MEDINA, WASHINGTON

PLANNING COMMISSION MEETING

Hybrid - Virtual/In-Person
Medina City Hall - Council Chambers
501 Evergreen Point Road, Medina, WA 98039
Tuesday, September 23, 2025 – 6:00 PM

AGENDA

COMMISSION CHAIR | Laura Bustamante
COMMISSION VICE-CHAIR | Shawn Schubring
COMMISSIONERS | Julie Barrett, Li-Tan Hsu, Evonne Lai, Mark Nelson, Brian Pao
STAFF LIAISON | Steven Wilcox, Development Services Director. swilcox@medina-wa.gov
CITY SUPPORT STAFF | Rebecca Bennett, Development Services Coordinator

Hybrid Meeting Participation

The Medina Planning Commission offers both in-person and online meeting participation. If you will be participating online and wish to speak to the Commission at the meeting, please register with Medina's Development Services Coordinator prior to 2:00pm on the day of the Planning Commission meeting at 425.233.6414, or email . You will be called by name or telephone number when it is your turn to speak. You will be allotted 3 minutes for your comments and will be asked to stop when the time limit is reached. The Commission will also accept your written comments. Written comments must be submitted by 2:00pm on the day of the Planning Commission meeting to the Development Services Coordinator.

Join Zoom Meeting

https://medina-wa.zoom.us/j/84358332762?pwd=imwMO05U5zrmxtAkM5GjTTzHbxCT8n.1

Meeting ID: 843 5833 2762

Passcode: 300638

One tap mobile

+12532050468,,84358332762#,,,,*300638# US

+12532158782,,84358332762#,,,,*300638# US (Tacoma)

1. CALL TO ORDER / ROLL CALL

Planning Commissioners Barrett, Bustamante, Hsu, Lai, Nelson, Pao, and Schubring

2. APPROVAL OF MEETING AGENDA

3. APPROVAL OF MINUTES

3.1 Planning Commission Meeting Minutes of July 22, 2025
Recommendation: Adopt Minutes.
Staff Contact: Rebecca Bennett, Development Services Coordinator

4. ANNOUNCEMENTS

4.1 Staff/Commissioners

5. PUBLIC COMMENT PERIOD

Please see "Online Meeting Participation" above.

6. DISCUSSION

6.1 Concerns of the Commission

6.2 Critical Areas Ordinance Update
Recommendation: Discussion only
Staff Contact: Steven Wilcox, Development Services Director with Staff from our consultant Dan Nickel, Kim Frappier, and Douglas

Time Estimate: 1 hour and 45 minutes

7. ADJOURNMENT

Next Planning Commission Meeting: October, 14th, 2025 at 6:00 PM.

ADDITIONAL INFORMATION

Planning Commission meetings are normally conducted on the 4th Tuesday of the month at 6:00pm, unless otherwise scheduled. Please see the City of Medina website Meetings | Medina Washington for a current meeting schedule.

In compliance with the Americans with Disabilities Act, if you need an accommodation, including auxiliary aids or services, please contact the City Clerk's Office at (425) 233-6410 at least 48 hours prior to the meeting.

UPCOMING MEETINGS

Tuesday September 23, 2025. Regular Meeting
Tuesday October 7, 2025. Critical Areas Ordinance Open House
Tuesday October 14, 2025. Special meeting
Tuesday October 28, 2025. Regular Meeting
Tuesday November 18, 2025 (3rd Tuesday). Special Meeting
Tuesday December 16, 2025 (3rd Tuesday). Special Meeting

MEDINA, WASHINGTON

PLANNING COMMISSION MEETING

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Medina City Hall - Council Chambers
501 Evergreen Point Road, Medina, WA 98039
Tuesday, July 22, 2025 – 6:00 PM

MINUTES

1. CALL TO ORDER / ROLL CALL

Planning Commission Chair Laura Bustamante called the Planning Commission meeting to order in the Medina Council Chambers at 6:01pm.

PRESENT
Commission Chair Laura Bustamante
Commission Vice-Chair Shawn Schubring
Commissioner Julie Barrett
Commissioner Li-Tan Hsu
Commissioner Evonne Lai (arrived 6:07pm)
Commissioner Mark Nelson
Commissioner Brian Pao

STAFF
Bennett, Swanson, Wilcox

2. APPROVAL OF MEETING AGENDA

ACTION: By consensus, the meeting agenda was approved as presented.

3. APPROVAL OF MINUTES

3.1 Planning Commission Meeting Minutes of June 24, 2025
Recommendation: Adopt Minutes.
Staff Contact: Rebecca Bennett, Development Services Coordinator

ACTION: Motion to approve the meeting minutes as amended. Motion passed 5-0.

Motion made by Commission Vice-Chair Schubring, Seconded by Commissioner Hsu.
Voting Yea: Commission Chair Bustamante, Commission Vice-Chair Schubring, Commissioner Barrett, Commissioner Hsu, Commissioner Nelson, Commissioner Pao
Absent: Commissioner Evonne Lai

4. ANNOUNCEMENTS

4.1 Staff/Commissioners

Wilcox announced that on Wednesday, July 30th, an Open House for the Introduction to the Critical Areas Ordinance will be held at City Hall and online. A second Open House will be held once the draft Ordinance is prepared.

Wilcox announced that there was a decision from the City's Hearing Examiner about the Overlake Golf and Country Club Non-Administrative Variance Application. The City's Hearing Examiner denied the application.

Wilcox announced that we have received inquiries about our Middle Housing Ordinance.

There will be a tree canopy study done this year. Facet will conduct the study and present their findings at the September 15th Council meeting.

5. PUBLIC COMMENT PERIOD

Planning Commission Chair Bustamante opened the public comment period. There were no speakers. Subsequently, public comments was closed.

6. DISCUSSION

6.1 2025 Periodic Critical Areas Ordinance Update
Recommendation: Presentation of Status with Discussion only; no action
Staff Contact: Steve Wilcox, Development Services Director

Wilcox gave overview of the status of the 2025 Periodic Critical Area Ordinance Update. Commissioners discussed and asked questions.

6.2 Outdoor Lighting Ordinance
Recommendation: Discussion item only; no action
Staff Contact: Steve Wilcox, Development Services Director

Wilcox gave overview of the Outdoor Lighting Ordinance. Commissioners discussed and asked questions.

6.3 Transportation System Plan
Recommendation: Presentation of Status with Discussion only; no action
Staff Contact: Jeff Swanson, City Manager

Swanson gave presentation about the Transportation System Plan. Commissioners discussed and asked questions.

7. ADJOURNMENT

Next Planning Commission Meeting: September 23, 2025 at 6:00 PM.

Meeting adjourned at 7:42p.m.

ACTION: Motion to adjourn. (Approved 7-0)

Motion made by Commissioner Hsu, Seconded by Commissioner Lai.
Voting Yea: Commission Chair Bustamante, Commission Vice-Chair Schubring,

Commissioner Barrett, Commissioner Hsu, Commissioner Lai, Commissioner Nelson, Commissioner Pao

MEDINA, WASHINGTON

AGENDA ITEM 6.2

Tuesday September 23, 2025

Subject: Critical Areas Ordinance Update

Planning Commission Action: Discussion Only

Staff Contacts: Steven Wilcox, Development Services Director with Staff from our consultant Dan Nickel, Kim Frappier, and Douglas

Introduction

At the September 23, 2025 Planning Commission meeting, staff and consultants from Facet will present the proposed draft Critical Areas Ordinance (CAO) code amendments with supporting materials used.

Purpose

As part of the 2025 Comprehensive Plan Periodic Update required under Washington State law, all counties and cities must conduct a periodic review and update of their critical area's regulations in accordance with RCW 36.70A.130. The City of Medina's Development Services Department is undertaking this review and updating the City's CAO to align with the 2024 Comprehensive Plan.

At this meeting, the Planning Commission will be presented with the final Gap Analysis, a detailed code audit evaluating the consistency of Medina's current CAO with the Growth Management Act (GMA) and Best Available Science (BAS) review.

Background

Medina's CAO establishes standards and regulations that govern development on sites containing environmentally sensitive areas and their associated buffers. These include wetlands, fish and wildlife habitat conservation areas (FWHCAs), frequently flooded areas (FFAs), geologically hazardous areas, and critical aquifer recharge areas (CARAs). The CAO is codified in Chapter 16.50 of the Medina Municipal Code (MMC) and was last comprehensively updated in 2015. Under state law, these regulations are required to be reviewed and updated at least every 10 years.

This periodic update includes a review of Best Available Science (BAS) and an analysis of the existing CAO to ensure any proposed amendments are scientifically grounded and compliant with Washington State law. The update has been informed by several key analyses, including a Gap Analysis. While the BAS review provides the most

current science for each critical area type, the Gap Analysis identifies areas of inconsistency between the existing CAO and the elements below.

- State law and administrative codes;
- Scientific literature and guidance;
- Recommendations from state agencies (e.g., Department of Ecology, Department of Fish and Wildlife, etc.,).

The attached Gap Analysis, prepared by Facet, is a code audit that identifies where the current CAO is inconsistent with either Best Available Science or the requirements of the GMA. In addition to science and policy gaps, the analysis also highlights opportunities to improve administrative efficiency and clarity within the code.

Based on this review, the following areas have been identified for potential amendment as part of this update:

- Definitions and technical terms – creating more clarity and alignment with state definitions
- Habitat Protections and Mapping
- Buffer Standards:
    - Wetlands: increased buffer – Ecology has provided three options for increased buffer widths (see gap analysis, appendix C).
    - Riparian Management Zones – looking at buffers of streams and wetlands as riparian management zones and considering riparian management
        - Site Potential Tree Height (SPTH) – new paradigm to be considered, which deviates from stream typing and creates stream buffer widths based on the average maximum heigh that the dominant tree is expected to reach, typically at a mature stage.
        - Streams: increased buffer for maintaining ecological function – minimum width is now 100-feet per Ecology guidance.

City staff have worked closely with Facet to develop the attached Proposed Draft Code Amendments, which include recommendations and options that will be discussed at this meeting. These proposed amendments are intended to guide the preparation of the Public Draft Code, which will be presented and published at the September 23rd Planning Commission meeting.

CAO Schedule

Given the complexity and adoption timing of the critical area regulations, an additional meeting has been scheduled in October to continue discussions on the CAO update.

The proposed timeline includes the following key dates:

- October 7, 2025 – Open House

- October 14, 2025 – Planning Commission Special Meeting (potential Public Hearing)
- October 28, 2025 – Planning Commission (potential Public Hearing)
- TBD – Development Services Committee
- TBD - November 2025 or December 2025 – City Council Hearing
- January 2026 – City Council Adoption

Attachments

- Best Available Science Report (Facet July 2025)
- Gap Analysis (Facet July 2025)
- Proposed Draft Critical Area Ordinance

Proposed Planning Commission Motion:

None.

FACET

Critical Areas Ordinance Update

Best Available Science Review

MEDINA

JULY 25, 2025

Prepared for:

City of Medina
Development Services Department
501 Evergreen Point Rd
Medina, WA 98039

Facet Number: 2406.0332

Prepared by:

Dan Nickel – Principal of Planning
B.S. in Biology at Pacific Lutheran University
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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
CMZ	Channel Migration Zone
DNR	Washington State Department of Natural Resources
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
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
USACE	U.S. Army Corps of Engineers
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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1. INTRODUCTION

1.1 Purpose

This best available science (BAS) review was prepared to support the City of Medina's update to its Critical Areas Ordinance (CAO). As required under the Washington State Growth Management Act (GMA), cities and counties must periodically update their comprehensive plans and development regulations. Medina's comprehensive plan recently underwent an update in 2024 which sets the framework for planned CAO updates in Medina. This BAS establishes the scientific foundation for the CAO update and the forthcoming gap analysis, serving as a resource to identify where revisions are needed to be consistent with the scientific literature.

The term "best available science" refers to the current and best available information that follows a valid scientific process as specified in WAC 365-195-900 through WAC 365-195-925. A valid scientific process is characterized by peer review, standardized methods, logical conclusions and reasonable inferences, quantitative analysis, proper context, and references. Accepted sources of scientific information include research, monitoring, inventory, modeling, assessment, and synthesis (WAC 365-195-905). Only resources that meet these requirements are included as reference in this review.

Under the GMA, Medina is required to include the best available science and give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries when developing policies and development regulations to protect the functions and values of critical areas (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 this BAS review is a resource for critical area management, it is not intended to provide definitive answers for all policy and regulatory decisions. Effective policy making should integrate BAS with societal values, planning objectives, and other considerations. Additionally, ecological systems are complex and the scientific body of knowledge is constantly evolving. Where scientific uncertainty exists, this review presents a range of potential ideas, findings, and interpretations. In accordance with WAC 365-195-920, decision-makers may opt for a precautionary, or no-risk approach, when scientific information is incomplete or inconclusive.

1.2 Previous BAS Reviews in Medina

Medina's last comprehensive update to its CAO occurred in 2015. In 2014, The Watershed Company[1] prepared the *Best Available Science & Critical Areas Ordinance Review – City of Medina CAO Update* (hereafter referred to as the "2014 BAS Review"). Prior to that, The Watershed Company completed a separate BAS review in 2005 to support the City's critical area regulations at that time. Much of the foundational science underlying critical area regulations has remained consistent over this period and continues to be relevant. This BAS review does not duplicate information that has been comprehensively addressed in earlier reports. Instead, it presents information from new BAS resources and selectively references earlier findings that are applicable to current regulatory considerations.

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. By addressing these anticipated impacts on critical areas, decision-makers can integrate climate resilience into policies and regulations. This section provides a high-level overview of predicted climate change effects in the Puget Sound region of Washington State that have the potential to influence the functions of critical areas. Further details on climate change impacts are discussed within each subsection as they pertain to specific critical area types.

Air Temperature

- Long-term atmospheric warming, along with lengthening of the frost-free season, and increased frequency of nighttime heat waves have been observed (Mauger et al. 2015).
- An increase in the frequency of extreme heat events, with the number of "hot days" each year from only 1 to 11-127 by 2100 (Ecology 2024). A hot day is defined as a day with a daily high temperature in the top 1% of past high temperatures for June through August.
- Global atmospheric temperature has currently risen by of about 1°C. Temperature increases may exceed 1.5°C (2.7°F) by 2030 (Snover 2019).

Precipitation Patterns

- Increases in both the frequency and intensity of heavy rainfall events have been documented in western Washington (Mauger et al. 2015)

[1] In 2023, The Watershed Company merged with Davido Consulting Group to form Facet. All intellectual property and trademark rights formerly held by The Watershed Company remain the sole property of Facet as its successor in interest.

- Alterations of summer precipitation frequency, intensity, and duration, along with lower snowpack levels are expected to make droughts more common (Ecology 2024; Mauger et al. 2015).
- Snowpack decline is anticipated to result in reduced stream flows (Ecology 2024).
- An increase in the frequency and intensity of floods (Ecology 2024).
- 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).

Wildfire and Smoke

- Projected hotter, drier summers and declining snowpack are expected to create conditions that increase the likelihood of wildfires west of the Cascades (Mauger et al. 2015).
- Although the overall risk of wildfires in Medina is lower compared to other regions of Washington, smoke from wildfires occurring elsewhere frequently migrates into the Puget Sound basin. Projections for future changes in frequency or intensity of wildfire smoke are not available and the impact of wildfire smoke on natural systems is not fully understood (Ecology 2024; Voisin et al. 2023).

Flora, Fauna, and Pathogens

- Climate change is anticipated to alter phenological patterns, geographic species and habitat distribution, demography, and ecosystem composition and resilience (Mauger et al. 2015).
- Significant changes in prevalence and distribution of pests and pathogens is predicted, with species- and host-specific responses (Mauger et al. 2015).
- Range expansion is anticipated for adaptable invasive species that can exploit shifting habitats and climate-related ecological disturbances, effectuating further ecological impacts (Poland 2021; Shirk et al. 2021).

3. WETLANDS

3.1 Definitions

Wetland definitions adopted by local jurisdictions, as well as state and federal agencies, determine which wetlands are subject to regulation. The definitions used by Washington State and the City of Medina are provided below to highlight key similarities and differences in regulatory approaches. Washington State defines wetlands in WAC 365-190-030(24) as:

> *"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.

Medina's definition, located in the Medina Municipal Code (MMC) Chapter 16.12, is comparable to the Washington State definition except that it expands on the list of exclusions to irrigation and drainage ditches, and contains minor differences in terminology and punctuation.

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

The definitions are largely similar, with minor wording differences and a few distinctions. The City of Medina's definition explicitly requires the use of the approved federal wetland delineation manual and applicable regional supplements when identifying regulated wetlands. Additionally, Medina's version includes broader exclusionary language, such as "including, but not limited to, "when identifying features that are not considered wetlands.

3.2 Wetlands in Medina

Medina is situated within a Lake Washington frontage subbasin that is hydrologically isolated from larger surrounding watersheds by Clyde Hill to the east. A small ridge along the city's western edge further defines the topography, creating a lowland trough between the two hills. Nearly all of Medina's inventoried terrestrial wetlands are located on two properties within this low-lying area: Overlake Golf and Country Club and Medina Park. Lacustrine wetlands are also abundant along Lake Washington shorelines, however, these have been substantially reduced and degraded due to residential development activities, including bulkhead installation, grading, and vegetation modification.

Figure 1. Critical Areas Map reproduced from LDC (2024).

3.3 Functions and Values

Wetlands are highly productive ecosystems that perform essential physical, chemical, and biological functions and processes. Extensive research has documented the wide range of ecological services they provide, along with their associated cultural, social, and economic benefits. The quality of these functions varies depending on many factors such as hydrogeomorphology, 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 and underlaying processes (Sheldon et al. 2005):

Improving water quality

- Retention and detention of surface water runoff
- Sediment removal
- Filtering, removal, and transformation of pollutants and pathogens
- Uptake of nutrients including phosphorous and nitrogen

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

- Peak flow and 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

- Wetlands provide general and specialized habitat for a wide range of species include water-dependent and water associated organisms. Although habitat quality is species and context specific, the following processes and characteristics that are associated with well-functioning habitat:
    - Structural complexity
    - Heterogeneity at multiple spatial scales
    - Floristic diversity and composition
    - Presence of unique micro habitats
    - Presence of species-specific niche habitat requirements
    - Food availability
    - Adequate refuge
    - Surface water source
    - Diversity of hydrologic regimes
    - Connectivity to other ecosystems
    - Patch size
    - Climate and weather
    - Topography and geology
    - Nutrient availability

- Biological productivity and supporting of food webs

3.4 Key Protection Strategies

3.4.1 Wetland Identification and Classification

Online resources such as the King County iMap and the National Wetland Inventory provide modeled estimates of wetland locations. These have been incorporated into Medina's Critical Areas Map (Figure 1). 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 Medina, 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 and periodically updated a statewide wetland rating system, with separate versions for eastern and western Washington. The most recent version is the Washington State Wetland Rating System for Western Washington, Version 2 (Hruby and Yahnke 2023). Version 2 is generally consistent with the prior iteration, except for certain clarifications and annotations.

Ecology's wetland rating system is a rapid assessment tool used to evaluate wetland functions related to water quality, hydrology, and habitat, considering site potential, landscape context, and societal value (Hruby and Yahnke 2023). Based on this system wetlands are classified into one of four categories. The classification helps guide regulatory and land-use decisions, supporting the protection and management of wetlands. It also informs appropriate buffer distances, ensuring the preservation of key ecological functions and values

3.4.2 Management Resources and Standards

3.4.2.1 Wetland Buffers

The preservation of wetlands and wetland buffers are a primary mechanism for protecting wetlands in Washington. Buffers protect wetlands by minimizing the impacts of nearby human activities and also offer their own ecological benefits, especially by enhancing water quality and supporting wildlife habitat (Sheldon et al. 2005). Buffers are effective at reducing the impacts of adjacent land uses on wetlands, though their effectiveness can vary depending on physical characteristics such as slope, soil type, vegetation, and width (Hruby 2013; Sheldon et al. 2005). The following summarizes the key conclusions from Hruby's 2013 report, *Update on Wetland Buffers: The State of the Science*:

- 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 functioning higher 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 has published *Wetland Guidance for CAO Updates,* which provides a guide and framework for local jurisdictions to update the CAOs and wetland regulations (Ecology 2022). Three wetland buffer options are presented that jurisdictions can consider, all based on a moderate-risk approach to protecting wetland functions (Ecology 2022). The following summary of these buffer options assumes that wetland buffers are well-vegetated with native species.

- **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).

3.4.2.2 Wetland Mitigation

Mitigation Sequencing

Mitigation sequencing is the structured process of avoiding, minimizing, and mitigating all impacts to a particular resource. Medina has incorporated mitigation sequencing into existing critical areas regulations in MMC 16.50.060.C. 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 enacted through a programmatic approach or a 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. Mitigation banks are certified by the state to ensure that lost ecological functions are adequately replaced. ILF programs collect fees and allocate those funds to restoration projects within a designated service area. Both the U.S. Army Corps of Engineers (USACE) and the Washington State Department of Ecology review and approve ILF programs.

Alternatively, PRM is a mitigation project directly managed by the applicant. These projects are typically developed and implemented concurrently with wetland impacts, though they may also be completed in advance. PRM applicants are responsible for carrying out project installation, site maintenance, monitoring, and any necessary adaptive management to meet the goals and performance standards of the approved mitigation plan

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 recommended mitigation ratios for projects in Western Washington vary based on the wetland category and the type of mitigation action proposed (Granger et al. 2005). For direct impacts to wetlands, these ratios are increased to compensate for temporal loss of function and probability of failure (Ecology 2022). When applying advanced mitigation, the Ecology-recommended ratios account for the wetland category and proposed mitigation actions (Ecology, USACE, and EPA 2021).

