 60.3(c)(2) and (5)) (44 CFR 60.3(c)(7)) (44 CFR 60.3(b)(2)) (44 CFR 60.3(e)) (44 CFR 60.3(c)(5)) 16.18.050(B1) • Missing 1 must add
5.2-2 Nonresidential Construction New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall meet the requirements of subsection 1 or 2, below.	<i>Mandatory</i> (44 CFR 60.3(c)(3) and (4)) 16.18.050(B2) missing must add/redo

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| <p>1) New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall meet all of the following requirements:</p> <ul style="list-style-type: none">a) In AE and A1-30 zones or other A zoned areas where the BFE has been determined or can be reasonably obtained:
New construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall have the lowest floor, including basement, elevated one foot or more above the 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.b) If located in an AO zone, the structure shall meet the requirements in Appendix A.c) If located in an Unnumbered A zone for which a BFE is not available and cannot be reasonably obtained, the structure shall be reasonably safe from flooding, but in all cases the lowest floor shall be at least two feet above the Highest Adjacent Grade.d) If located in a V, V1-30, or VE zone, the structure shall meet the requirements in Appendix B.e) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall 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:<ul style="list-style-type: none">i) Have a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding.ii) The bottom of all openings shall be no higher than one foot above grade.iii) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwater.iv) A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters.Alternatively, a registered engineer or architect may design and certify engineered openings. <p>2) If the requirements of subsection 1 are not met, then new construction and substantial improvement of any commercial, industrial or other nonresidential structure shall meet all of the following requirements:</p> <ul style="list-style-type: none">a) Be dry flood proofed so that below one foot or more above the base flood level the structure | |
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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; b) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; c) 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 official as set forth in Section 4.3-3(3); (Applicants who are flood proofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the flood proofed level (e.g. a building flood proofed to the base flood level will be rated as one foot below). Flood proofing the building an additional foot will reduce insurance premiums.)	
5.2-3 Manufactured Homes 1) All manufactured homes to be placed or substantially improved on sites shall 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*. This applies to manufactured homes: a) Outside of a manufactured home park or subdivision, b) In a new manufactured home park or subdivision, c) In an expansion to an existing manufactured home park or subdivision, or d) In an existing manufactured home park or subdivision on a site which a manufactured home has incurred “substantial damage” as the result of a flood; and 2) Manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision that are not subject to the above manufactured home provisions be elevated so that either: a) The lowest floor of the manufactured home is elevated one foot or more* b) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral	<i>Mandatory</i> (44 CFR 60.3(c)(6)(12)) <i>(* If this phrase is applied to all manufactured homes in the floodplain, then the remaining verbiage is not necessary to adopt.)</i> 16.18.050(B3)

movement.	
5.2-4 Recreational Vehicles Recreational vehicles placed on sites are required to either: 1) Be on the site for fewer than 180 days, 2) Be 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, and have no permanently attached additions; or 3) Meet the requirements of 5.2-3, above.	<i>Mandatory</i> (44 CFR 60.3(c)(14)) 16.18.050(B4)
5.2-5 Enclosed Area Below the Lowest Floor If buildings or manufactured homes 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.	<i>Mandatory</i> (44 CFR 60.3(c)(5)) 16.18.050(B6) must add
5.2-6 Small Accessory Structures (Detached Garages & Small Storage Structures) For A Zones (A, AE, A1-30, AH, AO): 1) Appurtenant structures used solely for parking of vehicles or limited storage may be constructed such that the floor is below the BFE, provided the structure is designed and constructed in accordance with the following requirements: a) Use of the appurtenant structure must be limited to parking of vehicles or limited storage; b) The portions of the appurtenant structure located below the BFE must be built using flood resistant materials; c) The appurtenant structure must be adequately anchored to prevent flotation, collapse, and lateral movement; d) Any machinery or equipment servicing the appurtenant structure must be elevated or flood proofed to or above the BFE; e) The appurtenant structure must comply with floodway encroachment provisions in Section 5.4-1; f) The appurtenant structure must be designed to allow for the automatic entry and exit of floodwaters in accordance with Section 5.2-1(5). g) The structure shall have low damage potential, and h) If the structure is converted to another use, it must be brought into full compliance with the standards governing such use. i) The structure shall not be used for human habitation. 2) Detached garages, storage structures, and other appurtenant structures not meeting the above	<i>Recommended</i> <i>Recommended per FEMA bulletin P-2140</i> 16.18.050(B5)