To support ecological priorities within Washington State's watersheds, Ecology has developed additional guidance and tools for applicants. These include recommendations for applying a watershed-based approach to mitigation site selection and the use of the credit-debit method (Hruby 2012; Hruby, Harper, and Stanley 2009). The credit-debit method provides a standardized system for quantifying the number of mitigation credits required for a given project. This method can be applied to various forms of compensatory mitigation, including on-site (in-situ) mitigation, mitigation banking, and in-lieu fee programs. Unlike fixed mitigation ratios, the credit-debit method accounts for site-specific ecological conditions, which may result in a requirement for more or fewer credits than traditional ratio-based approaches (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

Mitigation actions that rely solely on preservation or enhancement are the least preferred because they result in a net loss of wetland area. Ecology and federal agencies recommend that preservation or enhancement be used in combination with other forms of mitigation that achieve no net loss of wetland area and function, such as wetland creation (Ecology, USACE, and EPA 2021).

Ecology recommends applying at least a 1:1 ratio for impacts to wetland buffers (Ecology, USACE, and EPA 2021). However, higher ratios may be needed to replace all lost critical area functions. In addition, Ecology recommends evaluating indirect wetland impacts to determine the need and extent of compensatory mitigation requirements (Ecology, USACE, and EPA 2021).

Monitoring

Evaluations of wetland mitigation outcomes found that most wetland mitigation efforts do not fully replace impacted functions and often fall short of the no net loss goal (Ecology 2008; Johnson et al. 2002). Once a mitigation site is established, monitoring, ongoing maintenance, and clearly defined performance standards are essential to ensure regulatory compliance and the long-term success of restored wetland functions. Compensatory mitigation sites typically require performance standard monitoring for a period of 5-10 years to ensure that the planned functions are realized. However, few

studies have examined long-term compliance, and one assessment reported a decline in site compliance between 8 and 20 years after installation (Van den Bosch and Matthews 2017). The National Research Council (2001) has identified factors that improve the likelihood of successful mitigation, including comprehensive functional assessments, adequate performance standards, detailed mitigation plans, larger financial assurances reflecting current market values, high replacement ratios, and appropriate technical expertise.

3.5 Climate Change Impacts and Mitigation

Climate change is predicted to significantly affect wetland ecosystems by altering hydrologic regimes, reducing biodiversity, disrupting carbon storage processes, modifying plant and animal community composition, and increasing disease prevalence (Aukema et al. 2017; Burkett and Kusler 2000). Anticipated hydrologic impacts include sea level rise and associated salinity shifts in coastal ecosystems (Burkett and Kusler 2000), increased surface ponding during wet seasons, and reduced water availability during dry periods (Halabisky 2017; Mauger, Casola, Morgan, Strauch, Jones, Curry, Busch Isaksen, et al. 2015). These changes can lead to the loss of wetland area and shifts in vegetation communities. Altered seasonal hydrologic cycles may also impair the ability of wetland soil bacteria and plants to retain, process, and sequester pollutants (EPA 2015). While wetlands are inherently dynamic systems, their capacity to adapt to rapid environmental change is limited. Wetlands particularly vulnerable to the effects of climate change are those in coastal areas and those sustained by surface water and stormwater inputs.

Wetlands also provide functions that help mitigate climate change impacts. As significant carbon sinks, wetlands contribute to climate regulation by storing organic carbon, reducing decomposition rates, and sequestering greenhouse gas emissions (Gallagher et al. 2022). In addition, wetlands and wetland buffers help maintain shaded and cool microclimates that provides thermal refuge for wildlife and serve as movement corridors at both local and landscape scales (Association of State Wetland Managers 2015). Wetlands also play a role in attenuating flood waters, a function that is expected to become increasingly important as the frequency and intensity of flood events rise due to climate change.

Although wetlands are expected to be significantly affected by climate change, they also play a crucial role in mitigating its extent and impacts. The interaction between wetlands and climate change presents a two-fold risk: the loss of wetland area may lead to the release of stored carbon, while degradation of wetland conditions may impair key ecological functions. These outcomes represent positive feedback mechanisms, whereby climate-driven wetland loss contributes to increased greenhouse gas emissions and diminished ecosystem services. As a result, the functional value of wetlands becomes especially critical when viewed through the lens of climate resilience and climate change mitigation.

3.5.1 Strategies to Manage Climate Change Impacts on Wetlands

Washington State's current wetland protection standards follow a moderate-risk approach, is a moderate likelihood that wetland functions may be impacted even when standard protections are applied (Ecology 2022). The additional strategies listed below may be considered by the City for managing their wetland resources:

- Create and maintain a wetland database.
- Identify wetlands which 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.

4. CRITICAL AQUIFER RECHARGE AREAS

Critical Aquifer Recharge Areas (CARAs) are a type of critical area designated to protect sources of potable water by maintaining the quality and quantity of groundwater recharge. These areas are especially important where aquifers serve as primary sources of drinking water and are susceptible to contamination or reduced recharge due to land use activities. According to WAC 365-190-030(3), CARAs are defined as:

> *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.*

While many jurisdictions adopt local definitions and regulatory frameworks for CARAs to align with state guidance, the City of Medina does not currently regulate CARAs, nor does it provide a specific definition in the Medina Municipal Code (MMC).

An inventory of CARAs has been conducted by King County in 2003 which determined Medina does not contain any areas of high susceptibility to groundwater contamination, nor does it contain any designated sole source aquifers or well head protection areas (Figure 2). According to King County's groundwater source database, Medina currently has only one identified Group D well, classified as a

domestic water source; however, this well is not located within a designated CARA. Based on the absence of mapped CARAs and associated groundwater vulnerabilities, this report does not provide further evaluation or regulatory recommendations for this critical area type, as it is not currently applicable within Medina's jurisdiction.

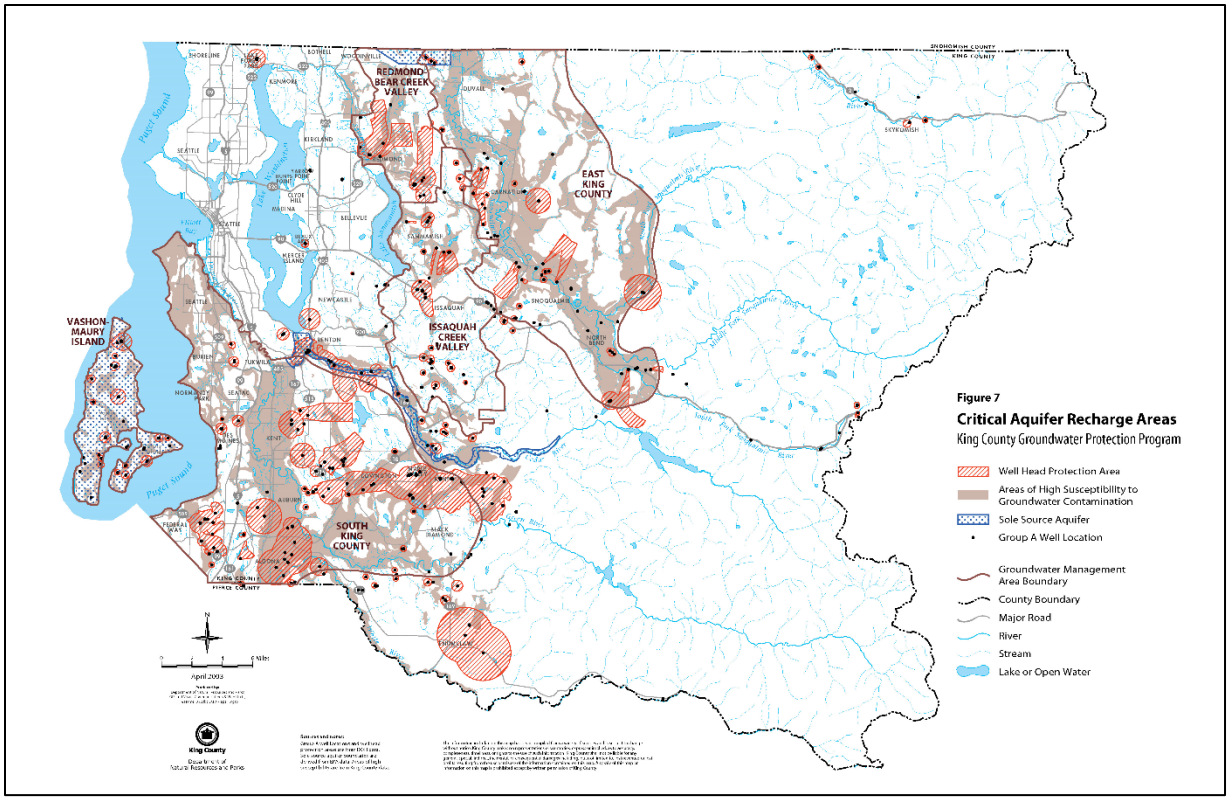

Figure 2. Map of CARAs in King County, reproduced from King County (2003).

5. FREQUENTLY FLOODED AREAS

Frequently Flooded Areas (FFAs) are lands with a high risk of periodic inundation, such as those within the 100-year floodplain which pose a hazard to public safety, property, and environmental resources. According to WAC 365-190-030(8), FFAs are defined as:

> *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.*

Flood hazard mapping and analyses conducted by the Federal Emergency Management Agency (FEMA) have determined that no 100-year floodplain hazard areas are present within Medina.

Additionally, Medina is not known to experience flooding related to high groundwater, coastal surge, or localized ponding that would warrant classification as FFAs under state definitions.

Since no mapped FFAs or associated flood risks have been identified in Medina, this report does not include further evaluation or management recommendations for this critical area type. Should future floodplain mapping or climate change projections identify new risks, the City may need to re-evaluate the applicability of FFA-related development standards.

6. GEOLOGICALLY HAZARDOUS AREAS

6.1 Definitions

Geologically hazardous areas are a category of critical areas designated to protect people, property, and the environment from risks associated with unstable soils and geologic activity. These areas are typically identified through geotechnical analysis and are subject to specific development regulations to reduce hazards. Washington State defines geologically hazardous areas as (WAC 365-190-030):

> *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"*

According to WAC 365-190-120, the four primary types of geologically hazardous areas include erosion hazard areas, landslide hazard areas, seismic hazard areas, and areas subject to other geological events, such as coal mine hazards and volcanic hazards.

The City of Medina has adopted a similar definition and aligned its regulations with state guidance. Medina defines geologically hazardous areas as (MMC 16.12):

> *Geologically hazardous areas means areas that may not be suited to development consistent with public health, safety or environmental standards, because of their susceptibility to erosion, sliding, earthquake, or other geologic events as designated by WAC 365-190-120. In the City of Medina, types of geologically hazardous areas include erosion, landslide, and seismic hazards.*

Within Medina's jurisdiction, the types of geologically hazardous areas currently recognized include erosion, landslide, and seismic hazard areas. These areas are evaluated during planning and development review processes to minimize risks to public safety and infrastructure.

6.1.1 Erosion Hazard Areas

Erosion hazard areas are lands where soil erosion is likely to occur due to the presence of steep slopes, unconsolidated soils, or highly erodible soil types, posing a risk to slope stability, water quality, and infrastructure. 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.

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

Medina adopts an approach which further classifies erosion hazard areas as a regulatory framework. According to Medina Municipal Code (MMC) 16.12.060, the city defines erosion hazard areas as:

Erosion hazard areas means at least those areas identified by the U.S. Department of Agriculture's Natural Resources Conservation Service as having a "moderate to severe," "severe," or "very severe" rill and inter-rill erosion hazard.

6.1.2 Landslide Hazard Areas

Landslide hazard areas are a type of geologically hazardous area characterized by an increased risk of mass movement. These areas can pose significant risks to public safety and infrastructure, particularly in steep slopes, unstable soils, or lands influenced by high levels of surface or ground water. Washington State defines landslide hazard areas under WAC 365-190-030(10) as: "areas at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors."

Further criteria for identifying landslide hazard areas are detailed in WAC 365-190-120(6), which states:

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.

The City of Medina has adopted a local definition consistent with the state guidance, adapted to a local regulatory framework and site-specific characteristics. According to the Medina Municipal Code (MMC 16.12), landslide hazard areas are defined as:

> *Landslide hazard areas means areas that are potentially subject to risk of mass movement due to a combination of geologic, topographic, and hydrologic factors. These areas are typically susceptible to landslides because of a combination of factors including bedrock, soil, slope (gradient), slope aspect, geologic structure, ground water, hydrology, or other factors.*

Medina further specifies landslide hazard areas through the following criteria outlined in MMC 16.50.90.B.2:

a. Areas of historic failures, such as:
  i. Those areas delineated by the U.S. Department of Agriculture's Natural Resources Conservation Service as having a "severe" limitation for building site development;
  ii. Areas designated as quaternary slumps, earth-flows, mudflows, lahars, or landslides on maps published by the U.S. Geological Survey or Department of Natural Resources;
b. Areas with all three of the following characteristics:
  i. Slopes steeper than 15 percent; and
  ii. Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and
  iii. Springs or ground water seepage;
c. Slopes that are parallel or sub-parallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;
d. Areas potentially unstable because of rapid stream incision, stream bank erosion, and undercutting by wave action;
e. Areas located in a canyon or on an active alluvial fan, presently or potentially subject to inundation by debris flows or catastrophic flooding; and
f. Steep slopes, which are any area with a slope of 40 percent or steeper and with a vertical relief of ten or more feet except areas composed of consolidated rock. A slope is delineated by

establishing its toe and top and measured by averaging the inclination over at least ten feet of vertical relief.

While both the state and local consider similar risk factors, Medina's code clarifies regulatory thresholds for development suitability and adopts classification methods. These provisions improve appropriate siting and mitigation for development in areas that have elevated risk levels.

6.1.3 Seismic Hazard Areas

Seismic hazard areas are a geologically hazardous area with a high risk for potential for earthquake-related damage due to local geologic and soil conditions. These areas require evaluation in land use planning and development to mitigate risks to life, property, and infrastructure. Washington State defines seismic hazard areas under WAC 365-190-030(18) 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." Additional detail is provided in WAC 365-190-120, which expands the definition to include areas subject to severe risk of damage as a result of subsidence and surface faulting.

The City of Medina adopts a similar definition in MMC 16.12, which states: "*Seismic hazard areas means areas that are subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement, soil liquefaction, lateral spreading, or surface faulting.*"

6.2 Hazard Characterization

6.2.1 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 et al. 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.

As shown in Figure 1, there are erosion hazard areas along the Medina's western and southeastern shorelines. These areas are defined by relatively steep hillsides that descend toward the shoreline, increasing their susceptibility to erosion.

6.2.2 Landslide Hazard Areas

Landslides are inherently difficult to predict, as their occurrence is influenced by a combination of bluff geology, sediment composition, topography, and hydrology. Steeper slopes are generally more susceptible to failure due to increased gravitational stress (Shipman 2004). Certain land use activities such as vegetation removal and the introduction of impervious surfaces can elevate landslide risk by altering natural slope stability. Vegetation plays a critical role in slope stabilization through root systems that anchor soil and evapotranspiration, which reduces groundwater levels and intercepts rainfall before it infiltrates (Schmidt et al. 2001; Watson and Burnett 2017). These hydrologic and mechanical functions of vegetation help mitigate the likelihood of shallow, rapid landslides (Schmidt et al. 2001).

As shown in Figure 3, there are no areas within Medina currently designated as landslide hazard areas by King County or the Washington Department of Natural Resources. However, landslides can still occur outside formally mapped critical areas. Notably, the Washington Geologic Information Portal identifies several landslides in Medina that date back to the Pleistocene Epoch, indicating a geologic history of slope movement in the area.

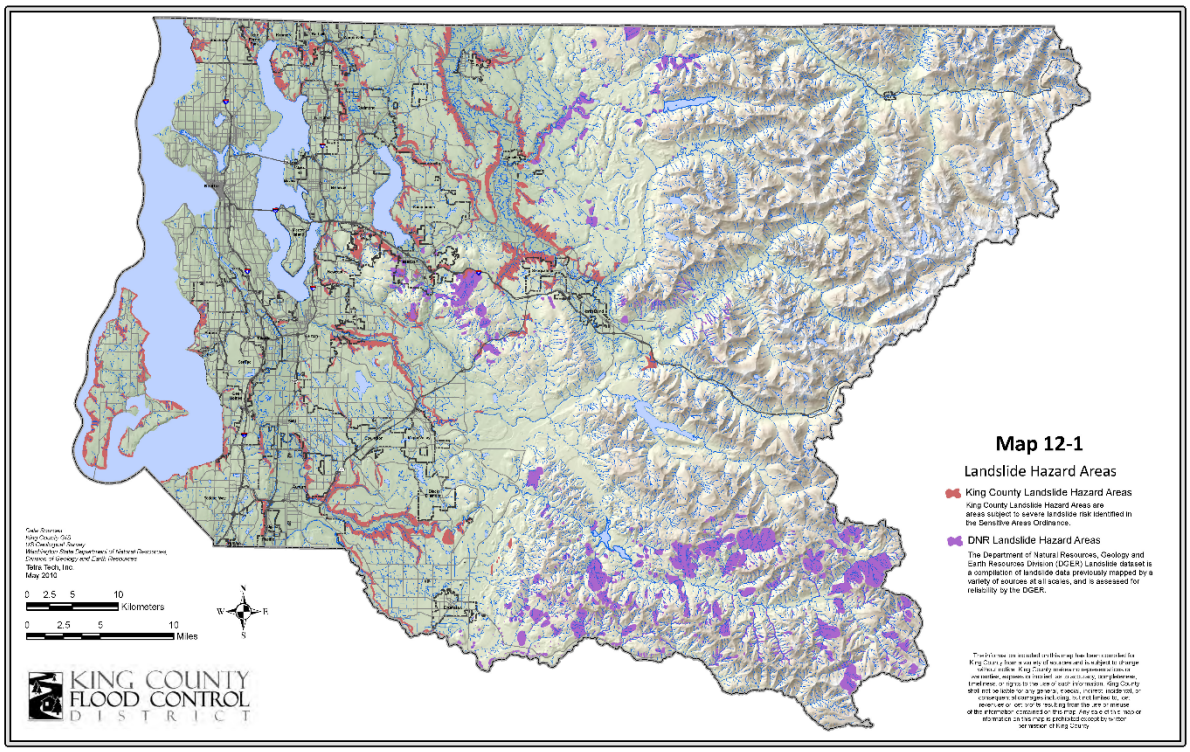

Figure 3. King County landslide hazard areas, reproduced from King County Flood Control District (2010a).

6.2.3 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. Medina 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 can include soil liquefaction, rockfall, landslides, dam and levee failure, and tsunamis or seiches. Figure 4 illustrates modeled liquefaction hazard areas within King County, while Figure 5 displays soil site classes based on the National Earthquake Hazards Reduction Program (NEHRP), which influence ground shaking intensity. Although Medina does not currently contain any formally designated seismic hazard critical areas, nearly all of King County, including Medina, faces some degree of seismic risk. According to the Washington Department of Natural Resources Geologic Information Portal, projected shaking intensities from the Cascadia Subduction Zone, Seattle Fault, and Tacoma Fault seismic scenarios could reach levels classified as 'very high' or 'severe.'

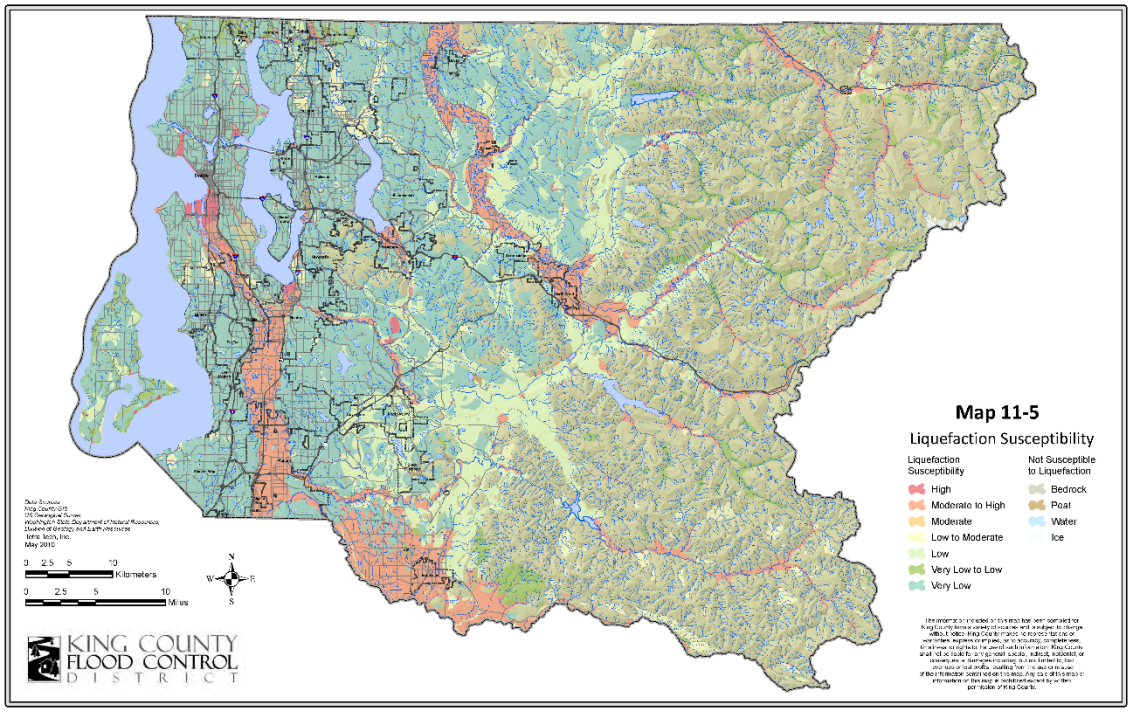

Figure 4. King County NEHRP soil site class, reproduced from King County Flood Control District (2010b).

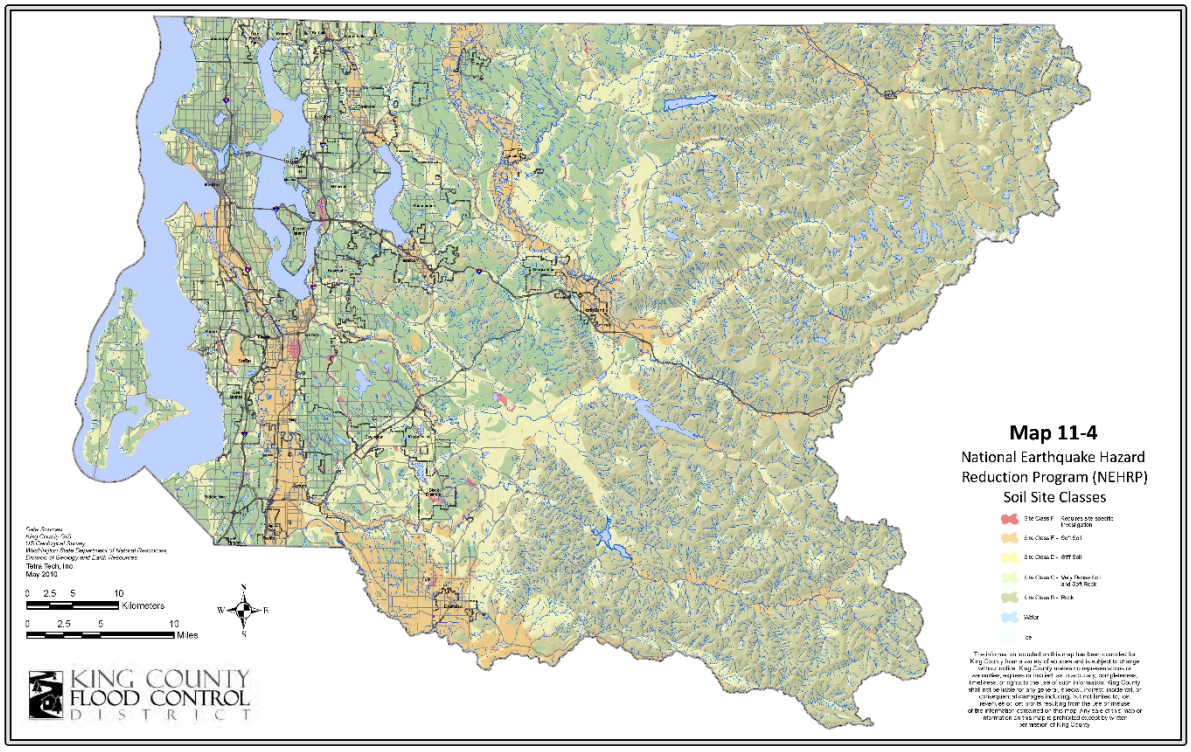

Figure 5. King County NEHRP soil site class, reproduced from King County Flood Control District (2010c).

6.3 Key Protection Strategies

Regulating activities in geologically hazardous areas serves to protect public safety and reduces the risk of property damage, injury, or loss of life. The type of land use and development in these areas influences the level of risk and may, in some cases, increase the likelihood or severity of geologic events in these areas. Since a single event can affect properties well beyond its point of origin, there is public interest in managing these hazards. Identifying the location of geologically hazardous areas is essential to ensure that development is planned and managed with appropriate safeguards for stability and safety.

6.3.1 Management Resources and Standards

The primary goal of protection measures for geologic hazards is to protect people and property. Risk management begins during the planning and development stages, where potential impacts can be reduced by limiting occupancy and restricting development within geologically hazardous areas. Additional risk reduction can also be managed by requiring engineered solutions that enhance structural resilience. To inform risk management decisions, classification systems are used to assess site-specific geologic risks and guide the development of appropriate restrictions and design requirements.

One common risk management approach is the establishment of buffers around geologic hazard areas to prevent encroachment and limit development within high-risk areas. In erosion and landslide hazard areas, specific design and construction standards are necessary to maintain slope stability and ensure that new development is resilient to potential hazards. Any proposed development in the geologic hazard area or its associated 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 a frequency appropriate to site conditions and project scope.

While the preferred approach is to avoid disturbance within geologic hazard areas, WAC 365-190-080(4) recognizes that "some geological hazards can be mitigated by engineering, design, or modified construction or mining practices so that risks to health and safety are acceptable."

Following the 2014 Oso landslide, the SR-530 Landslide Commission identified additional strategies for improving protection from geologic hazards. Key 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 mapping and risk assessment, the Commission emphasized collaboration among agencies and landowners, risk prioritization, and the use of LiDAR and GIS tools.

The Commission also recommended updates to critical area regulations to improve the identification and manage development in geologic hazard areas. Specifically, they advise cities and counties adopt identifying 'critical area buffer widths based on site specific geotechnical studies' as a development regulation (SR530 Landslide Commission 2014).

Seismic hazards can be managed by applying earthquake-resistant building standards to high-risk areas. The Washington State Building Code (WAC 51-50) incorporates provisions from the 2018 International Existing Building Code along with state-specific amendments, including several related to seismic safety standards.

6.4 Climate Change Effects

Geologically hazardous areas, particularly erosion hazard areas and landslide hazard areas, are expected to be increasingly affected by climate change. Climate change models predict warmer, drier summers, and increased precipitation in other seasons while resulting in a similar annual total but with more seasonal variability (Dalton et al. 2013). Extreme precipitation events are also expected to become more frequent and intense (Mauger, Morgan, and Won 2021). Heavy and prolonged rainfall are known to contribute to landslides, making these events more likely as climate patterns shift and extreme weather becomes more common (Chleborad 2006; DNR 2020). Climate change is also expected to increase the frequency and severity of wildfires, which further increase the risk of erosion and landslides (Mauger et al. 2015).

Changing climate is also anticipated to affect vegetative community composition through changes in plant hardiness zones and species ranges; this may increase mortality of native plants that become outside their climatic tolerance (Lenoir and Svenning 2015). These disruptions may be compounded by the spread of invasive species, which can displace native species, modify species assemblages, and alter root system structures. 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. For example, Himalayan blackberry is a widespread invasive plant with a shallow root system and can lead to excess soil erosion by preventing the establishment of deeper-rooted native counterparts (Gaire et al. 2015). Moreover, higher plant diversity typically improves soil stability by combining multiple forms of root architecture, a benefit that is diminished when invasive plant species are introduced to ecosystems (Ghestem et al. 2014).

To address these challenges, the City should consider the following climate-adaptive strategies for managing geologically hazardous areas:

- 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 Medina is included in statewide collaborative efforts to manage geologic hazard areas.
- Manage vegetation for climate resilience and slope stability.

7. FISH AND WILDLIFE HABITAT CONSERVATION AREAS

7.1 Definition

Fish and Wildlife Habitat Conservation Areas (FWHCAs) are a category of critical area designated to protect habitats for the long-term viability of native fish and wildlife populations. According to WAC 365-190-030(6), FWHCAs are defined as:

(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.

WAC 365-190-130 further outlines the specific types of areas that must be considered for classification and designation as FWHCAs:

(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.

Medina incorporates the state's general framework but applies its own criteria and definitions in MMC 16.12.070 and MMC 16.50.100, as follows:

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. In the City of Medina, fish and wildlife habitat conservation areas include:

1. *Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association.*
    a. *Federally designated endangered and threatened species are those fish and wildlife species identified by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service that are in danger of extinction or are threatened to become endangered. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service should be consulted as necessary for current listing status.*
    b. *State designated endangered, threatened, and sensitive species are those fish and wildlife species native to the State of Washington, identified by the State Department of Fish and Wildlife, that are in danger of extinction, threatened to become endangered, vulnerable, or declining and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats. State designated endangered, threatened, and sensitive species are periodically recorded in WAC 232-12-014 (state endangered species), and WAC 232-12-011 (state threatened and sensitive species). The State Department of Fish and Wildlife maintains the most current listing and should be consulted as necessary for current listing status.*
2. *State priority habitats and species. Priority habitats and species are considered to be priorities for conservation and management. Priority species require protective measures for their perpetuation due to their population status; sensitivity to habitat alteration; and/or recreational, commercial, or tribal importance. Priority habitats are those habitat types or elements with unique or significant value to a diverse assemblage of species. A priority habitat may consist of a unique vegetation type or dominant plant species, a described successional stage, or a specific structural element. Priority habitats and species are identified by the State Department of Fish and Wildlife.*
3. *Habitats and species of local importance. Habitats and species of local importance are those identified by the city as approved by the Medina city council, including those that possess unusual or unique habitat warranting protection.*
4. *Naturally occurring ponds under 20 acres. Naturally occurring ponds are those ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat, including*

those artificial ponds intentionally created from dry areas in order to mitigate impacts to ponds. Naturally occurring ponds do not include ponds deliberately designed and created from dry sites, such as canals, detention facilities, wastewater treatment facilities, farm ponds, temporary construction ponds, and landscape amenities, unless such artificial ponds were intentionally created for mitigation.

5. *Waters of the state. In the city, waters of the state include lakes, ponds, streams, inland waters, underground waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington.*
6. *State natural area preserves and natural resource conservation areas. Natural area preserves and natural resource conservation areas are defined, established, and managed by the State Department of Natural Resources.*
7. *Land found by the Medina city council to be essential for preserving connections between habitat blocks and open spaces.*

Medina's definitions align closely with the intent of state requirements and expand on it with criteria that reflect local priorities and regulatory clarity. Notably, Medina excludes shellfish beds, kelp and eelgrass beds, and herring, smelt, and other forage fish spawning areas because these natural resources do not occur in the city.

7.2 FWHCAs in Medina

7.2.1 Waterbodies

According to the 2014 BAS Report there are six inventoried streams in the City which include Medina Creek (also known as "Fairweather Creek"), and five other unnamed creeks (The Watershed Company 2014). The unnamed creeks are referred to as the Fairweather Bay tributary, Medina Park tributary to Lake Washington, Meydenbauer Bay tributary, Overlake Drive stream, and Evergreen Point Road stream. The city is bordered by Lake Washington, on the north, west, and south, with shoreline along each of these edges. Several ponds have also been inventoried within the Overlake Gold and Country Club and Medina Park.

7.2.2 Wildlife and Habitats

Medina is a heavily developed city with limited areas of high-quality wildlife habitat. The Washington Department of Fish and Wildlife's (WDFW) Priority Habitats and Species (PHS) program has identified and mapped a biodiversity area and wildlife corridor within the Fairweather Nature Preserve. The only priority species mapped as having habitat within the city is the great blue heron (*Ardea herodias*), with a designated breeding area located in Medina Park. Additionally, wetlands and aquatic habitats have been inventoried by the PHS program within the Overlake Golf and Country Club and Medina Park.

Table 1 provides a comprehensive list of PHS species and habitats identified by WDFW as potentially occurring in King County. While many of these species are unlikely to be found in a highly urbanized environment such as Medina, rare or sensitive species may still occur infrequently. As WDFW notes, the

presence and distribution of habitats and species can shift over time as populations expand, contract, or respond to environmental changes.

Table 1. List of WDFW-designated priority habitats and species which occur in King County. 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		
	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		

	Species and Habitats	State Status	Federal Status
	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		
	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		
	Elk		
Invertebrates	Blue-gray Taildropper	Candidate	
	Pacific Clubtail	Candidate	
	Beller's Ground Beetle	Candidate	
	Hatch's Click Beetle	Candidate	
	Western Bumble Bee	Candidate	Candidate
	Johnson's Hairstreak	Candidate	
	Valley Silverspot	Candidate	

7.3 Functions and Values

FWHCAs support a wide range of biological, chemical, and physical conditions and processes that are essential to sustaining wildlife. Since wildlife includes all species, from the largest megafauna to microorganisms, functions reflect a complex web of interrelated ecological processes. At their core,

FWHCAs provide suitable habitat necessary for species survival. Beyond ecological value, ecosystems, plants, and wildlife also provide sources of food and materials for consumptive and productive uses. Additionally, they are valued for a range of cultural, social, and economic benefits (Chardonnet et al. 2002).

7.3.1 Streams, Lakes and Ponds, and Riparian Areas

Streams, lakes, ponds, and associated riparian areas provide essential habitat for a wide range of wildlife species and support ecosystem functions. Commonly recognized functions and processes that influence the habitat conditions within aquatic FWHCA types are outlined below.

Water Quality

- Many aquatic organisms including fish and amphibians require cool, clean water to meet their physiological and reproductive needs.
- Riparian vegetation regulates stream temperature and maintains stable microclimate conditions, including air temperature, wind speed, light exposure, and humidity. Riparian vegetation influence these functions through a variety of mechanisms including shade, orientation, relative humidity, ambient air temperature, wind, channel dimensions, groundwater, hyporheic exchange, and overhead cover (Quinn et al. 2020).
- Salmonids are among the most frequently studied species due to their cultural and economic importance, as well as their relative sensitivity to high temperatures and narrow thermal tolerance (Quinn et al. 2020). Amphibians also have narrow thermal tolerances and are sensitive to changes in microclimate conditions (Bury 2008).

Hydrology

- Streams, lakes, ponds, and their associated riparian areas often have complex and dynamic connections to other surface waters and groundwater within a watershed. These hydrologic linkages influence water availability, quality, and timing throughout the system.
- Hydrologic forces such as streamflow and floods transport water, nutrients, sediment, organic material, and organisms downstream, which shape channel morphology and support ecological processes.
- Many fish and wildlife species are adapted to, and in some cases dependent on, the natural variability of seasonal flows and flood regimes. This variability supports critical life cycle functions such as spawning, migration, foraging, and the creation of off-channel habitats.
- Riparian vegetation reduces the volume and velocity of surface water runoff through processes such as rainfall capture, infiltration, and evapotranspiration (Wynn and Mostaghimi 2007).
- Floodplain features, including wetlands and sinuous stream channels, attenuate peak flows during storm events, which helps to reduce downstream flood risk, recharge groundwater, and support habitat complexity.

Physical Habitat Characteristics

- 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 et al. 2020)

- Streams migrate naturally, often resulting in complex natural geomorphology, floodplains, and heterogeneous ecosystems.
- Bank stability is affected 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; R. Naiman et al. 1988)
- 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).

7.3.2 Impacts of Urbanization

Urban development significantly affects natural surface waters, riparian areas, and associated fish and wildlife that depend on them. The following section outlines the primary mechanisms by which urbanization impacts the functions and processes discussed above.

Changing Landcover and Impervious Surfaces

- Removal of riparian vegetation leads to higher instream water temperature (Beschta 1987; Murray et al. 2000; Moore and Wondzell 2005a; Gomi et al. 2006).
- Watersheds with widespread loss of forest land are more susceptible to channel instability (Booth et al. 2004). The resulting increase in erosion and bank instability, combined with a reduced of forest cover and root systems, often leads to the simplification of stream morphology, and produces incised, wider, and straighter stream channels (Konrad and Booth 2005).
- Increased impervious surface land cover is positively correlated with higher peak flow volumes and greater daily streamflow variability, and negatively correlated with groundwater recharge and summer low flow volumes (Burges et al. 1998; Cuo et al. 2009; Konrad and Booth 2005)
- Flows become more synchronized and become more variable and volatile in landscapes with high impervious surface cover (Sheldon et al. 2005).
- Simplified or less dynamic stream morphology linked to areas of high impervious surface is known to accelerate water transport and reduce temporary instream flood storage capacity (Kaufmann and Faustini 2012).
- Hydrological functions are also impacted through soil compaction, draining, and ditching across a landscape (Moore and Wondzell 2005b; 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 et al. 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 et al. 2005).
- Urban areas contribute a disproportionately high load of sediment and pollutants 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 by reducing spawning habitat quality for fish, smothering benthic organisms, and impairing overall aquatic ecosystem function (Jensen et al. 2009; Galbraith et al. 2006; Knutson et al. 2004)
- Cumulative impacts from both direct and indirect habitat alterations, such as changes in hydrologic, compromised water quality, and fragmentation, can significantly reduce the habitat functions and values of wetlands and riparian areas (Azous and Horner 2010; Sheldon et al. 2005).

7.4 Key Protection Strategies

7.4.1 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 notable online mapping tools are listed below; however, this list is not comprehensive. Since not all FWHCAs are mapped, and mapping may not reflect current on-the-ground conditions, any findings should be verified in the field by a qualified biologist.

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

7.4.1.1 Waters of the State

Waters of the state include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands[2] and all other surface waters and watercourses, as defined by RWC 90.48.020 and WAC 173-

[2] 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.

201A-020. For jurisdictional purposes, the ordinary high water mark (OHWM) is typically used to determine the boundary of these waters. In tidal waters, however, the USACE applies 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. While the definition and guidance for determining OHWM differ slightly between the USACE and Ecology, they are largely consistent in practice. 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)

The Washinton Department of Natural Resources (DNR) has developed a water typing system for streams and other waters based on various characteristics that has become the standard framework for applying city-scale regulations (WAC 222-16-030). As summarized in Table 2, these characteristics include flow volume, fish use and accessibility, seasonality, among others. Instead, Medina currently regulates streams with an older classification system adapted from the DNR Interim Water Typing System in WAC 222-16-031. However, Medina has condensed the five categories of the Interim System into three: Type 1, Type 2, and Type 3 that relatively match the current DNR System.

In a recent shift in state policy and guidance, WDFW, is recommending a change in stream protection methods by managing streams and their upland riparian areas together as a Riparian Management Zone (RMZ) using site potential tree height (SPTH) as a tool to determine buffer width (Rentz et al. 2020). This updated RMZ guidance is discussed further in Section 7.4.2.2.

Table 2. Water type classifications using DNR's water typing system according to WAC 222-16-030.

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.

7.4.2 Management Resources and Standards

7.4.2.1 Buffers based on Water Typing

Most jurisdictions in Washington State have historically managed stream and riparian habitats by establishing fixed-width buffers, having a width determined by a stream's water type classification. This approach arose in the forestry industry as a response to stream ecosystem degradation from industrial forestry expansion in the mid-20th century (Richardson et al. 2012). Fixed-width buffers have the advantage of being straightforward to define, implement, and regulate; however, they do not account for site-specific conditions which may influence a buffer's effectiveness. When fixed-width buffers are used, they should be sufficiently wide to ensure protection across a range of variable conditions.

7.4.2.2 Riparian Management Zones

In 2020, WDFW developed BAS guidance for the riparian protection, marking a shift from the traditional 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" (Quinn et al. 2020; Rentz et al. 2020). Further, RMZs are recommended to be regulated as a fish and wildlife habitat conservation areas themselves to protect their fundamental value, rather than simply buffers for waterbodies (Rentz et al. 2020).

WDFW's current recommendations for establishing RMZ widths are based primarily on the site potential tree height (SPTH) framework. The $SPTH_{200}$ 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 support implementation, WDFW has developed a web-based mapping tool which shows modeled SPTH values across much of Washinton State. The mean $SPTH_{200}$ in forested western Washington ecoregions range from 100 to 240 feet (Rentz et al. 2020). Although certain riparian forests may have lower $SPTH_{200}$ values, a minimum 100-foot RMZ width is recommended to preserve water quality buffer function. While modeled SPTH values may be used as an indicator of RMZ width, WDFW recommends site-specific SPTH field assessments to determine RMZ width. Such field assessments may also be needed to address data gaps or to refine modeled estimates ((WDFW 2025).

WDFW recommends using the SPTH value to determine the RMZ width, measured from the edge of OHWM or channel migration zone (if present), whichever is broader. In cases where SPTH values are less than 100 feet, a minimum RMZ width of 100 feet is recommended to ensure sufficient water quality protection, as well as to support habitat functions including shade and wood recruitment. A 100-foot-wide RMZ is estimated to remove 95% of pollutants and approximately 85% of surface nitrogen (Rentz et al. 2020).