standards must be constructed in accordance with all applicable standards in Section 5.2-1. 3) Upon completion of the structure, certification that the requirement of this section have been satisfied shall be provided to the Floodplain Administrator for verification.	
5.3 AE and A1-30 Zones with Base Flood Elevations but No Floodways In areas with BFEs (when a regulatory floodway has not been designated), no new construction, substantial improvements, or other development (including fill) shall be permitted within zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.	<i>Mandatory</i> (44 CFR 60.3(c)(10)) • Missing recommended
5.4 Floodways Located within areas of special flood hazard established in Section 3.2 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, the following provisions apply:	(Note the more restrictive language for floodway development per RCW 86.16) Missing recommended
5.4-1 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.	(44 CFR 60.3(d)(3)) Mandatory Missing recommended
5.4-2 Residential Construction in Floodways Construction or reconstruction of residential structures is prohibited within designated floodways*, except for (i) repairs, reconstruction, or improvements to a structure which do not increase the ground floor area; and (ii) repairs, reconstruction or improvements to a structure, the cost of which does not exceed 50 percent of the market value of the structure either, (A) before the repair, or reconstruction is started, or (B) if the structure has been damaged, and is being restored, before the damage occurred. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to	<i>Mandatory</i> (RCW 86.16.041) <i>However, subsections 1 and 2 can be eliminated at local option.</i> Missing recommended

assure safe living conditions, or to structures identified as historic places, may be excluded in the 50 percent.

1) Replacement of Farmhouses in Floodway

Repairs, reconstruction, replacement, or improvements to existing farmhouse structures located in designated floodways and that are located on lands designated as agricultural lands of long-term commercial significance under RCW 36.70A.170 may be permitted subject to the following:

- a) The new farmhouse is a replacement for an existing farmhouse on the same farm site;
- b) There is no potential building site for a replacement farmhouse on the same farm outside the designated floodway;
- c) Repairs, reconstruction, or improvements to a farmhouse shall not increase the total square footage of encroachment of the existing farmhouse;
- d) A replacement farmhouse shall not exceed the total square footage of encroachment of the farmhouse it is replacing;
- e) A farmhouse being replaced shall be removed, in its entirety, including foundation, from the floodway within ninety days after occupancy of a new farmhouse;
- f) For substantial improvements and replacement farmhouses, the elevation of the lowest floor of the improvement and farmhouse respectively, including basement, is a minimum of one foot higher than the BFE;
- g) New and replacement water supply systems are designed to eliminate or minimize infiltration of floodwaters into the system;
- h) New and replacement sanitary sewerage systems are designed and located to eliminate or minimize infiltration of floodwater into the system and discharge from the system into the floodwaters; and
- i) All other utilities and connections to public utilities are designed, constructed, and located to eliminate or minimize flood damage.

2) Substantially Damaged Residences in Floodway

- a) For all substantially damaged residential structures, other than farmhouses, located in a designated floodway, the Floodplain Administrator may make a written request that the Department of Ecology assess the risk of harm to life and property posed by the specific conditions of the floodway. Based on analysis of depth, velocity, flood-related erosion, channel migration, debris load potential, and flood warning capability, the Department of Ecology may exercise best professional judgment in recommending to the local permitting authority repair, replacement, or relocation of a substantially