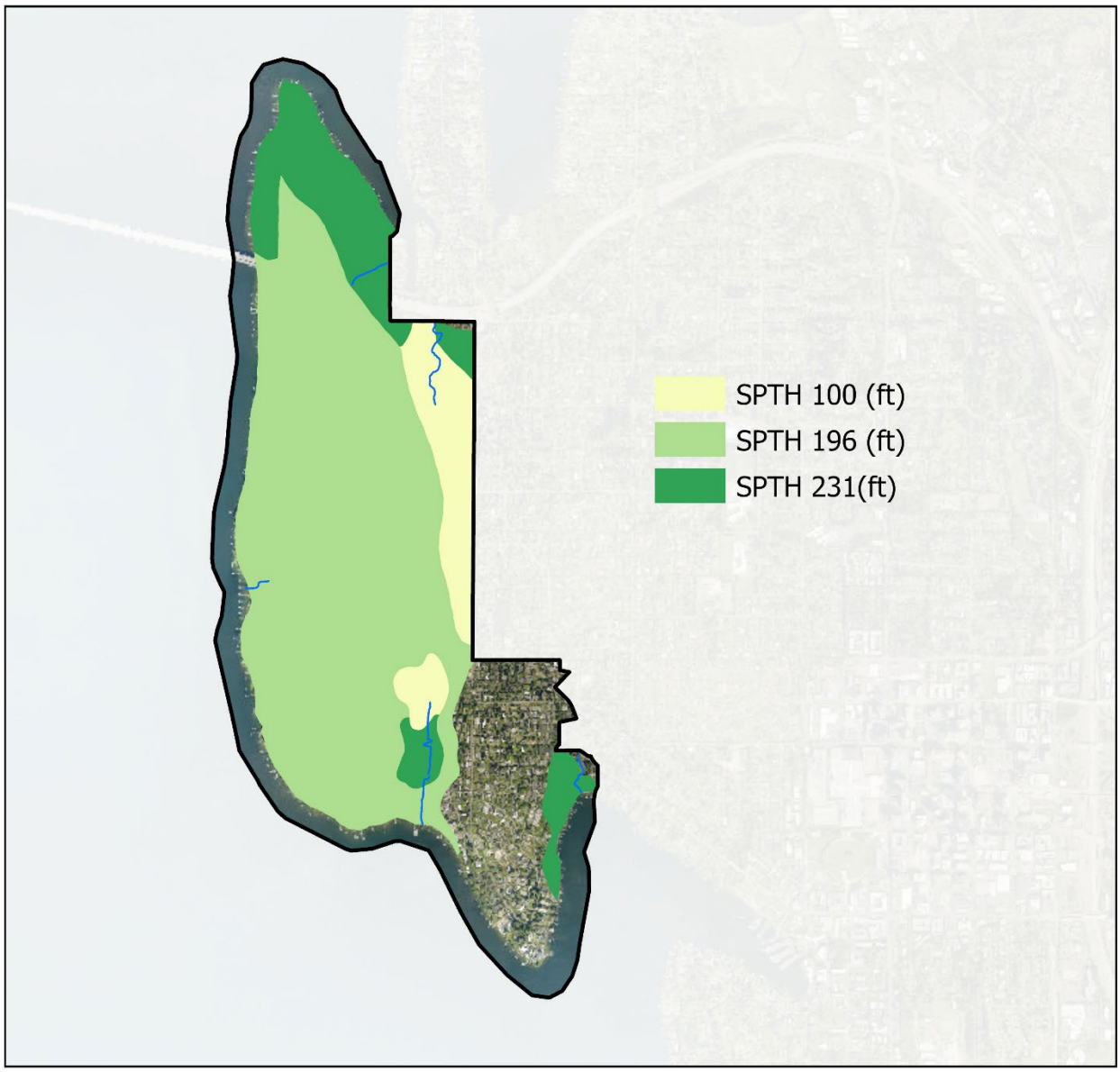

Figure 6. $SPTH_{200}$ distribution in Medina, the uncolored area indicates no data. Map produced from data obtained from WDFW and NRCS (2024).

A visual comparison of the current riparian buffers and potential SPTH-based RMZs is shown in Figure 7. The current extent of riparian buffers is projected using stream type information provided in available BAS resources, but it is considered approximate since the dataset is not comprehensive or exhaustive. Areas with no recommended SPTH values also show no buffer data.

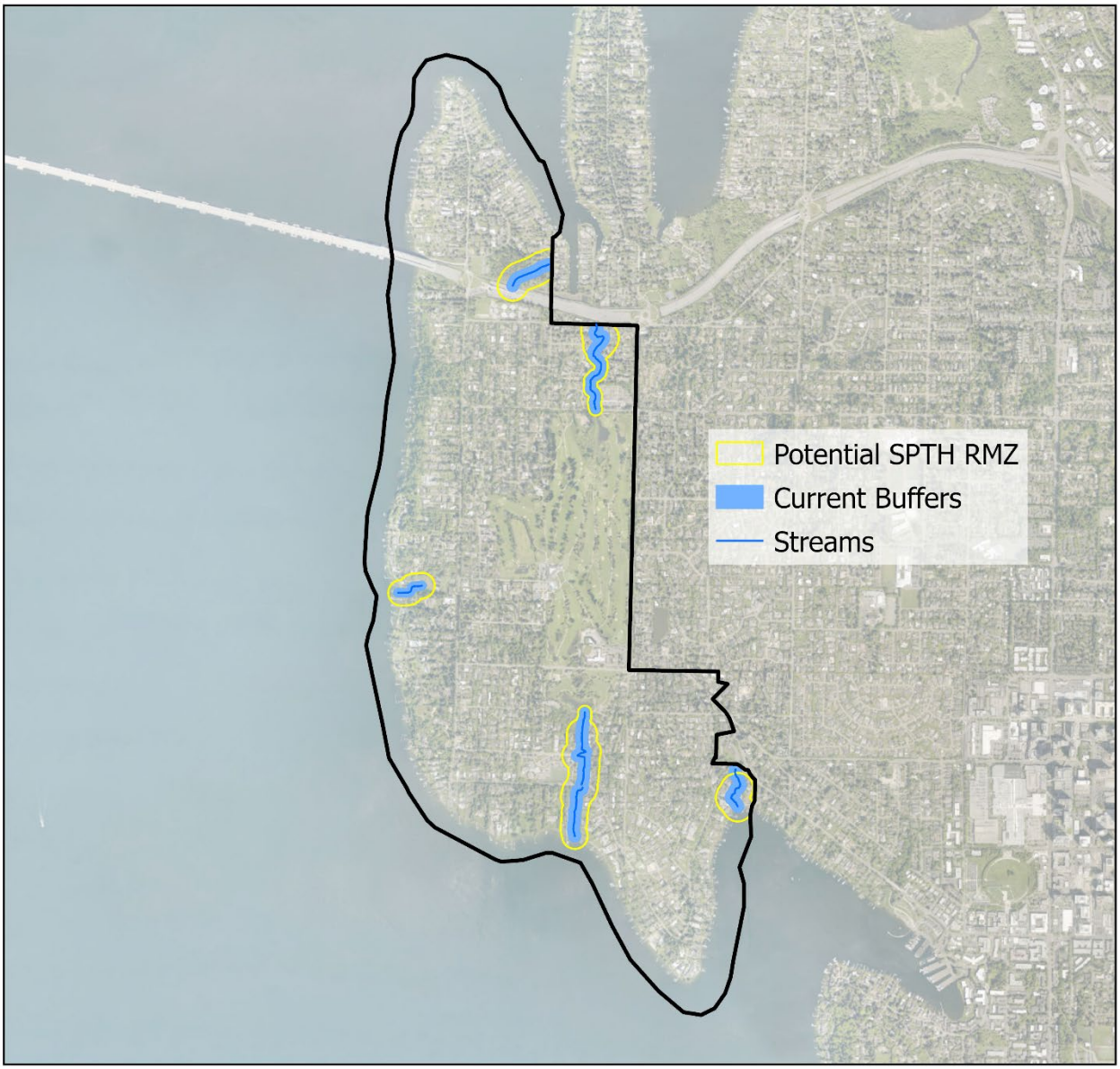

Figure 7. Visualization of potential $SPTH_{200}$-based riparian management zones (RMZs) compared to existing buffers.

Recognizing that establishing fully functional RMZs using the WDFW recommended methods may not be feasible in all developed areas, WDFW emphasizes effective watershed management, preservation, and the protection and restoration of ecosystem functions as much as possible within existing constraints. To support this goal, WDFW recommends delineating stream ordinary high water marks and associated riparian management zones, documenting current conditions to target riparian areas for restoration, and maintain or improve functions through regulatory and voluntary measures. In addition, Additional recommendations include prioritizing opportunities to maintain and restore in-stream and riparian connectivity, effective stormwater management, and requiring stormwater retrofits for redevelopment projects (Rentz et al. 2020).

In addition to the recommendations of WDFW, BAS-based literature identifies a range of management strategies and buffer considerations to help maintain habitat functions for fish and wildlife in urban environments. Effective methods to reduce impacts from urbanization and manage associated runoff should include the following:

- Retaining forests and other native vegetation and minimizing clearing in watershed;
- Maintaining vegetated riparian buffers;
- Limiting or consolidating development and reducing impervious surface coverage;
- Locating roads and other pollutant sources away from watercourses;
- Minimizing road networks and encouraging shared access roads and driveways;
- Implementing low impact development (LID);
- Installing municipal-scale stormwater treatment infrastructure;
- Promoting public education on watershed health and management.

As noted above, effective stormwater management is essential for watershed protection. Stormwater infrastructure, such as biofiltration swales, created wetlands, and infiltration systems, can intercept and treat runoff before reaching stream channels. However, stormwater that is conveyed in pipes or ditches directly to stream channels bypasses the buffer and water treatment functions. To preserve the biofiltration processes that a buffer naturally provides, stormwater discharges may be dispersed in outer buffer areas.

7.4.2.3 Species of Concern

Effective BAS-based strategies can be applied to protect state and federally listed endangered or threatened species and state designated priority habitats and species (PHS). Species-specific management recommendations by WDFW, USFWS, and NMFS have been made available to guide city-level or site-level management. While extensive information exists for high profile species, many regulated species have limited available data and lack detailed management recommendations from state or federal agencies. Where species or habitat-specific management recommendations are available from WDFW guidance documents, those should be followed or adapted to local regulatory frameworks. General recommendations for management strategies to protect terrestrial habitat are listed below.

General Terrestrial Habitat Management Recommendations

- High-quality habitats should be retained. Habitat loss is leading cause of biodiversity decline and extinction (Beninde et al. 2015).
- Minimize habitat fragmentation, particularly in large intact habitat areas by designing development to avoid breaking up ecosystems. Where large forests remain, manage for forest-interior species and avoid introducing fragmentation (Donnelly and Marzluff 2004; Diffendorfer et al. 1995; Mason et al. 2007; Pardini et al. 2005; WDFW 2009)
- Manage agricultural development to limit fragmentation and edge effects. Native vegetative and areas with structural complexity should be preserved (Southerland 1993).

- Protect priority habitats and focus on the preservation of habitats having a primary association with an ESA-list species or species of local importance. Follow WDFW management recommendations, and other BAS-based approaches to species protection and management.
- Control invasive species on a site-specific basis, with particular attention on high-risk areas which may be vulnerable due to disturbance, such as edges habitats, roadways, and riparian zones contiguous with developed areas (McKinney 2002; Olden et al. 2004; Pimentel et al. 2005).
- Protect and enhance key habitat structures such as snags and downed wood (Blewett and Marzluff 2005).
- Encourage native vegetative in landscaping and discourage lawns (Nelson and Nelson 2001).
- Site habitats away from roads to minimize edge effects and the threats of traffic on wildlife (Fahrig et al. 1995; Lehtinen et al. 1999).
- Promote adequate buffers to support entire wildlife communities (Ficetola et al. 2009; Semlitsch and Bodie 2003; Crawford and Semlitsch 2007).
- Support habitat connectivity by preserving or creating vegetated corridors between fragmented habitats (Gilbert-Norton et al. 2010).
- Identify and protect important habitat patches and corridors (Gillies and St. Clair 2008; Gilbert-Norton et al. 2010). In developed areas, habitat patches of at least moderate size 35 ha (86 ac) should be preserved because larger patches typically support greater biodiversity (Kissling and Garton 2008).
- Promote restoration of FWHCAs, buffers, and other management zones through land use regulations and public education. Encourage stewardship at a site-scale, and throughout the broader landscape.

7.5 Climate Change Effects

7.5.1 Strategies to Manage Climate Change Impacts on FWHCAs

Climate change is predicted to result in significant and irreversible impacts to fish, wildlife, and their habitats. Anticipated effects include habitat loss and degradation through temperature increases, sea level rise, ocean acidification, extreme weather events, altered precipitation patterns, biological invasions, food web disruptions, and disease (Lyons et al. 2022; Nagelkerken et al. 2023). The specific impacts on fish and wildlife vary by species and may include range shifts, phenological shifts, altered morphology and behavior, biodiversity loss, and increased risk of extinction (Sattar et al. 2021). Collectively, these factors are projected to contribute to biodiversity decline and higher rates of extinction (Sattar et al. 2021).

Changes in temperature and seasonal precipitation patterns are projected to significantly impact Pacific Northwest ecosystems. In riparian zones and other native habitats, warmer and drier summers are expected to result in reduced vegetation cover and shifts in plant community composition. These may trigger a cascade of ecological effects such as decreased shading, elevated stream temperature, reduced detrital inputs, diminishing instream habitat structure, and compromised stream bank stability.

Additionally, shifts in seasonal hydrology, such higher intensity and increasingly frequent storm events, are anticipated to increase the transport sediment and pollutants into streams. These conditions are expected to reduce groundwater recharge and lower capacity supports base stream flows in summer. Instream habitats are also particularly vulnerable to excess sediment discharge and deposition. Collectively, these factors threaten vulnerable salmonid populations, including Chinook salmon, a critical pray species for endangered Southern Resident Orca whales (Crozier et al. 2008).

The following policy approaches are adapted from other regional guidance in coordination with the University of Washington Climate Impacts Group, and represent potential strategies that Medina could use to mitigate climate-related impacts on FWHCAs (Redmond et al. 2022).

- Promote retention of trees and urban forests and enforce 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. This should be paired with monitoring, maintenance, dry season irrigation, and adaptive management.
- Consider climate resilient planting, including the consideration of assisted migration to source native plants genotypes that are adapted to future climate conditions.
- Manage stormwater infrastructure and promote LID to reduce the downstream impacts of stormwater runoff.
- Maintain and improve regulations which protect regulated wildlife species and associated habitats, and regularly update species maps to identify the lands most in need of protection.
- Prioritize the protection and restoration of streams and riparian corridors to mitigate the effects of climate change on native fish species, such as chinook salmon.
- Identify and protect cold water refugia in waterbodies to buffer impacted species from climate stressors.
- Conduct vulnerability assessments and develop climate action plans to identify priorities, allocate resources, and track priorities.

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FACET

Critical Areas Ordinance Update

Gap Analysis

CITY OF MEDINA

JULY 29, 2025

Prepared for:

City of Medina
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Facet Number: 2406.0332.02

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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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1. INTRODUCTION

With passage of the Growth Management Act (GMA) in 1990, local jurisdictions throughout Washington State, including the City of Medina, 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(11) to 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. The GMA requires local jurisdictions to periodically review and evaluate their adopted critical areas policies and regulations.

The City of Medina last completed a comprehensive update of its critical areas policies and regulations in 2015 and is now required to complete a periodic update. According to the Washington Administrative Code (WAC) 365-195-915, jurisdictions are required to incorporate "best available science" (BAS) into their critical areas policies and regulations to ensure adequate protection is achieved. Any deviations from science-based recommendations must be identified, assessed, and explained. In addition, jurisdictions must give "special consideration" to conservation or protection measures necessary to preserve or enhance anadromous fisheries. A BAS review for this code update has been prepared as a separate document (Facet 2025).

The City of Medina's critical areas policies are contained in the Natural Environment Element of the City of Medina Comprehensive Plan (Comprehensive Plan). Critical areas regulations are currently codified within Chapter 16.50 of Subtitle 16.5 *Environment* of Title 16 - Unified Development Code (UDC) of the Medina Municipal Code (MMC).

This gap analysis is a review of the current critical areas regulations with an evaluation of the gaps in consistency between the existing regulations and BAS or state law. 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.

1.1 Report Structure

The recommendations for updating the City's existing critical areas regulations are provided in Sections 2 through 5. Section 2 outlines the general provisions applicable to all critical areas, while Sections 3 through 5 address the specific types of critical areas in Medina, organized according to the structure of the current code[1]. Each section contains a summary table of recommendations followed by a detailed analysis of the existing code, potential gaps, and recommendations.

[1] Medina does not have critical aquifer recharge areas nor frequently flooded areas as part of its CAO

2. GENERAL PROVISIONS (MMC 16.50.010–.070)

This section addresses general provisions applicable to all types of critical areas as described in MMC 16.50.010-.070. A summary of recommended updates is provided in Table 1.

Table 1. Purpose and general provisions review summary.

Code Section	Title	Review Comment and Recommendations	Reason for Recommendation
MMC 16.50.010	Purpose.	No comments or recommendations	N/A
MMC 16.50.020	General Provisions.	No comments or recommendations	N/A
MMC 16.50.030	Applicability.	No comments or recommendations	N/A
MMC 16.50.040	Exemptions, existing structures, trams, and limited exemptions.	1. Revise section title. 2. Review emergency response exemption criteria. 3. Review regulations for legally existing structures. 4. Allow off site mitigation. 5. Review public and private nonmotorized trails exemption criteria. 6. Review removal of invasive or noxious plants exemption criteria. 7. Review hazard tree removal exemption criteria.	1. Clarity 2. WDFW RMZ Checklist recommendation 3. Clarity 4. BAS 5. WDFW RMZ Checklist recommendation 6. WDFW RMZ Checklist recommendation 7. WDFW RMZ Checklist recommendation
MMC 16.50.050	Relief from critical areas regulations.	No comments or recommendations	N/A
MMC 16.50.060	General requirements.	1. Recommend using consistent terminology. 2. Consider requiring use of native plant stock. 3. Review mitigation monitoring period.	1. Clarity 2. BAS 3. BAS
MMC 16.50.070	Critical areas reports.	1. Update definition of "qualified professional" in Definitions Chapter, MMC 16.12. 2. Require assessment of direct and indirect impacts.	1. BAS 2. BAS

2.1 Exemptions, Existing Structures, Trams, and Limited Exemptions (MMC 16.50.040)

2.1.1 Revise Section Title

As trams are not discussed in this section, the City should consider removing this item from the title.

2.1.2 Emergency Response (MMC 16.50.040(A)(1))

The emergency exception provision in MMC 16.50.040(A)(1) could be revised to outline that landowners may be required to modify, remove or restore any emergency repair work. See recommended edits to MMC 16.50.040(A)(1) in underlined text below:

> *1. Emergency actions 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 action in a time frame too short to allow compliance with this chapter, provided:*
>
> > *a. Immediately after the emergency action is completed, the owner shall notify the city of these actions within fourteen (14) days; and*
> >
> > *b. The owner shall fully restore and/or mitigate any impacts to critical areas and buffers in accordance with an approved critical area report and mitigation plan.*
> >
> > *c. Emergency actions shall use reasonable methods to address the emergency with the least possible impact on the critical area. Emergency response measures shall not include the construction of new permanent structures where none previously existed. In instances where the director determines that a new protective structure constitutes an appropriate response to the emergency, such structure shall either be removed upon abatement of the emergency condition or shall be subject to the acquisition of all permits that would have been required in the absence of an emergency. The director shall determine if the action taken was within the scope of the emergency actions allowed in this subsection.*

2.1.3 Existing Structures (MMC 16.50.040(B))

This section below under MMC 16.50.040(B) should be reviewed for clarity:

> *B. Existing structures.*
>
> *1. Existing structures may be maintained, repaired and remodeled provided there is no further intrusion into a critical area or its buffer.*
>
> *2. All new construction must conform to the requirements of this chapter except as provided for single-family residences in subsection (C)(1) of this section.*
>
> *3. Structures damaged or destroyed due to disaster (including nonconforming structures) may be rebuilt in like kind.*

The City should consider referencing the Nonconformity Chapter, MMC 16.36, or establish that the structure must be legally existing.

Update to clarify city review process for retention of existing legally established structures, both primary and nonprimary. Consider providing limits for abandoned structures. Clarify requirements for sites where previous structures have been demolished. Review nonconforming sites provision for alignment with current code administration with a focus on retaining equivalent or greater critical area functions.

2.1.4 Off Site Mitigation (MMC 16.50.040(C)(1)(d))

The City could consider revising the criteria for this limited exemption to require appropriate mitigation, so off site mitigation would be an option. Washington State Department of Ecology's (Ecology's) latest wetland guidance for CAO updates, Publication 22-06-014 finalized in October 2022, no longer supports that on-site, in kind mitigation is always the best option depending on the site-specific conditions.

2.1.5 Public and Private Nonmotorized Trails (MMC 16.50.040(C)(3))

To align with the recommendations included in the Washington State Department of Fish and Wildlife (WDFW) Riparian Management Zone (RMZ) Checklist, this exemption language could incorporate additional criteria for public and private nonmotorized trails: *impacts and disturbances must be minimized to the extent practicable, informed by Priority Habitats and Species data and management recommendations*.

2.1.6 Removal of Invasive or Noxious Plants (MMC 16.50.040(C)(4)(a))

This vegetation removal exception could be revised to include the following criteria: use of only Ecology-approved aquatic herbicides and adjuvants, avoid use of hazardous substances, and avoid soil compaction.

2.1.7 Hazard Tree Removal (MMC 16.50.040(A)(4)(b))

To align with the recommendations included in the WDFW RMZ Checklist, this exemption language could be improved by specifying the following:

- *Require that the method of hazard tree removal not adversely affect riparian ecosystem functions to the extent practicable*
- *Include emphasis on avoidance and minimization of damage to remaining trees and vegetation within the critical area or its associated buffer*

2.2 General Requirements (MMC 16.50.060)

2.2.1 Use Consistent Terminology

Throughout the code, the terms "director" and "city manager" are both used. It is recommended to choose one to use throughout the code.

2.2.2 Planting Plan (MMC 16.50.060(D)(7)(d))

It is considered a best management practice for restoration activities to use native plant species appropriate to the site for revegetation of disturbed or degraded areas. This is also a strategy to manage climate change impacts to wetlands, as use of native plant stock grown under local conditions can increase resilience under climate stressors. While it is likely the policy employed in practice, the mitigation requirements under MMC 16.50.060(D), except Subsection 16.50.060(D)(7)(d)(iii), do not currently include a specific requirement for use of native species. The City could consider adding this requirement as a general requirement for mitigation planting plans.

2.2.3 Mitigation Monitoring Period (MMC 16.50.060(D)(8)(d))

Recommend requiring performance standard monitoring for a period of at least five (5) years for critical areas and ten (10) or more years for wetlands with scrub-shrub or forested vegetation communities in alignment with Ecology's model ordinance (Ecology Publication No. 22-06-014).