damaged structure consistent with WAC 173-158-076. The property owner shall be responsible for submitting to the local government and the Department of Ecology any information necessary to complete the assessment. Without a favorable recommendation from the department for the repair or replacement of a substantially damaged residential structure located in the regulatory floodway, no repair or replacement is allowed per WAC 173-158-070(1). b) Before the repair, replacement, or reconstruction is started, all requirements of the NFIP, the state requirements adopted pursuant to 86.16 RCW, and all applicable local regulations must be satisfied. In addition, the following conditions must be met: i) There is no potential safe building location for the replacement residential structure on the same property outside the regulatory floodway. ii) A replacement residential structure is a residential structure built as a substitute for a legally existing residential structure of equivalent use and size. iii) Repairs, reconstruction, or replacement of a residential structure shall not increase the total square footage of floodway encroachment. iv) The elevation of the lowest floor of the substantially damaged or replacement residential structure is a minimum of one foot higher than the BFE. v) New and replacement water supply systems are designed to eliminate or minimize infiltration of floodwater into the system. vi) New and replacement sanitary sewerage systems are designed and located to eliminate or minimize infiltration of floodwater into the system and discharge from the system into the floodwaters. vii) All other utilities and connections to public utilities are designed, constructed, and located to eliminate or minimize flood damage.	
5.4-3 All Other Building Standards Apply in the Floodway If Section 5.4-1 is satisfied or construction is allowed pursuant to Section 5.4-2, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Section 5.0, Provision For Flood Hazard Reduction.	<i>Mandatory (44 CFR 60.3(d)(1-4))</i> Missing recommended
5.5 General Requirements for Other Development	<i>(Optional Provision)</i> 16.18.050(C)

All development, including manmade changes to improved or unimproved real estate for which specific provisions are not specified in this ordinance or the state building codes with adopted amendments and any {community name} amendments, shall: 1) Be located and constructed to minimize flood damage; 2) Meet the encroachment limitations of this ordinance if located in a regulatory floodway; 3) Be anchored to prevent flotation, collapse, or lateral movement resulting from hydrostatic loads, including the effects of buoyancy, during conditions of the design flood; 4) Be constructed of flood damage-resistant materials; 5) Meet the flood opening requirements of Section 5.2-1(5), and 6) Have mechanical, plumbing, and electrical systems above the design flood elevation or meet the requirements of ASCE 24, except that minimum electric service required to address life safety and electric code requirements is permitted below the design flood elevation provided it conforms to the provisions of the electrical part of building code for wet locations.	
5.6 Critical Facility Construction of new critical facilities shall be, to the extent possible, located outside the limits of the SFHA (100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Flood proofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the BFE shall be provided to all critical facilities to the extent possible.	<i>(Optional Provision)</i> 16.18.050(D)
5.7 Livestock Sanctuary Areas Elevated areas for the for the purpose of creating a flood sanctuary for livestock are allowed on farm units where livestock is allowed. Livestock flood sanctuaries shall be sized appropriately for the expected number of livestock and be elevated sufficiently to protect livestock. Proposals for livestock flood sanctuaries shall meet all procedural and substantive requirements of this chapter.	Required by RCW 86.16.190. This section should be included by all counties. A city that does not allow livestock can forgo this section. While state law requires that local governments make provision for critter pads, it is extremely important to note that RCW 86.16.190 does not relax NFIP standards, including the no rise standard in floodways, in any way. Note: To be “elevated sufficiently to protect livestock” typically means to be elevated at least one foot above the BFE.

Section 6.0 - Variances	
The variance criteria set forth in this section of the ordinance are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. A variance may be granted for a parcel of property with physical characteristics so unusual that complying with the requirements of this ordinance would create an exceptional hardship to the applicant or the surrounding property owners. The characteristics must be unique to the property and not be shared by adjacent parcels. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants, or the property owners. It is the duty of the {governing body} to help protect its citizens from flooding. This need is so compelling and the implications of the cost of insuring a structure built below the Base Flood Elevation are so serious that variances from the flood elevation or from other requirements in the flood ordinance are quite rare. The long-term goal of preventing and reducing flood loss and damage can only be met if variances are strictly limited. Therefore, the variance guidelines provided in this ordinance are more detailed and contain multiple provisions that must be met before a variance can be properly granted. The criteria are designed to screen out those situations in which alternatives other than a variance are more appropriate.	<i>Recommended</i> 16.18.060(A) Recommended language
6.1 Requirements for Variances 1) Variances shall only be issued: - Upon a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances; - For the repair, rehabilitation, or restoration of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure; - Upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; - Upon a showing of good and sufficient cause; - Upon a determination that failure to grant the variance would result in exceptional hardship	<i>Recommended. However, any variance provisions need to meet the standards in 44 CFR 60.6</i> 16.18.060(A2) Points 2 and 3 not included, recommended