2.3 Critical Areas Report (MMC 16.50.070)

2.3.1 Qualified Professional (MMC 16.50.070(A)(1))

The current code defines "qualified professional" under MMC 16.12.180 as:

> *Qualified professional means a person with experience and training in the applicable critical area. A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, engineering, environmental studies, fisheries, geomorphology or related field, and two years of related work experience.*
>
> *1. A qualified professional for streams and fish and wildlife habitat conservation areas or wetlands must have a degree in biology or related field and relevant professional experience.*
>
> *2. A qualified professional for a geologic hazard must be a professional engineer or geologist, licensed in the State of Washington.*

The City should include a definition of a qualified wetland professional consistent with the definition found in Ecology's model ordinance (Ecology Publication No. 22-06-014) below:

> *Qualified wetland professional: A person with professional wetland experience that meets the following criteria:*
>
> > *(a) A Bachelor of Science or Bachelor of Arts or equivalent degree in hydrology, soil science, botany, ecology, resource management, or related field, or four years of full-time work experience as a wetland professional may substitute for a degree, and*
> >
> > *(b) At least two additional years of full-time work experience as a wetland professional; including delineating wetlands, preparing wetland reports, conducting function assessments, and developing and implementing mitigation plans, and*

> *(c) Completion of additional wetland-specific training programs. This could include a more comprehensive program such as the University of Washington Wetland Science and Management Certificate Program or individual workshops on topics such as wetland delineation, function assessment, mitigation design, hydrophytic plant or hydric soil identification.*
>
> *A person certified as a Professional Wetland Scientist through the Society of Wetland Scientists professional certification program meets the above criteria*

Additionally, the description for a professional qualified to perform a geotechnical report and geotechnical assessment could be improved, per the Washington State Department of Commerce (Commerce) Critical Areas Handbook (2023):

> *RCW 18.220.010 identifies the different types of geology licenses in Washington State: licensed geologists (LGs), licensed engineering geologists, and geotechnical engineers.*

2.3.2 Direct and Indirect Impacts (MMC 16.50.070(B)(6))

In addition to cumulative impacts, the critical areas report should include a section to assess both direct and indirect impacts of the proposed activity.

3. WETLANDS (MMC 16.50.080)

This section addresses code applicable to wetlands as described in MMC 16.50.080. A summary of recommended updates is provided in Table 2.

Table 2. Wetlands review summary.

Code Section	Title	Review Comment and Recommendations	Reason for Recommendation
MMC 16.50.080(A)	Designation.	Revise reference to federal wetland delineation manual.	BAS
MMC 16.50.080(B)	Wetland ratings.	Update wetland rating publication reference.	BAS
MMC 16.50.080(C)	Wetland rating categories.	Omit descriptions of wetland categories.	BAS
MMC 16.50.080(D)	Mapping.	No comments or recommendations	N/A
MMC 16.50.080(E)	Development standards.	Review buffer width tables per Ecology guidance.	BAS
MMC 16.50.080(x)	Buffer width increase.	New section for buffer width increase.	BAS

Code Section	Title	Review Comment and Recommendations	Reason for Recommendation
MMC 16.50.080(F)	Wetland buffer reduction.	Remove buffer reduction options.	BAS
MMC 16.50.080(G)	Wetland buffer reduction incentive options.	Review for compliance with Ecology Publication No. 22-06-014 and update for wetland minimization measures.	BAS
MMC 16.50.080(H)	Averaging of wetland buffer width.	Review buffer averaging criteria.	BAS
MMC 16.50.080(I)	Wetland buffer averaging and wetland buffer reduction.	No comments or recommendations	N/A
MMC 16.50.080(x)	Allowed buffer uses.	New section for allowed buffer uses.	BAS
MMC 16.50.080(J)	Buffers for mitigation shall be consistent.	No comments or recommendations	N/A
MMC 16.50.080(K)	Buffer conditions shall be maintained.	Provide more details on standard buffer condition requirements.	BAS
MMC 16.50.080(x)	Functionally disconnected buffer	New section for disconnected functional buffer.	BAS
MMC 16.50.080(L)	Temporary markers.	No comments or recommendations	N/A
MMC 16.50.080(M)	Permanent signs.	No comments or recommendations	N/A
MMC 16.50.080(N)	Fencing.	No comments or recommendations	N/A
MMC 16.50.080(O)	Additional mitigation measures.	1. Update Guidance on Wetland Mitigation publication. 2. Provide clarity on impacts of wetland mitigation. 3. Provide methods of compensatory mitigation. 4. Update mitigation ratio tables. 5. Review allowance to decrease replacement ratio. 6. Include credit/debit method. 7. Update programmatic mitigation allowances.	1. BAS 2. BAS 3. BAS 4.BAS 5. BAS 6. BAS 7. BAS
MMC 16.50.080(x)	Additional report requirements.	New section for additional report requirements for projects that may affect wetlands or wetland buffers.	BAS

3.1 Designation (MMC 16.50.080(A))

The current code includes a reference to WAC 173-22-035 that requires the use of approved federal manuals and regional supplements. Wetlands are determined by the 1987 *Corps of Engineers Wetland Delineation Manual* by the U.S. Corps of Engineers (USACE) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. We recommend that the City codify the requirement for these manuals to be used in wetland delineations and adopt all additional revised versions of the manuals.

3.2 Wetland Ratings (MMC 16.50.080(B))

It is recommended to update this section with the most recent version of the wetland rating system, *Wetland Rating System for Western Washington: 2014 Update, Version 2.0* (Hruby and Yahnke 2023). The current Ecology Publication Number is 23-06-009. We recommend updating this publication reference and having this code adopt all additional revised versions of the rating system. This current rating system version is very similar to the prior 2014 publication. Changes were focused on clarifications, formatting improvements, updated website links, and annotations. Revisions are not considered significant, which is why it is labeled as version 2.0 of the 2014 update. The city attorney will review this proposed language for compliance with state law.

3.3 Wetland Rating Categories (MMC 16.50.080(C))

The descriptions for the types of wetlands under MMC Table 16.50.080(C): Wetland Categories may not be inclusive of every scenario. It is recommended to consider omitting these descriptions and relying on the wetland rating system.

3.4 Development Standards (MMC 16.50.080(E))

Ecology's latest wetland guidance for CAO updates, Publication 22-06-014 finalized in October 2022, provides three BAS based options for wetland buffer tables. The code's current buffer widths are displayed below in Table 3.

Table 3. Current wetlands buffers from MMC Table 16.50.080(E)

Wetland Category	Buffer width if wetland scores less than 5 habitat points	Buffer width if wetland scores 5 habitat points	Buffer width if wetland scores 6—7 habitat points	Buffer width if wetland scores 8—9 habitat points
Category I	100 feet	140 feet	220 feet	300 feet
Category II	100 feet			
Category III	80 feet			Not applicable
Category IV	50 feet	Not applicable		

Ecology's preferred option, Option 1 (Table 4), provides the most flexibility and site-specific buffers. Under Option 1 there are two different variations- the reduced variation only allowable through provision of a habitat corridor and implementation of minimization measures to reduce the level of impact from the adjacent land use.

Use of the variation with the lowest buffer widths under Option 1, shown in Table 4, requires the implementation of minimization measures shown in Table 5. Such measures are not currently in the code. Table 5 is not a complete list of measures, nor is every measure required, but every effort should be made to implement as many measures as applicable and practicable, as determined by City staff. If an applicant chooses not to apply the applicable minimization measures, then an approximately 33% increase in the width of all buffers is required, see Table 6. Note that for wetlands that score 6 points or more for habitat function (as determined by the 2014 Wetland Rating System rating forms), to use the reduced widths in Table 4, the protection of a wildlife corridor of at least 100 feet wide is also required between the wetland and certain other protected areas (specified in the Ecology 2022 CAO guidance). If a corridor cannot be provided, then the non-reduced (33% increase) buffer would be required for those higher functioning wetlands.

Ecology also provides an option to use graduated buffer widths in the July 2018 *Appendix 8-C of Wetlands in Washington State, Volume 2* (Ecology Publication No. 05-06-008). The current code uses a mixed step-wise and graduated scale approach. Instead of "N/A," the City could consider placing a buffer width in the boxes where they have decided not to scale up the established width.

Table 4. Ecology Buffer Option 1 (wetland buffer width requirements, in feet, if Table 5 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 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 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 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

Table 5. 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.)
Stormwater runoff	• Parking lots • Roads	• Retrofit stormwater detention and treatment for roads and existing adjacent development

Examples of disturbance	Activities and uses that cause disturbances	Examples of measures to minimize impacts
	• Residential areas • Commercial/industrial • Recreation • Landscaping/lawns • Other impermeable surfaces, compacted soil, etc.	• 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 • Planet 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 6. Ecology Buffer Option 1 (without minimization measures and a habitat corridor is not provided)(wetland buffer width requirements, in feet)

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 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 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 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

Ecology Buffer Option 2 is based on category and the level of impact from the adjacent proposed or existing land use. This option necessitates inclusion of a table with levels of impacts from proposed land use types.

Table 7. Ecology Buffer Option 2

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

Finally, Ecology Buffer Option 3 is based solely on the category of wetland. It is the simplest to administer; however, it is the least flexible and differs the most from the system in the current code. We do not recommend Option 3 for Medina.

Table 8. Ecology Buffer Option 3

Wetland Category	Buffer
I	300 ft
II	300 ft
III	150 ft
IV	50 ft

Additional details and examples can be found in the following guidance documents:

- The 2022 Ecology document *Wetland Guidance for Critical Areas Ordinance (CAO) Updates, Western and Eastern Washington* (Ecology 2022), which is intended as an update to the 2016/2018 document.
- The 2018 appendix *Wetlands in Washington State – Volume 2, Appendix 8-C* (Granger et al. 2005, Revised July 2018).

3.5 Buffer Width Increase (MMC 16.50.080(x))

The City could consider including provisions for buffer width increases. The following language, adapted from Ecology's model ordinance (Ecology Publication No. 22-06-014), could be added:

> *Increased Wetland Buffer Width. Buffer widths shall be increased by 33 percent as determined by the* [director] *when a wider buffer is necessary to protect wetland functions and values. This determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the wetland. The documentation shall include but not be limited to the following criteria:*
>
> *a. The wetland is used by a state or federally listed plant or animal species. These species would be those listed under WAC 220-610-010, 50 CFR 17-11, 50 CFR 17-12, or other state or federal regulations.*
>
> *b. The wetland has critical habitat; or a priority area for a priority species as defined by WDFW; or Wetlands of High Conservation Value as defined by the Washington Department of Natural Resources' Natural Heritage Program.*
>
> *c. The adjacent land is susceptible to severe erosion, and erosion-control measures will not effectively prevent adverse wetland impacts.*
>
> *d. The adjacent land has minimal vegetative cover.*
>
> *e. The land has slopes greater than 30 percent.*

Ecology's model ordinance recommends a case-by-case approach to buffer increases under certain circumstances, including minimal vegetative cover (Ecology Publication No. 22-06-014). Some neighboring jurisdictions have applied set buffer width increases. For example, City of Kirkland applies a 33 percent increase to buffers that are not densely vegetated with native trees, shrubs and groundcover plants and are not planted to meet that standard (KZC 90.55). City of Issaquah requires development proposals to employ rehabilitation or enhancement of degraded buffer areas when more than 25 percent of the buffer is invasive/nonnative vegetation or native tree/shrub covers less than 25 percent of the buffer area (IMC 18.802.220.G).

3.6 Wetland Buffer Reduction (MMC 16.50.080(F))

Administrative buffer reductions to widths lower than standard buffers are no longer considered to be BAS or state policy (Ecology 2022). We recommend that Medina remove buffer reduction allowances through administrative permitting channels as referenced below in the current code (MMC 1650.080(F) and (G)):

> *F. Wetland buffer reduction. The wetland buffer widths in Table 16.50.080(E) may be reduced by up to a maximum of 25 percent provided:*
>
> > *1. The amount of reduction is based on voluntary employment of incentive-based action measures set forth in subsection (G) of this section;*
> >
> > *2. A critical areas report prepared by a professional with expertise in wetlands and approved by the city using the best available science determines a smaller area can be adequate to protect the wetland functions and values based on site-specific characteristics;*
> >
> > *3. The mitigation provided will result in a net improvement of the wetland and buffer functions;*
> >
> > *4. Any remaining wetland buffer areas on the property not subject to the reduction, but are degraded, are revegetated with native plants; and*
> >
> > *5. A five-year monitoring and maintenance program is provided.*
>
> *G. Wetland buffer reduction incentive options. Table 16.50.080(G) provides incentive options that may be employed to reduce a wetland buffer width as allowed in subsection (F) of this section. Where multiple options for an action are prescribed in the table, only one option under that action may be applied.*

Current BAS does not support additional buffer reductions beyond the habitat corridor/minimization measures reduction to reduce the level of impact from adjacent land use, as discussed above under Option 1 only (Table 4). Additionally, Ecology's current buffer recommendations are based on a buffer that is already well vegetated. If the existing buffer area is not currently vegetated in a manner to provide the necessary buffer function, then the buffer area should be planted, or the buffer width should be increased. Reducing buffer area in circumstances where buffers are already degraded will result in a high-risk approach to protecting wetland function. Rather, Ecology recommends that buffer reductions should be tied to reducing the impacts from the adjacent land use, such as provided by Option 2 (Table 7). Further reductions would not generally be supported.

3.7 Wetland Buffer Reduction Incentive Options (MMC 16.50.080(G))

The City should consider removing the buffer reduction incentive options and in compliance with Ecology's 2022 guidance (Publication No. 22-06-014), consider incorporating the most recent wetland minimization and avoidance measures into Table 16.50.080(G), see Table 5.

3.8 Averaging of Wetland Buffer Width (MMC 16.50.080(H))

The City should consider implementing buffer width averaging as an alternative to administrative buffer reductions. It is recommended that Medina consider the model wetland regulations of Ecology's Publication No. 22-06-014 and adopt similar criteria. This guidance allows buffer averaging, if 1) to improve the protection of wetland functions or 2) it is the only way to allow for reasonable use of a parcel. In addition, the buffer averaging regulations in MMC 16.50.080(H)(4) do not impose restrictions on the minimum width of a buffer. The habitat buffer averaging referenced below in MMC 16.50.080(H) could be revised:

> MMC 16.50.080(H)
> *Averaging of wetland buffer width. The city may allow the wetland buffer width around the boundaries of the wetland to be averaged provided:*
>
> > *1. The proposal results in a net improvement of wetland, habitat and buffer function;*
> >
> > *2. The proposal includes revegetation of the averaged buffer using native plants, if needed;*
> >
> > *3. The total area contained in the buffer of each wetland on the development proposal site is not decreased;*
> >
> > *4. The wetland buffer width is not reduced by more than 25 percent in any one location; and*
> >
> > *5. A critical areas report meeting the requirements set forth in MMC 16.50.070 indicates the criteria in this subsection are satisfied.*

Ecology's (2022) model ordinance:

> *Buffer averaging to improve wetland protection may be permitted when all of the following conditions are met:*
>
> *a. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a dual-rated wetland with a Category I area adjacent to a lower-rated area.*

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

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

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

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

a. No feasible alternatives to the site design could be accomplished without buffer averaging.

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

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

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

See the draft code amendments for the suggested code change.

3.9 Allowed Buffer Uses (MMC 16.50.080(x))

Ecology Publication No. 22-06-014 recommends jurisdictions consider the following activities as allowed buffer uses, provided they are not prohibited by any other applicable law, and they are conducted in a manner so as to minimize impacts to the buffer and adjacent wetland:

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

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

a. Walkways and trails, provided that they are limited to minor crossings having no adverse impact on water quality. They should be generally parallel to the perimeter of the wetland, located only in the outer twenty-five percent (25%) of the wetland buffer area, and located to avoid removal of significant [as defined in ordinance], old growth, or mature trees. They should be limited to pervious surfaces no more than five (5) feet in width and designed for pedestrian use only. Raised boardwalks utilizing nontreated pilings may be acceptable.

b. Wildlife-viewing structures.

3. Educational and scientific research activities.

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

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

6. Drilling for utilities/utility corridors under a buffer, with entrance/exit portals located completely outside of the wetland buffer boundary, provided that the drilling does not alter 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 would be disturbed.

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

8. Repair and maintenance of legally established non-conforming uses or structures, provided they do not increase the degree of nonconformity.

3.10 Buffer Conditions Shall be Maintained (MMC 16.50.080(K))

Some modification and additional detail to this section would improve clarity and better align with BAS recommendations. 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.

The City may also consider specifying that wetland buffers shall be undisturbed as well as retained in their natural condition.

3.11 Functionally Disconnected Wetland Buffer

The current code does not clarify provisions around existing structures and uses that may cause functionally disconnected buffers. Ecology Publication No. 22-06-014 recommends the following language:

> *Buffers may exclude areas that are functionally and effectively disconnected from the wetland by an existing public or private road or legally established development, as determined by the Director. Functionally and effectively disconnected means that the road or other significant development blocks the protective measures provided by a buffer. Significant developments shall include built public infrastructure such as roads and railroads, and private developments such as homes or commercial structures. The Director shall evaluate whether the interruption will affect the entirety of the buffer. Individual structures may not fully interrupt buffer function. In such cases, the allowable buffer exclusion should be limited in scope to just the portion of the buffer that is affected. Where questions exist regarding whether a development functionally disconnects the buffer, or the extent of that impact, the Director may require a critical area report to analyze and document the buffer functionality.*

3.12 Additional Mitigation Measures (MMC 16.50.080(O))

3.12.1 Update Guidance on Wetland Mitigation in Washington State Publication (MMC 16.50.080(O)(1))

It is recommended to update this section with the most recent version of the interagency guidance on wetland mitigation, *Wetland Mitigation in Washington State–Part 1: Agency Policies and Guidance (Version 2)* (Ecology, USACE, and EPA 2021). The current Ecology Publication Number is 21-06-003. The code should also incorporate *Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Version 1)* (Ecology, USACE, and EPA 2006), Ecology publication number 06-06-011b.

3.12.2 Net gain in wetland or buffer functions (MMC 16.50.080(O)(2))

The current code under MMC 16.50.080(O)(2) provides the following:

> *Wetland or wetland buffer mitigation actions shall not result in a net loss of wetland or buffer area except when the lost wetland or buffer area provides minimal functions and the mitigation action(s) results in a net gain in wetland or buffer functions as determined by a site-specific function assessment.*

This code section could be improved by specifying that mitigation sequencing is required and mitigation replacement ratios or the credit-debit method must be used to determine loss and gain in function.

3.12.3 Compensatory Mitigation Methods

The current code allows creation or reestablishment and enhancement as types of mitigation. The City could consider providing allowances for additional mitigation types. These terms should be defined in the mitigation requirements code section as they each have specific criteria that must be met. Alternatively, they could be defined in a separate definitions chapter and referenced in the wetlands section, or the code could reference the definitions in one of the wetland guidance documents where these terms are defined, such as the interagency guidance from Ecology, USACE, and EPA Publication No. 21-06-003 (2021) and Ecology Publication No. 22-06-014. In order of preference, see compensatory mitigation methods and their definitions from the Ecology Publication No. 22-06-014 below:

> *1. 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.*
>
> *2. Establishment (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* [director] *may authorize establishment of a wetland and buffer upon demonstration by the applicant's qualified wetland professional that:*

i. 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;

ii. 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

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

iv. The proposed wetland would not be established at the cost of another high-functioning habitat (i.e., ecologically important uplands).

3. 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 [director] *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:

i. Category I or II wetland rating (per 020.B of this Section).

ii. 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.

iii. The presence of habitat for threatened or endangered species (state, federal, or both).

iv. Provides biological and/or hydrological connectivity to other habitats.

v. 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 [director] *may approve another legal and administrative mechanism in lieu of a conservation easement if it is determined to be adequate to protect the site.*

4. 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.

3.12.4 Update Wetland Mitigation Ratios

The City should consider incorporating the wetland mitigation replacement ratios for each method of compensatory mitigation. The City could consider revising MMC Table 16.50.080(O) shown in Table 9 with replacement ratios consistent with Ecology Publication No. 22-06-014 in Tables 10 and 11 below.

Table 9. Current wetland mitigation ratios from MMC Table 16.50.080(O)

Wetland Category	Reestablishment or Creation	Enhancement as Mitigation
Category I	6:1	16:1
Category II	3:1	12:1
Category III	2:1	8:1
Category IV	1.5:1	6:1

Table 10. Compensation ratios for permanent impacts to wetlands

Category of impacted wetland (based on score for function)	Re-establishment or creation	Rehabilitation	Preservation	Enhancement
Category I	4:1	8:1	16:1	16:1
Category II	3:1	6:1	12:1	12:1
Category III	2:1	4:1	8:1	8:1
Category IV	1.5:1	3:1	6:1	6:1

Table 11. Compensation ratios for unavoidable permanent impacts to wetlands with special characteristics

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	3:1 (re-establishment only)	6:1	12:1	Limited circumstances (case by case)
Category II Estuarine wetlands	4:1 (re-establishment only)	8:1	16:1	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

These ratios apply to direct wetland impacts; however, there are no stated mitigation ratios for impacts to wetland buffers. Medina should consider applying standardized buffer mitigation ratios for various types of vegetation cover. Since these instances result in a net loss of total buffer area, it is important for wetland functions that mitigation is adequate to replace lost functions. It is recommended that mitigation ratios are 1:1 or greater. Ratios greater than 1:1 may be necessary to account for temporal loss, loss of buffer area, risk of failure, and to ensure no net loss of ecological function.

3.12.5 Review Decreased Replacement Ratio (MMC 16.50.080(O)(6)(c))

The current code allows an administrative decreased replacement ratio (MMC 16.50.080(O)(6)(c)). For consistency with Ecology Publication No. 22-06-014, the City should include the following criteria that must be met:

> *Reductions in replacement ratios are appropriate under the following circumstances:*
>
> *• Documentation by a qualified wetland specialist (see Appendix 8-H) demonstrates that the proposed mitigation actions have a very high likelihood of success based on prior experience*
>
> *• Documentation by a qualified wetland specialist demonstrates that the proposed actions for compensation will provide functions and values that are significantly greater than the wetland being affected*
>
> *• The proposed actions for compensation are conducted in advance of the impact and are shown to be successful*
>
> *• In wetlands where several HGM classes are found within one delineated boundary, the areas of the wetlands within each HGM class can be scored and rated separately and the ratios adjusted accordingly, if all of the following apply:*
>
> > *– The wetland does not meet any of the criteria for wetlands with "Special Characteristics" as defined in the rating system*
> >
> > *– The rating and score for the entire wetland is provided along with the scores and ratings for each area with a different HGM class.*
> >
> > *– Impacts to the wetland are all within an area that has a different HGM class from the one used to establish the initial category*
> >
> > *– The proponents provide adequate hydrologic and geomorphic data to establish that the boundary between HGM classes lies at least 50 feet outside of the footprint of the impacts*

3.12.6 Add Allowance for Mitigation Based on the Credit-Debit Method

To give regulators and applicants a functions-based alternative to set mitigation ratios, Ecology has developed a tool called the credit-debit method. This method, like the Ecology wetland rating form, is a peer-reviewed rapid assessment tool. The credit-debit approach may be used to calculate functional gain of the proposed mitigation and functional loss due to proposed wetland impacts. This generates acre-points that can be compared in a balance sheet. Depending on specific site conditions, this may result in less or more mitigation than would be required under the standard mitigation ratio guidance. The City may want to consider adding language that would allow, as an alternative to the mitigation ratios, mitigation based on the credit-debit tool described in *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report* (Hruby 2012).

3.12.7 Wetland Mitigation Banks (MMC 15.60.080(O)(7))

The City should consider updating this section to a more general term, programmatic mitigation. Programmatic mitigation consists of approved third-party sponsors mitigation such as mitigation banks and fee in-lieu programs which the current code allows. Approved options can be described under that heading.

Also, third-party mitigation credits needed should be documented in a bank use plan to document how credit needs were calculated.

3.13 Additional Report Requirements *(MMC 16.50.080(x))*

This is a new section the City could consider adding to the code. The current code's reporting requirements may not be consistent with the most recent guidance from Ecology, specific to wetlands.

The Ecology (2022) guidance provides the following language:

> *Minimum Standards for Wetland Reports. The written report and the accompanying plan sheets shall contain the following information, at a minimum:*
>
> *1. The written report shall include at a minimum:*
>
> > *a. The name and contact information of the applicant; the name, qualifications, and contact information of the primary author(s) of the report; a description of the proposal; identification of all the local, state, and/or federal wetland-related permit(s) required for the project; and a vicinity map for the project.*
> >
> > *b. A statement specifying the accuracy of the report and all assumptions made and relied upon.*
> >
> > *c. Documentation of any fieldwork performed on the site, including field data sheets for delineations, rating system forms, baseline hydrologic data, etc.*

d. A description of the methodologies used to conduct the wetland delineations, wetland ratings, and impact analyses, including references.

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

f. For each wetland identified on site and within 300 feet of the project boundary, provide the completed wetland rating, per Section 020.B of this Chapter; required buffers; hydrogeomorphic classification; wetland area based on the field delineation (area for on-site portion and estimate entire wetland area including off-site portions); Cowardin classifications; habitat elements; soil conditions based on site assessment and/or soil survey information; and to the extent possible, hydrologic information such as location and condition of inlets/outlets, estimated water depths within the wetland, and estimated hydroperiod patterns based on visual cues (e.g., algal mats, drift lines, flood debris, etc.). Provide area estimates, classifications, and ratings based on entire wetland units, not only the portion present on the proposed project site.

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

h. An assessment of the probable cumulative impacts to the wetlands and buffers resulting from the proposed development, considering past development and potential future development.

i. A description of how mitigation sequencing has been followed, pursuant to Section 070.A, Mitigation Sequencing, of this Chapter.

j. An evaluation of the functions of the wetland and its buffer, including references for the method used and data sheets.

k. A discussion of the potential impacts to the wetland(s) associated with any anticipated hydroperiod alterations from the project.

2. The site plan sheet(s) shall include, at a minimum:

a. Maps (to scale) depicting delineated and mapped wetlands and required buffers on site, including buffers for off-site wetlands that extend onto the project site; the development proposal; other critical areas and their buffers; grading and clearing limits; and areas of proposed impacts to wetlands and/or buffers (include square footage or acreage).

b. A depiction of the proposed stormwater management facilities and outlets (to scale) for the development, including estimated areas of intrusion into wetland buffers.

To provide specificity around the procedures following an expired wetland report, it is recommended to clarify that a new delineation or review is required for a proposal within a wetland delineated greater than 5 years ago.

4. GEOLOGICALLY HAZARDOUS AREAS (MMC 16.50.090)

This section addresses code applicable to geologically hazardous areas as described in MMC 16.50.090. A summary of recommended updates is provided in Table 12.

Table 12. Geologically hazardous areas review summary.

Code Section	Title	Review Comment and Recommendations	Reason for Recommendation
MMC 16.50.090(A)	*Designation.*	No comments or recommendations	N/A
MMC 16.50.090(B)	Specific hazard areas—Designation.	No comments or recommendations	N/A
MMC 16.50.090(C)	Mapping.	Update mapping resources.	BAS
MMC 16.50.090(D)	Additional report requirements.	No comments or recommendations	N/A
MMC 16.50.090(E)	*Geotechnical assessment.*	No comments or recommendations	N/A
MMC 16.50.090(F)	*Geotechnical or critical area report.*	No comments or recommendations	N/A
MMC 16.50.090(G)	*Seismic hazard areas geotechnical reporting.*	No comments or recommendations	N/A
MMC 16.50.090(H)	General development standards.	No comments or recommendations	N/A
MMC 16.50.090(I)	Specific development standards.	No comments or recommendations	N/A

4.1 Mapping (MMC 16.50.090(C))

A Liquefaction Susceptibility Map of King County issued by Washington Department of Natural Resources (DNR) dated September 2004, is source of data for liquefaction hazards. DNR provides all liquefaction data in a web application called the Washington Geologic Information Portal.[2]

5. FISH AND WILDLIFE HABITAT CONSERVATION AREAS (MMC 16.50.100)

This section addresses code applicable to fish and wildlife habitat conservation areas as described in MMC 16.50.100. A summary of recommended updates is provided in Table 13.

Table 13. Fish and wildlife habitat conservation areas review summary.

Code Section	Title	Review Comment and Recommendations	Reason for Recommendation
MMC 16.50.100(A)	*Applicability.*	Update WAC references.	BAS
MMC 16.50.100(B)	Water typing.	Consider updating water typing system.	BAS
MMC 16.50.100(C)	Mapping.	1. Update salmonid mapping sources. 2. Recommend updating map resources.	1. BAS 2. BAS
MMC 16.50.100(D)	Initial fish and wildlife habitat assessment.	No comments or recommendations	N/A
MMC 16.50.100(E)	*Habitat assessment.*	Recommend using consistent terminology.	Clarity
MMC 16.50.100(F)	General development standards.	Require on-site sewage systems to be located outside of FWHCAs.	WDFW RMZ Checklist recommendation

[2] https://geologyportal.dnr.wa.gov/2d-view#wigm?-13617550,-13599205,6040741,6049445?Surface_Geology,500k_Surface_Geology,Map_Units

Code Section	Title	Review Comment and Recommendations	Reason for Recommendation
MMC 16.50.100(G)	Buffers.	1. Review WDFW's Riparian Management Zone (RMZ) approach to stream protection. Consider an update of buffer widths to align more closely with the RMZ guidance. 2. Review administrative buffer reduction standards in alignment with RMZ approach.	1. BAS 2. BAS
MMC 16.50.100(H)	Permitted activities in stream buffers.	Update references.	BAS
MMC 16.50.100(I)	Signs and fencing.	No comments or recommendations	N/A
MMC 16.50.100(J)	*Subdivision and short subdivision.*	No comments or recommendations	N/A

5.1 *Applicability* (MMC 16.50.100(A))

5.1.1 Update WAC References

The following references should be updated:

- WAC 232-12-014 was recodified under WAC 220-610-010
- WAC 232-10-011 was recodified under WAC 220-200-100

5.2 Water Typing (MMC 16.50.100(B))

Consider updating stream water typing designations to align with the DNR water typing system under WAC 222-16-030 from the current system shown in Table 14. At a minimum, the City should consider designating waters as Type F, Type Np, and Type Ns. The BAS review for this code update further details DNR's water typing system (Facet 2025).

Table 14. Current code's stream water type table (MMC Table 16.50.100(B)) in comparison to DNR water typing (WAC 222-16-030)

Current Water Typing	Current Designation Criteria	DNR Water Typing
Type 1 Stream	Segments of streams that are at least seasonally utilized by fish for spawning, rearing or migration. Stream segments which are fish passable from Lake Washington are presumed to have at least seasonal fish use. Fish passage should be determined using the best professional judgment of a qualified professional.	Type F

Type 2 Stream	Perennial non-fish-bearing streams. Perennial streams do not go dry any time during a year of normal rainfall. However, for the purpose of stream typing, Type 2 streams include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. If the uppermost point of perennial flow cannot be identified with simple, nontechnical observations, then the point of perennial flow should be determined using the best professional judgment of a qualified professional.	Type Np
Type 3 Stream	Segments of natural waters that are not classified as Type 1 or 2 streams. These are seasonal, non-fish-bearing streams in which surface flow is not present for a significant portion of a year of normal rainfall and are not located downstream from any Type 2 or higher stream.	Type Ns

5.3 Mapping (MMC 16.50.100(C))

5.3.1 Presence of Salmonids (MMC 16.50.100(C)(1)(b))

MMC 16.50.100(C)(1)(b) states that salmonid presence should be determined by data from the "Habitat Limiting Factors Reports" compiled by the Washington Conservation Commission. Stream conditions and barriers have changed since this map was produced. We recommend that salmonid presence also include all streams mapped by the Statewide Washington Integrated Fish Distribution (SWIFD)[3] database. In this database, presence is either documented or modeled as gradient accessible and meeting fish habitat criteria under WAC 222-16-030. Also, any other valid source of information which may confirm salmonid presence should be evaluated and considered by the City.

5.3.2 Additional Mapping Sources

The Washington Department of Natural Resources Natural Heritage Program[4] also provides lists and locations of high-quality ecosystems and rare plants. Accordingly, referencing this important resource as a critical area map is recommended.

5.4 Habitat Assessment (MMC 16.50.100(E)(4))

Recommend using the consistent term, habitat assessment, and remove reference to a habitat management plan.

[3] https://geo.wa.gov/datasets/wdfw::statewide-washington-integrated-fish-distribution/explore?location=47.629856%2C-122.231072%2C13.73

[4] https://experience.arcgis.com/experience/174566100f2a47bebe56db3f0f78b5d9/

5.5 General Development Standards (MMC 16.50.100(F))

Similar to the geologically hazardous areas section and for consistency with the WDFW RMZ Checklist, the code should include the following prohibited activity: *On-site sewage disposal systems, including drain fields and infiltration drainage systems, shall be prohibited within fish and wildlife habitat conservation areas and related buffers.*

5.6 Buffers (MMC 16.50.100(G))

5.6.1 Site Potential Tree Height

It is recommended to review WDFW's most recent publication, *Riparian Ecosystems, Volume 2: Management Recommendation*s (Rentz et al. 2020), and the recommendations for riparian protections summarized in the *Best Available Science Review, Critical Areas Ordinance Update, City of Medina,* Section 7.4.2 (Facet 2025). The current code's method to protect FWHCAs using fixed widths based on water type is not consistent with the recommendation described in the WDFW RMZ guidance (Rentz et al. 2020), which emphasizes potential variable buffer widths depending upon site potential tree height (SPTH). Current regulatory buffers would result in a range of 25-100 feet depending on stream type and reduction incentive options applied. Whereas WDFW riparian protection recommendations are based on soil type and dominant SPTH after 200 years of growth, $SPTH_{200}$. Under this $SPTH_{200}$ approach, WDFW no longer recommends using a stream classification system based on fish use. All streams are recognized as performing important functions and $SPTH_{200}$ model seeks to achieve full ecological function.

Riparian buffer recommendations under $SPTH_{200}$ range from approximately 100 feet to 231 feet in the City of Medina based on the WDFW $SPTH_{200}$ Mapping Tool[5]. Site-specific exceptions may occur where the $SPTH_{200}$ is less than 100 feet, in which case a minimum 100-foot buffer is recommended 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. RMZ buffer recommendations presume the area is densely vegetated with native plants.

As a part of the CAO update, we recommend that the City consider WDFW's recommended RMZ approach to stream classifications and buffer widths, including whether to incorporate the $SPTH_{200}$ Mapping Tool as part of stream buffer protection standards. Current BAS on water quality buffer functions must also be considered. We recommend reviewing water quality buffer functions along with stormwater management regulations. In general, urban settings are limited by surrounding land uses; review of buffer widths should be paired with consideration of requirements to enhance ecological functions. The City must review the BAS-based recommendations and determine the best regulatory approach for the City. While WDFW does recommend utilizing the $SPTH_{200}$ model, jurisdictions have

[5] https://wdfw.maps.arcgis.com/apps/MapJournal/index.html?appid=35b39e40a2af447b9556ef1314a5622d

also pursued alternative, more predictive approaches that are still in alignment with BAS and providing sufficient protection of riparian areas.

As described in the BAS Report (Facet 2025), WDFW recommends the RMZ to be designated as a FWHCA, while many jurisdictions designate this as a riparian protection area.

5.6.2 Buffer Reduction

To align with the recommendations contained within Rentz et al. (2020), the City should consider removing the administrative buffer reductions, referenced below in MMC 16.50.100(G)(3), Reduction of stream buffer widths, and in MMC Table 16.50.100(G)(3): Stream Buffer Reduction Incentive Options:

> *3. Reduction of stream buffer widths. The director may allow the standard buffer width to be reduced by up to the listed minimum buffer width in Table 16.50.100(G)(2) provided:*
>
> > *a. A critical area report and mitigation plan approved by the city, and the best available science applied on a case-by-case basis, determine that a smaller area is adequate to protect the habitat functions and values based on site-specific characteristics and the proposal will result in a net improvement of stream and buffer functions;*
> >
> > *b. A plan for mitigating buffer-reduction impacts is prepared using selected incentive-based mitigation options in Table 16.50.100(G)(3);*
> >
> > *c. Where a substantial portion of the remaining buffer is degraded, revegetation with native plants in the degraded portions shall be included in the remaining buffer area;*
> >
> > *d. A five-year monitoring and maintenance plan shall be included;*
> >
> > *e. Incentive options may be accumulatively applied to allow a reduction allowance not to exceed 50 percent of the standard buffer width and Table 16.50.100(G)(2); and*
> >
> > *f. Where multiple options for an action are prescribed in the Table 16.50.100(G)(3), only one option under that action may be applied.*

5.7 Permitted Activities in Stream Buffers (MMC 16.50.100(H))

The reference in MMC 16.50.100(H)(3)(d) to the *National Marine Fisheries Service Anadromous Salmonid Passage Facility Design*, February 2008 was amended in 2022 and should be updated accordingly.

6. REFERENCES

Ecology (Washington State Department of Ecology). 2022. "Wetland guidance for critical areas ordinance (CAO) updates, Western and Eastern Washington." Washington State Department of Ecology Publication #22-06-014. Olympia, WA. https://apps.ecology.wa.gov/publications/documents/2206014.pdf

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Rentz, T., A. Windrope, K. Folkerts, and J. Azerrad. 2020. "Riparian Ecosystems, Volume 2: Management Recommendations." Habitat Program, Washington Department of Fish and Wildlife, Olympia. https://wdfw.wa.gov/sites/default/files/publications/01988/wdfw01988.pdf

WDFW (Washington Department of Fish and Wildlife). 2024. "PHS Riparian Site Potential Tree Height (SPTH) Downloads." WDFW. Available at: https://geo.wa.gov/documents/073e8eb38a3949dfa43bc555b914df04/explore

16.12.180. - "Q" definitions.

Qualified professional means a person with experience and training in the applicable critical area. A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, engineering, environmental studies, fisheries, geomorphology, geology, or related field, and two years of related work experience.

~~1. A qualified professional for streams and fish and wildlife habitat conservation areas or wetlands must have a degree in biology or related field and relevant professional experience.~~

~~2. A qualified professional for a geologic hazard must be a professional engineer or geologist, licensed in the State of Washington.~~

1. Streams, wetlands, and fish and wildlife habitat conservation areas – For wetlands, a qualified wetland professional is a person with professional wetland experience who meets all of the following:

   a. A Bachelor of Science or Bachelor of Arts or equivalent degree in hydrology, soil science, botany, ecology, resource management, or related field; or four years of full-time work experience as a wetland professional may substitute for a degree; and

   b. At least two additional years of full-time work experience as a wetland professional, including delineating wetlands, preparing wetland reports, conducting functional assessments, and developing and implementing mitigation plans; and

   c. Completion of additional wetland-specific training programs. This may include a comprehensive program such as the University of Washington Wetland Science and Management Certificate Program, or individual workshops on topics such as wetland delineation, function assessment, mitigation design, hydrophytic plant identification, or hydric soil identification.

   A person certified as a Professional Wetland Scientist (PWS) through the Society of Wetland Scientists professional certification program meets the above criteria.

2. Geologically hazardous areas – A qualified professional for geotechnical reports and assessments must be licensed in the State of Washington as a professional engineer (PE) with geotechnical expertise, a licensed geologist (LG), a licensed engineering geologist (LEG), or a licensed hydrogeologist (LHG) as defined under RCW 18.220.010.

SUBTITLE 16.5. ENVIRONMENT

CHAPTER 16.50. CRITICAL AREAS

16.50.010. Purpose.

A. The purpose of this chapter is to designate and classify ecologically critical areas, to protect these areas and their functions and values, and to supplement the development regulations contained in the Medina Municipal Code by providing for additional controls required by the Growth Management Act.

B. Within the city, known critical areas include wetlands, geologically hazardous areas, and fish and wildlife habitat conservation areas. The city recognizes that critical areas provide a variety of valuable and beneficial biological and physical functions that benefit the city and its residents, and/or may pose a threat to human safety or to public and private property. The standards and mechanisms established in this chapter are intended to protect critical areas while providing property owners with reasonable use of their property.

C. This chapter seeks to:

1. Protect the public health, safety and welfare by minimizing adverse impacts of development;
2. To protect property owners from injury, property damage or financial losses due to erosion, landslides, steep slope failures, seismic events, volcanic eruptions, or flooding;
3. Protect unique, fragile, and valuable elements of the environment, including ground and surface waters, wetlands, and fish and wildlife and their habitats through application of best available science, as determined according to WAC 365-195-900 through 365-195-925, and in consultation with state and federal agencies and other qualified professionals;
4. Prevent adverse cumulative impacts to water quality, wetlands, streams, fish and wildlife and their potential habitats;
5. Direct activities not dependent on critical area resources to less ecologically sensitive sites and mitigate unavoidable impacts to critical areas by regulating alterations in and adjacent to critical areas;
6. Alert appraisers, assessors, owners and potential buyers or lessees to the development limitations of environmentally sensitive areas; and
7. Implement the goals, policies, guidelines and requirements of the State Environmental Policy Act, the Growth Management Act, Chapter 43.21C RCW, the Medina comprehensive plan, and all city functional plans and policies.

(Code 1988 § 20.50.010; Ord. No. 924 § 3 (Att. B), 2015)

16.50.020. General provisions.

A. This chapter is not intended to repeal, abrogate or impair any existing regulations. Should a regulation in this chapter conflict with other regulations, the conflict shall be resolved consistent with MMC 16.10.030 and in

favor of the provision which provides the most protection environmentally to the critical areas unless specifically provided otherwise in this chapter or such provision conflicts with federal or state laws or regulations.

B. This chapter shall apply as an overlay and in addition to zoning and other regulations adopted by the city, except within the shoreline jurisdiction. Where critical areas are located within the shoreline jurisdiction, Chapter 16.67 MMC shall apply in lieu of this chapter.

C. Compliance with the provisions of this chapter does not constitute compliance with other federal, state, and local regulations and permit requirements that may be required.

D. Consistent with MMC 16.10.020, the provisions of this chapter set forth the minimum requirements in their interpretation and application and shall be liberally construed to serve the purposes set forth in MMC 16.50.010.

E. These critical area regulations shall apply concurrently with review conducted under the State Environmental Policy Act (SEPA).

F. Any individual critical area adjoined by another type of critical area shall have the buffer and the requirements applied that provide the most protection to the critical areas involved. Where any existing regulation, easement, covenant, or deed restriction conflicts with this chapter, the provisions of that which provides the most protection to the critical areas shall apply.

G. Interpretations of this chapter shall be done in accordance with MMC 16.10.050.

H. Approval of a permit or development proposal pursuant to the provisions of this title does not discharge the obligation of the applicant or property owner to comply with the provisions of this title.

(Code 1988 § 20.50.020; Ord. No. 924 § 3 (Att. B), 2015)

16.50.030. Applicability.

A. This chapter shall apply to all areas outside of the shoreline jurisdiction within the municipal boundaries of the city which contain critical areas and their buffers as defined in this chapter.