to the applicant; f) Upon a showing that the use cannot perform its intended purpose unless it is located or carried out in close proximity to water. This includes only facilities defined in Section 2.0 {or the numbering system used by the community} of this ordinance in the definition of "Functionally Dependent Use." 2) Variances shall not be issued within any floodway if any increase in flood levels during the base flood discharge would result. 3) Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the BFE, provided the procedures of Sections 4.0 and 5.0 {or the numbering system used by the community} of this ordinance have been fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the variance increases.	
6.2 Variance Criteria 1) In considering variance applications, the {Governing Body} shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and: a) The danger that materials may be swept onto other lands to the injury of others; b) The danger to life and property due to flooding or erosion damage; c) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner; d) The importance of the services provided by the proposed facility to the community; e) The necessity to the facility of a waterfront location, where applicable; f) The availability of alternative locations for the proposed use, which are not subject to flooding or erosion damage; g) The compatibility of the proposed use with existing and anticipated development; h) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area; i) The safety of access to the property in time of flood for ordinary and emergency vehicles; j) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters expected at the site; and, k) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities, such as sewer, gas, electrical, water system, and streets and bridges.	<i>Recommended. However, any variance provisions need to meet the standards in 44 CFR 60.6</i> 16.18.060(B)
6.3 Additional Requirements for the Issuance of a Variance	<i>Recommended. However, any variance provisions need to meet the standards in 44 CFR 60.6</i>

1) Any applicant to whom a variance is granted shall be given written notice over the signature of a community official that: a. The issuance of a variance to construct a structure below the BFE will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage, and b. Such construction below the BFE increases risks to life and property. 2) The Floodplain Administrator shall maintain a record of all variance actions, including justification for their issuance. 3) The Floodplain Administrator shall condition the variance as needed to ensure that the requirements and criteria of this chapter are met. Variances as interpreted in the NFIP are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from flood elevations should be quite rare.	Not included, recommended
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APPENDIX A - STANDARDS FOR SHALLOW FLOODING AREAS (AO ZONES)	(44 CFR 60.3(c)7, 8 and 11)
Shallow flooding areas appear on FIRMs as AO zones with depth designations. The base flood depths in these zones range from 1 to 3 feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. In addition to other provisions in this code, the following additional provisions also apply in AO zones: 1. New construction and substantial improvements of residential structures and manufactured homes within AO zones shall have the lowest floor (including basement and mechanical equipment) elevated above the highest adjacent grade to the structure, one foot or more above* the depth number specified in feet on the community's FIRM (at least two feet above the highest adjacent grade to the structure if no depth number is specified). 2. New construction and substantial improvements of nonresidential structures within AO zones shall either: a. Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, one foot or more above* the depth number specified on the FIRM (at least	(Mandatory if mapped AO Zones) 44 CFR 60.3(c)(7) 44 CFR 60.3(c)(8) 44 CFR 60.3(c)(8)(ii) 44 CFR 60.3(c)(11) Not included not applicable

two feet if no depth number is specified); or b. Together with attendant utility and sanitary facilities, be completely flood proofed to or above that level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. If this method is used, compliance shall be certified by a registered professional engineer, or architect as in section 5.2-2(2). 3. Require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures. 4. Recreational vehicles placed on sites within AO zones on the community's FIRM either: a. Be on the site for fewer than 180 consecutive days, or b. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or c. Meet the requirements of subsections (1) and (3) above and the anchoring requirements for manufactured homes (Section 5.2-3).	
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