B. These provisions apply to projects undertaken by either private or public entities.

C. All development permits, including but not limited to building, grading, drainage, short plats, lot line adjustments, variances, conditional and special uses, and demolition, shall be reviewed pursuant to the provisions of this chapter.

D. Variances to the provisions in this chapter shall not be granted, except as provided for in MMC 16.50.050.

(Code 1988 § 20.50.030; Ord. No. 924 § 3 (Att. B), 2015)

16.50.035 Guidance documents adopted by reference; director authority.

A. The following documents are referenced in this Subtitle 16.50 MMC and are hereby adopted by reference and incorporated herein:

1. 1987 Corps of Engineers Wetland Delineation Manual by the U.S. Army Corps of Engineers (USACE);
2. 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0);

3. Washington Department of Ecology Wetland Rating System for Western Washington: 2014 Update, Version 2.0 (Hruby and Yahnke 2023) (Ecology Publication No. 23-06-009);

4. Department of Fish and Wildlife Water Crossing Design Guidelines, May 2013;

5. National Marine Fisheries Service Anadromous Salmonid Passage Facility Design, February 2008; or

6. Guidelines for Salmonid Passage at Stream Crossings in Oregon, Washington, and Idaho (June 2022); and

7. Invasive or noxious species listed by the Washington State Noxious Weed Control Board or the King County Noxious Weed Control.

B. The director shall have the authority to adopt updated versions of the documents adopted in this section by publishing links to the updates onto the city website and placing these updated documents on file with the clerk's office. In such case, the updated documents shall apply.

16.50.040. Exemptions, existing structures, ~~trams~~ and limited exemptions.

Commented [DN1]: See Gap Analysis Section 2.1.1. Trams are not discussed in this section

A. *Critical areas exemptions.* The following developments, activities and associated uses shall be exempt from the requirements of this chapter; provided, that they are otherwise consistent with the provisions of other local, state, and federal laws and requirements:

1. Emergency actions 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 action in a time frame too short to allow compliance with this chapter, provided:

   a. Immediately after the emergency action is completed, the owner shall notify the city of these actions within 14 days; and

   b. The owner shall fully restore and/or mitigate any impacts to critical areas and buffers in accordance with an approved critical area report and mitigation plan.

   c. Emergency actions shall use reasonable methods to address the emergency with the least possible impact on the critical area. Emergency response measures shall not include the construction of new permanent structures where none previously existed. In instances where the director determines that a new protective structure constitutes an appropriate response to the emergency, such structure shall either be removed upon abatement of the emergency condition or shall be subject to the acquisition of all permits that would have been required in the absence of an emergency. The director shall determine if the action taken was within the scope of the emergency actions allowed in this subsection.

Commented [DN2]: See Gap Analysis Section 2.1.2

2. Operation, maintenance, remodel or repair of existing structures and facilities, provided there is no further intrusion into a critical area or its buffer and there is no significant increase in risk to life or property as a result of the action.

3. Passive recreation, education, and scientific research activities that do not degrade critical areas or buffers, such as fishing, hiking and bird watching, not including trail building or clearing.

4. Minor site investigative work necessary for land use submittals, such as surveys, soil logs, percolation tests, and other related activities, where:

   a. Such activities do not require construction of new roads or significant amounts of excavation; and

   b. The disruption to the critical areas and buffers shall be minimized and the disturbed areas immediately restored.

5. Construction or modification of navigational aids and boundary markers.

B. *Existing structures.*

1. Existing structures that are legally established may be maintained, repaired and remodeled provided there is no further intrusion into a critical area or its buffer.
2. All new construction must conform to the requirements of this chapter except as provided for single-family residences in subsection (C)(1) of this section and in compliance with the provisions of Chapter 16.36 MMC Nonconformity.
3. Structures damaged or destroyed due to disaster (including nonconforming structures) may be rebuilt in like kind in accordance with Chapter 16.36 MMC and provided there is no net loss of critical area functions. Reconstruction of structures that have been abandoned for more than 12 consecutive months, or where the previous structure has been demolished, shall comply with current code requirements.

C. *Limited critical areas exemptions.* The following developments, activities, and associated uses shall not be required to follow a critical areas review process; provided, that they are consistent with the requirements of this chapter. The city may condition approval of such to ensure adequate critical areas protection:

1. Existing single-family residences may be expanded, reconstructed, or replaced, provided all of the following are met:
   a. Expansion within a critical area buffer is limited to 500 square feet of footprint beyond the existing footprint;
   b. The expansion extends no closer to critical area than the existing setback;
   c. The proposal preserves the functions and values of wetlands, fish and wildlife habitat conservation areas, and their buffers;
   d. The proposal includes ~~on-site mitigation to offset any impacts~~ mitigation, which may be located on-site or off-site, as determined appropriate by the City, and is sufficient to fully offset to critical areas and their buffers, consistent with best available science and in accordance with MMC 16.50.60(C) mitigation sequencing;
   e. The proposal will not significantly affect drainage capabilities, flood potential, and steep slopes and landslide hazards on neighboring properties; and
   f. The expansion would not cause a tree within a buffer to be labeled as a hazardous tree and thus require the removal of the hazardous tree;
2. Replacement, modification, installation or construction of streets and utilities in existing developed utility easements, improved city street rights-of-way, or developed private streets. Utilities include water, sewer lines, and stormwater and franchise (private) utilities such as natural gas lines, telecommunication lines, cable communication lines, electrical lines and other appurtenances associated with these utilities. The activity cannot further permanently alter or increase the impact to, or encroach further within, a critical area or buffer and must utilize best management practices;
3. Public and private nonmotorized trails. Public and private pedestrian trails, provided:
   a. An alternatives analysis demonstrates there is no practicable alternative that would avoid the critical area or its buffer, or that would place the trail farther from the critical area while still meeting the essential purpose of the trail~~There is no practicable alternative that would allow placement of the trail outside of critical areas or their buffers~~;

Commented [DY3]: Revised based on Gap Analysis 2.1.3. This version addresses the gap analysis by:
1.Requiring structures to be *legally established*.
2.Adding a cross-reference to the Nonconformity Chapter.
3.Clarifying that abandoned or demolished structures must meet current standards.
4.Ensuring that any rebuilding retains or improves critical area functions.

Commented [DY4]: Revised based on Gap Analysis 2.1.4. This version addresses the Gap Analysis by:
1.Removed the absolute *on-site* requirement to allow off-site mitigation when site-specific conditions make it preferable.
2.Clarified that the location is determined by the City.
3.Added requirement for full functional offset of impacts.
4.Incorporated BAS and mitigation sequencing principles.

Commented [DY5]: Revised based on Gap Analysis 2.1.5. This version addresses the gap analysis by:
1.Prioritizing avoidance and minimization before allowing buffer intrusion.
2.Using PHS data to inform siting/design.
3.Requiring pervious/elevated surfaces, width limits, and restoration. ADA accessibility or shared use pulled from Puyallup, Shoreline, and Ecology's 2022 CAO guidance.
4.Balancing function retention through buffer widening or enhancement.

b. The trail surface shall ~~meet all other requirements including water quality standards~~be pervious or elevated (e.g., boardwalk) where feasible, meet applicable water quality standards, and be designed to minimize grading, vegetation removal, and soil compaction;

c. Trails proposed in stream or wetland buffers shall be located in the outer 25 percent of the buffer area, except when bridges or access points are proposed and no practicable alternative exists;

d. Stream and wetland buffer widths shall be increased, where possible, equal to the width of the trail corridor, including disturbed areas, or an equivalent area of degraded buffer within the same buffer segment shall be enhanced to maintain no net loss of buffer function;

e. Trail corridors in critical areas and buffers shall not exceed five ~~six~~ feet in width, except that up to eight feet may be approved to meet ADA accessibility or multi-use safety needs, as demonstrated in the alternatives analysis; ~~and~~

f. Trails proposed to be located in landslide or erosion hazard areas shall be constructed in a manner that does not increase the risk of landslide or erosion and in accordance with an approved geotechnical report and shall incorporate measures to avoid directing drainage toward the hazard area;

g. Trail location, design, and construction shall minimize impacts and disturbances to the extent practicable, be informed by the most current WDFW Priority Habitats and Species data, and incorporate applicable management recommendations;

h. Lighting, fencing, and signage shall be wildlife-friendly, minimize disturbance, and be located only where necessary for safety or resource protection; and

~~g.~~i. Temporary disturbance areas shall be restored and replanted with native vegetation appropriate to the site.

4. Select vegetation removal activities. The following limited vegetation removal activities are allowed in critical areas and buffers. Otherwise, removal of any vegetation or woody debris from a critical area shall be prohibited unless the action is part of an approved alteration.

a. The removal of ~~the following~~ vegetation consisting of invasive or noxious species listed by the Washington State Noxious Weed Control Board or the King County Noxious Weed Control Program with hand labor and/or light equipment; provided, that the appropriate erosion-control measures are used; herbicide application, where necessary, is limited to Washington State Department of Ecology–approved aquatic herbicides and adjuvants; hazardous substances are avoided; soil disturbance and compaction are minimized; and all disturbed areas are promptly replanted with native vegetation consistent with MMC 16.50.060(D)(7)(d). ~~and the area is replanted with native vegetation:~~

~~i. Invasive weeds;~~

~~ii. Himalayan blackberry (Rubus discolor, R. procerus);~~

~~iii. Evergreen blackberry (R. laciniatus);~~

~~iv. Ivy (Hedera spp.); and~~

~~v. Holly (Ilex spp.), laurel, Japanese knotweed (Polygonum cuspidatum), or any other species on the King County Noxious Weed List.~~

b. The cutting and removal of trees that are hazardous, posing a threat to public safety, or posing an imminent risk of damage to private property, from critical areas and buffers; provided, that:

Commented [DY6]: Revised based on Gap Analysis 2.1.6. This version addresses the gap analysis by:
1.Limits to invasive/noxious species removal and references State and County lists.
2.Adds Ecology-approved herbicide requirement.
3.Prohibits hazardous substances.
4.Adds soil protection criteria.
5.Cross-references native vegetation planting standard for restoration.

Commented [DY7]: Revised based on Gap Analysis 2.1.7. This version addresses the Gap Analysis by:
1.Adding riparian function protection language (per WDFW RMZ guidance).
2.Adding explicit avoidance/minimization requirements for impacts to other vegetation.
3.Encourages low-impact equipment use and soil protection measures.

i. The applicant submits a report from a qualified professional (e.g., certified arborist or professional forester) that documents the hazard as specified in Chapter 16.52 MMC and provides a replanting schedule for replacement trees;

ii. Tree cutting shall be limited to limb and crown thinning, unless otherwise justified by a qualified professional. Where limb or crown thinning is not sufficient to address the hazard, trees should be topped to remove the hazard rather than cut at or near the base of the tree, and the method of removal shall avoid adverse impacts to riparian ecosystem functions to the maximum extent practicable;

iii. All native vegetation cut (tree stems, branches, tops, etc.) shall be left within the critical area or buffer unless removal is warranted due to the potential for disease transmittal to other healthy vegetation or the remaining material would threaten the survival of existing native vegetation. However, no cut material shall be left on a steep slope or landslide hazard area without the approval of a qualified professional. Retained material should be placed to avoid obstructing hydrologic flows or causing bank instability;

iv. Trees shall be cut to leave standing snags when doing so allows the hazard of the tree to be eliminated, unless removal is necessary to address public safety or property damage risks;

v. The landowner shall replace any native trees that are felled ~~or topped~~ with new trees at ratios specified in Chapter 16.52 MMC within one year in accordance with an approved restoration plan prepared by a qualified professional. Tree species that are native and indigenous to the site shall be used;

vi. If a tree to be removed provides critical habitat, such as an eagle perch, a qualified wildlife biologist shall be consulted to determine timing and methods for removal that will minimize impacts; ~~and~~

vii. Hazard trees determined to pose an imminent threat or danger to public health or safety, or to public or private property, or serious environmental degradation may be removed or topped by the landowner prior to receiving written approval from city; provided, that within 14 days following such action, the landowner shall submit a restoration plan that demonstrates compliance with the provisions of this title.; a~~A~~nd

viii. Removal activities shall avoid and minimize damage to remaining trees and vegetation within the critical area or its associated buffer, limit equipment use to hand tools or low-impact machinery where feasible, and implement soil protection measures to minimize disturbance and compaction.

c. Trimming of vegetation for purposes of providing view corridors will be allowed; provided:

i. It is consistent with Chapters 14.08 and 16.52 MMC and that trimming shall be limited to view corridors of 20 feet in width or less;

ii. The limbs involved do not exceed three inches in diameter;

iii. Not more than 25 percent of the live crown is removed;

iv. Benefits to fish and wildlife habitat are not reduced;

v. Trimming is limited to hand pruning of branches and vegetation; and

vi. Trimming does not include felling, topping, stripping, excessive pruning or removal of trees.

d. Measures to control a fire or halt the spread of disease or damaging insects consistent with the State Forest Practices Act, Chapter 76.09 RCW; provided, that the removed vegetation shall be

replaced in-kind or with similar native species within one year in accordance with an approved restoration plan prepared by a qualified professional; and

5. Conservation, preservation, restoration and/or enhancement.

   a. Conservation and/or preservation of soil, water, vegetation, fish and/or other wildlife that does not entail alteration of the location, size, dimensions or functions of an existing critical area and/or buffer; and

   b. Restoration and/or enhancement of critical areas or buffers; provided, that actions do not alter the location, dimensions or size of the critical area and/or buffer; that actions do not alter or disturb existing native vegetation or wildlife habitat attributes; that actions improve and do not reduce the existing functions of the critical areas or buffers; and that actions are implemented according to a restoration and/or enhancement plan that has been approved by the city.

(Code 1988 § 20.50.040; Ord. No. 958 § 2, 2018; Ord. No. 924 § 3 (Att. B), 2015)

16.50.050. Relief from critical areas regulations.

A. If application of this chapter would deny all reasonable use of the subject property, the owner may apply for a reasonable use exception pursuant to MMC 16.72.060.

B. If application of this chapter would prohibit a development proposal by a public agency or public utility, the agency or utility may apply for an exception from the requirements of this chapter pursuant to MMC 16.72.070.

(Code 1988 § 20.50.050; Ord. No. 924 § 3 (Att. B), 2015)

16.50.060. General requirements.

A. *Avoid impacts to critical areas.*

1. The applicant shall avoid all impacts that degrade the functions and values of a critical area(s) and/or buffer(s) or do not result in an acceptable level of risk for a steep slope hazard area and/or its buffer.

2. Unless otherwise provided for in this chapter:

   a. If alteration to fish and wildlife habitat conservation areas, wetlands and/or their buffers is proposed, impacts resulting from a development proposal or alteration shall be mitigated in accordance with the mitigation sequencing set forth in subsection (C) of this section and an approved critical area report and any applicable SEPA documents; or

   b. A development proposal or alteration within a geologically hazardous area and/or its buffer must comply with a geotechnical report approved by the city that assesses the risk to health and safety, and makes recommendations for reducing the risk to acceptable levels through engineering, design, and/or construction practices.

B. *Mitigation.*

1. Mitigation shall be in-kind and on site, where feasible, and sufficient to maintain critical areas and/or buffer functions and values, and to prevent risk from hazards posed by a critical area.

2. Mitigation shall not be implemented until after the city approves the applicable critical area report and mitigation plan. Following city approval, mitigation shall be implemented in accordance with the provisions of the approved critical area report and mitigation plan.

C. *Mitigation sequencing.*

1. Applicants must demonstrate that all reasonable efforts have been examined with the intent to avoid or minimize impacts to critical areas and buffers.
2. When an alteration to a critical area and/or buffer is proposed, such alteration shall follow the mitigation sequencing set forth as follows:
    a. For fish and wildlife habitat conservation areas, wetlands and/or their buffers, avoiding the impact altogether by not taking a certain action or parts of an action;
    b. For geological hazards, minimizing or eliminating the hazard by restoring or stabilizing the hazard area through engineered or other methods;
    c. Minimizing impacts by limiting the degree or magnitude of the action by using appropriate technology, or by taking affirmative steps to avoid or reduce the impact;
    d. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
    e. Reducing or eliminating the impacts over time by preservation and/or maintenance operations;
    f. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and
    g. Monitoring the impact and the compensation projects and taking appropriate corrective measures.

D. *Mitigation plan requirements.* Where mitigation is required, the applicant shall submit, and obtain approval from the city, a mitigation plan as part of, or in addition to, the critical area report. The mitigation plan shall include the following information:

1. A description of existing critical areas and/or buffers conditions, functions, and values, and a description of the anticipated impacts;
2. A description of proposed mitigating actions and mitigation site selection criteria;
3. A description of the goals and objectives of proposed mitigation relating to impacts to the functions and values of the critical area(s) and/or buffer(s);
4. A review of the best available science supporting proposed mitigation, a description of the plan/report author's experience to date in restoring or creating the type of critical area proposed, and an analysis of the likelihood of success of the mitigation project;
5. A description of specific measurable criteria for evaluating whether or not the goals and objectives of the mitigation plan have been successfully attained and whether or not the requirements of these critical area regulations have been met;
6. Detailed construction plans including site diagrams, cross-sectional drawings, topographic elevations at one- or two-foot contours, slope percentage, final grade elevations, and any other drawings appropriate to show construction techniques or anticipated final outcome;
7. Construction plans should also include specifications and descriptions of:
    a. Proposed construction sequence, timing, and duration;
    b. Grading and excavation details;
    c. Erosion and sediment control features;

d. A planting plan consisting of native species appropriate to the site and eco-region, sourced from plant stock grown under local conditions where available, to increase survival and resilience to climate stressors. The planting plan shall specify ~~specifying~~ plant species, quantities, locations, size, spacing, and density, with density standards as follows:

i. *Forested conditions.*

(A) *Trees:* Nine feet on center, or 0.012 trees per square foot (this assumes two- to five-gallon size) with at least 50 percent conifers;

(B) *Shrubs:* Six feet on center, or 0.028 shrubs per square foot (this assumes one- to two-gallon size); and

(C) *Herbs and groundcovers:* Four feet on center, or 0.063 plants per square foot (this assumes ten-inch plug or four-inch pot).

ii. *Shrub conditions.*

(A) *Shrubs:* Five feet on center, or 0.04 shrubs per square foot (this assumes one- to two-gallon size); and

(B) *Herbs and groundcovers:* Four feet on center, or 0.063 plants per square foot (this assumes ten-inch plug or four-inch pot).

iii. *Emergent, herbaceous and/or groundcover conditions.*

(A) *Herbs and groundcovers:* One foot on center, or one plant per square foot (this assumes ten-inch plug or four-inch pot); or

(B) *Herbs and groundcovers:* Eighteen inches on center, or 0.444 plants per square foot if supplemented by overseeding of native herbs, emergent or graminoids as appropriate;

e. Measures to protect and maintain plants until established;

8. A maintenance and monitoring program containing, but not limited to, the following:

a. An outline of the schedule for site monitoring;

b. Performance standards including, but not limited to, 100 percent survival of newly planted vegetation within the first two years of planting, and 80 percent for years three or more;

c. Contingency plans identifying courses of action and any corrective measures to be taken if monitoring or evaluation indicates performance standards have not been met; and

d. The period of time necessary to establish that performance standards have been met, shall be based on critical area type and vegetation community, and shall not be less than five years for all critical area mitigation sites. For wetlands with scrub-shrub or forested vegetation communities, the monitoring period shall be not less than ten (10) years. Extended monitoring periods may be required by the City when site-specific conditions, mitigation complexity, or best available science indicate a longer period is necessary to ensure successful establishment and persistence of functions and values.~~not to be less than three years;~~

9. The mitigation plan shall include financial guarantees to ensure that the mitigation plan is fully implemented. Financial guarantees ensuring fulfillment of the compensation project, monitoring program, and any contingency measures shall be posted in accordance with subsection (G) of this section;

10. Other information determined necessary by the director.

Commented [DY8]: Revised based on Gap Analysis 2.2.2. This version addresses the Gap Analysis by explicitly calling out native plant requirement, ties it to site appropriateness, and incorporates climate resilience.

Commented [DY9]: Revised based on Gap Analysis 2.2.3. This version addresses the Gap Analysis by increasing the monitoring period to a minimum 5 years and incorporating Ecology's guidance for certain wetland communities.

E. *Determination process.* The director shall make a determination as to whether the proposed activity and mitigation, if any, are consistent with the provisions of these critical areas regulations. The director's determination shall be based on the following:

1. Any alteration to a critical area and/or critical area buffer, unless otherwise provided for in these critical area regulations, shall be reviewed and approved, approved with conditions, or denied based on the proposal's ability to comply with all of the following criteria:
    a. The proposal will result in no net loss of functions and values of the critical area(s) and/or buffer(s) in accordance with the mitigation sequencing prescribed in subsection (C) of this section;
    b. The proposal does not pose an unreasonable threat to the public health, safety, or welfare on or off the development proposal site;
    c. The proposal is consistent with the general purposes of these critical area regulations and the public interest;
    d. Any impacts permitted to the critical area and/or buffers are mitigated in accordance with subsections (B), (C) and (D) of this section;
    e. The proposal protects critical area and/or buffer functions and values consistent with the best available science; and
    f. The proposal is consistent with other applicable regulations and standards.
2. The city may condition the proposed activity as necessary to mitigate impacts to critical areas and/or buffers and to conform to the standards required by these critical area regulations.
3. Except as provided for by these critical area regulations, any project that cannot adequately mitigate its impacts to critical areas and/or buffers shall be denied.
4. The city may require critical area or geotechnical reports to have an evaluation by an independent qualified professional at the applicant's expense when determined to be necessary to the review of the proposed activity.

F. *NGPAs in development proposals.* Native growth protection areas (NGPAs) shall be used in development proposals for subdivisions and short subdivisions in accordance with the following:

1. NGPAs shall delineate and protect those contiguous critical areas and buffers listed below:
    a. All landslide hazard areas and buffers, except when a development proposal is approved in a landslide hazard area and/or buffer per a geotechnical report;
    b. All wetlands and buffers;
    c. All fish and wildlife habitat conservation areas; and
    d. All other lands to be protected from impacts as conditioned by project approval;
2. NGPAs shall be recorded on all documents of title of record for all affected lots;
3. NGPAs shall be designated on the face of the plat or recorded drawing in a format approved by the city and include the following restrictions:
    a. Native vegetation shall be preserved within the NGPA for the purpose of preventing harm to property and the environment; and
    b. The city has the right to enforce NGPA restrictions.

G. *Performance securities.* The city may require the applicant of a development proposal to post a cash performance bond or other acceptable security in a form and amount determined sufficient to guarantee satisfactory workmanship, materials and performance of structures and improvements allowed or required by application of this chapter. The city shall release the security upon determining that all structures and improvements have been satisfactorily completed. If all such structures and improvements are not completed to the satisfaction of the city within the time period set forth in the security (or 12 months from posting if no other time period is stated), the city may take all measures which the city, in its sole discretion, deems reasonable and recover all costs of such measures from the security, including all consulting fees and all attorney's fees incurred.

(Code 1988 § 20.50.060; Ord. No. 924 § 3 (Att. B), 2015)

16.50.070. Critical areas report.

A. If fish and wildlife habitat conservation areas, wetlands, steep slopes and/or their buffers may be affected by a proposed activity, the applicant shall submit a critical area report meeting the following requirements:

1. Prepared by a qualified professional;
2. Incorporate best available science in the analysis of critical area data and field reconnaissance and reference the source of science used; and
3. Evaluate the proposal and all probable impacts to critical areas in accordance with the provisions of these critical area regulations.

B. At a minimum the report shall include the following information:

1. The applicant's name and contact information, a project description, project location, and identification of the permit requested;
2. A site plan showing:
   a. The development proposal with dimensions and any identified critical areas and buffers within 200 feet of the proposed project; and
   b. Limits of any areas to be cleared;
3. The date the report was prepared;
4. The names and qualifications of the persons preparing the report and documentation of any fieldwork performed on the site;
5. Identification and characterization of all noncritical areas and critical areas and their buffers within, and adjacent to, the proposed project area. This information shall include, but is not limited to:
   a. Size or acreage, if applicable;
   b. Applicable topographic, vegetative, faunal, soil, substrate and hydrologic characteristics; and
   c. Relationship to other nearby critical areas;
6. An assessment of the probable direct, indirect, and cumulative impacts to critical areas resulting from the proposed development, including short-term and long-term impacts to critical area functions and values within and adjacent to the site;
7. An analysis of site development alternatives;

Commented [DY10]: Revised based on Gap Analysis 2.3.2. This version addresses the Gap Analysis by incorporating direct and indirect impacts to the proposed activities.

8. A description of reasonable efforts made to apply mitigation sequencing pursuant to MMC 16.50.060(C) to avoid or compensate for impacts to critical area and buffer functions and values;

9. Plans for mitigation in accordance with MMC 16.50.060(B), (C) and (D); and

10. Any additional information required for the critical area as specified in this chapter.

C. The applicant may consult with the director prior to or during preparation of the critical area report to obtain city approval of modifications to the required contents of the report where, in the judgment of a qualified professional, more or less information is required to adequately address the potential critical area impacts and required mitigation.

D. The director may require additional information to be included in the critical area report and may also require the critical area report to include an evaluation by the Department of Ecology or an independent qualified expert when determined to be necessary to the review of the proposed activity in accordance with these critical area regulations.

(Code 1988 § 20.50.070; Ord. No. 924 § 3 (Att. B), 2015)

16.50.080. Wetlands.

A. *Designation.*

1. Wetlands are those areas designated in accordance with WAC 173-22-035, including the 1987 Corps of Engineers Wetland Delineation Manual by the U.S. Army Corps of Engineers (USACE) and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ~~as amended.~~ ~~the approved federal wetland delineation manual and applicable regional supplements set forth in WAC 173-22-035.~~

2. All areas within the city that meet the wetland designation criteria in the manual, regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of these critical area regulations.

B. *Wetland ratings.* Wetlands shall be rated according to the Washington Department of Ecology Wetland Rating System for Western Washington: 2014 Update, Version 2.0 (Hruby and Yahnke 2023) (Ecology Publication No. 23-06-009) ~~14-06-029~~, or as revised and approved by Ecology~~).~~. These documents contain the definitions and methods for determining if the criteria below are met.

C. *Wetland rating categories.*

1. Wetlands shall be classified and described consistent with the categories and definitions contained in the Washington Department of Ecology Wetland Rating System for Western Washington: 2014 Update, Version 2.0 (Hruby and Yahnke 2023), Ecology Publication No. 23-06-009~~, as amended~~. ~~The following table provides a summary of the categories of wetlands and the criteria for their categorization:~~

~~**Table 16.50.080(C): Wetland Categories**~~

~~Category~~	~~Criteria for Designation~~
~~Category I~~	~~• Represent a unique or rare wetland type;~~
	~~• Are more sensitive to disturbance than most wetlands;~~
	~~• Are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or~~
	~~• Provide a high level of functions.~~

Commented [DN11]: See Gap Analysis Section 3.1

Commented [DN12]: See Gap Analysis Section 3.2

Commented [DN13]: See Gap Analysis Section 3.3

~~Category II~~	~~• Are not defined as Category I wetlands;~~
	~~• Are difficult, though not impossible, to replace;~~
	~~• Provide high levels of some functions.~~
~~Category III~~	~~• Do not satisfy Category I or II criteria;~~
	~~• Can often be adequately replaced with a well-planned mitigation project;~~
	~~• Provide moderate levels of functions.~~
~~Category IV~~	~~• Do not satisfy Category I, II or III criteria;~~
	~~• Can often be adequately replaced and improved upon with a well-planned mitigation project;~~
	~~• Provide the lowest levels of functions;~~
	~~• Often are heavily disturbed.~~

2. Date of wetland rating. Wetland rating categories shall be applied as the wetland exists on the date of adoption of the rating system by the city, as the wetland naturally changes thereafter, or as the wetland changes in accordance with permitted activities.

3. Wetland rating categories shall not change due to illegal modifications made by the property owner or with the property owner's knowledge.

D. *Mapping.*

1. The approximate location and extent of known wetlands are identified in the City of Medina critical areas inventory. This inventory is to only be used as a guide for the city, project applicants, and/or property owners, and may be continuously updated as new critical areas are identified. The inventory is only a reference and does not provide a final critical area designation.

2. The exact location of a wetland's boundary shall be determined through the performance of a field investigation by a qualified professional applying approved federal wetland delineation manual and applicable regional supplements, as revised, as required by RCW 36.70A.175.

E. *Wetlands—Development standards.*

1. Activities and uses shall be prohibited within wetland and wetland buffer areas, except as provided for in this title.

2. The following table establishes wetland buffer widths:

Table 16.50.080(E): Wetland Buffer Widths

Wetland Category	Buffer width if wetland scores less than 5 habitat points	Buffer width if wetland scores 5 habitat points	Buffer width if wetland scores 6—7 habitat points	Buffer width if wetland scores 8—9 habitat points
Category I	100 feet	140 feet	220 feet	300 feet
Category II	100 feet			
Category III	80 feet			Not applicable
Category IV	50 feet	Not applicable		

Commented [DY14]: Wetland buffer width is incomplete. Department of Ecology provides guidance on 3 options. These options will be discussed during the Planning Commission meeting. Once we've received direction on the preferred option staff will revise the buffer widths accordingly.

3. The width of a wetland buffer shall be determined by the wetland category designated in subsection (A) of this section and the corresponding habitat scoring of the wetland set forth in Table 16.50.080(E).

4. Measurement of wetland buffers shall be from the outer edges of the wetland boundaries as determined through the performance of a field investigation by a qualified professional applying the wetlands identification and delineation pursuant to subsection (A) of this section and as surveyed in the field.

5. Buffers may exclude areas that are functionally and effectively disconnected from the wetland by an existing public or private road or legally established development, as determined by the Director. Functionally and effectively disconnected means that the road or other significant development blocks the protective measures provided by a buffer. Significant developments shall include built public infrastructure such as roads and railroads, and private developments such as homes or commercial structures. The Director shall evaluate whether the interruption will affect the entirety of the buffer. Individual structures may not fully interrupt buffer function. In such cases, the allowable buffer exclusion should be limited in scope to just the portion of the buffer that is affected. Where questions exist regarding whether a development functionally disconnects the buffer, or the extent of that impact, the Director may require a critical area report to analyze and document the buffer functionality.

Commented [DY15]: Revised based on Gap Analysis 3.11. This code addresses functionally disconnected buffers based on language in Ecology Publication 22-06-014

~~F. *Wetland buffer reduction.* The wetland buffer widths in Table 16.50.080(E) may be reduced by up to a maximum of 25 percent provided:~~

Commented [DN16]: Removed per Gap Analysis Section 3.6

~~1. The amount of reduction is based on voluntary employment of incentive-based action measures set forth in subsection (G) of this section;~~

~~2. A critical areas report prepared by a professional with expertise in wetlands and approved by the city using the best available science determines a smaller area can be adequate to protect the wetland functions and values based on site-specific characteristics;~~

~~3. The mitigation provided will result in a net improvement of the wetland and buffer functions;~~

~~4. Any remaining wetland buffer areas on the property not subject to the reduction, but are degraded, are revegetated with native plants; and~~

~~5. A five-year monitoring and maintenance program is provided.~~

~~G. *Wetland buffer reduction incentive options.* Table 16.50.080(G) provides incentive options that may be employed to reduce a wetland buffer width as allowed in subsection (F) of this section. Where multiple options for an action are prescribed in the table, only one option under that action may be applied.~~

~~**Table 16.50.080(G): Wetland Buffer Reduction Incentive Options**~~

~~Description of Action~~	~~Option~~	~~Reduction Allowance~~
~~Remove impervious surface within wetland buffer area~~	~~Remove at least 50 percent of the impervious surface area within the reduced buffer area, provided the total impervious surface area removed is less than 500 square feet~~	~~5 percent points~~
	~~Remove at least 50 percent of the impervious surface area within the reduced buffer~~	~~10 percent points~~

	area, provided the total impervious surface area removed is more than 500 square feet	
	Remove 100 percent of impervious surface area within the reduced buffer area, provided at least 50 percent of the reduced buffer area presently contains impervious surface	20 percent points
Install biofiltration/infiltration mechanisms	Install bioswales, created and/or enhanced wetlands, or ponds supplemental to existing surface water drainage and water quality requirements	20 percent points
Remove invasive, nonnative vegetation	Remove invasive, nonnative vegetation and continue maintenance during the five-year monitoring program of removing relatively dense stands of invasive, nonnative vegetation from significant portions of the reduced buffer area	10 percent points
Install oil-water separator	If not required by other provisions of the Medina Municipal Code, install oil-water separators for surface water quality control	10 percent points
Replace impervious materials	Replace impervious materials for driveway/road construction with pervious materials	10 percent points
Provide off-site restoration where no on-site restoration is available	Restoration is provided at a 2:1 ratio or greater	10 percent points
	Restoration is provided at a 4:1 ratio or greater	20 percent points
Remove toxic materials	Remove significant refuse or sources of toxic material	10 percent points

FH. *Averaging of wetland buffer width*. The city may allow the wetland buffer width around the boundaries of the wetland to be averaged provided all of the following criteria are met:

1. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a dual-rated wetland with a Category I area adjacent to a lower-rated area ~~The proposal results in a net improvement of wetland, habitat and buffer function~~;
2. ~~The proposal includes revegetation of the averaged buffer using native plants, if needed~~ The buffer is increased adjacent to the higher-functioning area of habitat or more-sensitive portion of the wetland and decreased adjacent to the lower- functioning or less-sensitive portion as demonstrated by a critical area report from a qualified wetland professional;
3. ~~The total area contained in the buffer of each wetland on the development proposal site is not decreased~~ The total area of the buffer after averaging is equal to the area required without averaging;

Commented [DN17]: See Gap Analysis Section 3.8

4. ~~The wetland buffer width is not reduced by more than 25 percent in any one location~~ The buffer at its narrowest point is never less than either 75 percent of the required width or 75 feet for Category I and II, 50 feet for Category III, and 25 feet for Category IV, whichever is greater; and

5. A critical areas report meeting the requirements set forth in MMC 16.50.070 indicates the criteria in this subsection are satisfied.

G~~I~~. *Wetland buffer averaging and wetland buffer reduction.* Wetland buffer averaging set forth in subsection (H) of this section and wetland buffer reduction set forth in subsections (F) and (G) of this section shall not be used together on an individual wetland.

H. Increased Wetland Buffer Width. Buffer widths shall be increased by 33 percent as determined by the director when a wider buffer is necessary to protect wetland functions and values. This determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the wetland. The documentation shall include but not be limited to the following criteria:

a. The wetland is used by a state or federally listed plant or animal species. These species would be those listed under WAC 220-610-010, 50 CFR 17-11, 50 CFR 17-12, or other state or federal regulations;

b. The wetland has critical habitat; or a priority area for a priority species as defined by WDFW; or Wetlands of High Conservation Value as defined by the Washington Department of Natural Resources' Natural Heritage Program;

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

d. The adjacent land has minimal vegetative cover; or

i. More than 25 percent of the buffer area is covered by nonnative and/or invasive plant species; or

ii. Tree and/or shrub vegetation covers less than 25 percent of the buffer area and the wetland buffer has a slope less than 25 percent

~~a.~~e. The land has slopes greater than 30 percent.

I~~J~~. *Buffers for mitigation shall be consistent.* All mitigation sites shall have buffers consistent with the buffer requirements of this chapter. The buffer for a wetland that is created, restored, or enhanced as compensation for approved wetland alterations shall have the minimum buffer required for the highest wetland category involved.

K. *Buffer conditions shall be maintained.* 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. Except as otherwise specified or allowed in accordance with these critical area regulations, ~~wetland buffers shall be retained in their natural condition~~ wetland buffers shall be undisturbed as well as retained in their natural condition.

L. *Temporary markers.* The outer perimeter of the wetland or buffer and the limits of those areas to be disturbed pursuant to an approved permit or authorization shall be marked in the field in such a way as to ensure that no unauthorized intrusion will occur, and inspected by the city prior to the commencement of permitted activities. This temporary marking shall be maintained throughout construction, and shall not be removed until permanent signs, if required, are in place pursuant to subsection (M) of this section.

Commented [DY18]: Revised based on Gap Analysis 3.5. This version aligns with BAS by providing criteria for increasing buffer standards under certain conditions.

Commented [DY19]: Revised based on Gap Analysis 3.10. This version provides more clarity and better aligns with BAS that a buffer is assumed to be well vegetated and should be left in it's natural condition.

M. *Permanent signs.*

1. As a condition of any permit or authorization issued pursuant to this chapter, the director ~~city manager~~ or designee may require the applicant to install permanent signs along the boundary of a wetland or buffer.

2. Permanent signs shall be made of a metal face and attached to a metal post, or another material of equal durability. The sign shall be worded as follows or with alternative language approved by the city:

   Protected Wetland Area
   Do Not Disturb.
   Contact the City of Medina
   Regarding Uses and Restriction

3. Signs must be posted at an interval of one per lot or every 50 feet, whichever is less, and must be maintained by the property owner in perpetuity.

N. *Fencing.*

1. The director ~~city manager~~ or designee may condition any permit or authorization issued pursuant to this chapter to require the applicant to install a permanent fence at the edge of the wetland buffer, when fencing will prevent future impacts to the wetland.

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

O. *Additional mitigation measures.* In addition to the requirements set forth in MMC 16.50.060(B), (C) and (D), when mitigation for wetland and/or wetland buffer impacts is required, the following supplementary requirements shall apply:

Commented [DN20]: See Gap Analysis Section 3.12

1. Mitigation for alterations to wetland and/or wetland buffer shall achieve equivalent or greater ecological functions and shall be consistent with ~~the Department of Ecology Guidance on Wetland Mitigation in Washington State (2004, Department of Ecology Publication No. 04-06-013)~~ Wetland Mitigation in Washington State–Part 1: Agency Policies and Guidance (Version 2) (Ecology, USACE, and EPA 2021 Publication number 21-06-003), as revised.

2. Wetland or wetland buffer mitigation actions shall not result in a net loss of wetland or buffer area, and shall follow the mitigation sequencing process identified in MMC 16.50.060(C). Compensation shall be provided at a level that replaces lost functions and values through Table MMC 16.50.080-(O) or the credit-debit method (Ecology Publication No. 10-06-011). Mitigation shall not result in a net loss of wetland or buffer area except when the lost wetland or buffer area provides minimal functions and the mitigation action(s) results in a net gain in wetland or buffer functions, as determined by a site-specific function assessment using best available science.

3. Mitigation actions shall address and provide equivalent or greater wetland and buffer functions and values compared to wetland and buffer conditions existing prior to the proposed alteration.

4. Mitigation actions shall be in-kind and conducted within the same basin and on the same site as the alteration except when the following apply:

   a. There are no reasonable on-site opportunities for mitigation or on-site opportunities do not have a high likelihood of success due to development pressures, adjacent land uses, or on-site buffers or connectivity are inadequate;

   b. Off-site mitigation has a greater likelihood of providing equal or improved wetland functions than the impacted wetland; and

c. Off-site locations shall be in the same basin and the same water resource inventory area (WRIA).

5. Mitigation timing. Where feasible, mitigation projects shall be completed prior to activities that will disturb wetlands. In all other cases, mitigation shall be completed immediately following disturbance and prior to use or occupancy of the activity or development. Construction of mitigation projects shall be timed to reduce impacts to existing wildlife and flora.

6. Mitigation ratios.

a. The ratios in the following table shall apply to wetland creation or restoration that is in-kind, on site, the same category, and has a high probability of success. The first number specifies the acreage of replacement wetlands and the second specifies the acreage of wetlands altered.

Table 16.50.080(O): Wetland Mitigation Ratios

Wetland Category	Creation or Reestablishment	Enhancement as Mitigation
Category I	6:1	16:1
Category II	3:1	12:1
Category III	2:1	8:1
Category IV	1.5:1	6:1

b. Increased replacement ratio. The director may increase the ratios under the following circumstances:

i. Uncertainty exists as to the probable success of the proposed restoration or creation; or

ii. A significant period of time will elapse between impact and replication of wetland functions; or

iii. Proposed mitigation will result in a lower category wetland or reduced functions relative to the wetland being impacted; or

iv. The impact was an unauthorized impact.

c. Decreased replacement ratio. The director may decrease these ratios under the following circumstances: ~~if the proposed mitigation actions are conducted in advance of the impact and have been shown to be successful.~~

i. Documentation by a qualified professional demonstrates that the proposed mitigation actions have a very high likelihood of success based on prior experience;

ii. Documentation by a qualified professional demonstrates that the proposed actions for compensation will provide functions and values that are significantly greater than the wetland being affected;

iii. The proposed actions for compensation are conducted in advance of the impact and are shown to be successful; or

iv. In wetlands where several HGM classes are found within one delineated boundary, the areas of the wetlands within each HGM class can be scored and rated separately and the ratios adjusted accordingly, if all of the following apply:

a. The wetland does not meet any of the criteria for wetlands with "Special Characteristics" as defined in the rating system;

Commented [DY21]: Revised based on Gap Analysis 3.12.5. This version addresses administrative reduction in mitigation ratios based on BAS and Ecology guidance.

b. The rating and score for the entire wetland is provided along with the scores and ratings for each area with a different HGM class;

c. Impacts to the wetland are all within an area that has a different HGM class from the one used to establish the initial category; and

~~a.~~d. The proponents provide adequate hydrologic and geomorphic data to establish that the boundary between HGM classes lies at least 50 feet outside of the footprint of the impacts

d. Minimum replacement ratio. In all cases, a minimum acreage replacement ratio of one-to-one shall be required.

7. Wetland mitigation banks.

a. Credits from a certified wetland mitigation bank or in-lieu fee program may be approved for use as compensation for unavoidable impacts to wetlands when:

i. For mitigation banks, the bank is certified under Chapter 173-700 WAC;

ii. The director ~~city manager~~ or designee determines that the wetland mitigation bank or in-lieu fee program provides appropriate compensation for the authorized impacts; and

iii. The proposed use of credits is consistent with the terms and conditions of the mitigation bank or in-lieu fee program.

b. Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the bank's certification.

c. Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the bank's certification. In some cases, bank service areas may include portions of more than one WRIA for specific wetland functions.

8. Wetland enhancement as mitigation.

a. Impacts to wetlands may be mitigated by enhancement of existing significantly degraded wetlands.

b. Applicants proposing to enhance wetlands must produce a critical area report that identifies how enhancement will increase the functions of the degraded wetland and how this increase will adequately mitigate for the loss of wetland area and function at the impact site.

c. The enhancement acreage shall be pursuant to the ratios in Table 16.50.080(O).

(Code 1988 § 20.50.100; Ord. No. 924 § 3 (Att. B), 2015)

16.50.090. Geologically hazardous areas.

A. Geologically hazardous areas include those areas susceptible to erosion, sliding, earthquake, or other geologic events. They pose a threat to the health and safety of citizens when incompatible development is sited in areas of significant hazard. Such incompatible development may not only place itself at risk, but also may increase the hazard to surrounding development and use. In the city, areas susceptible to one or more of the following types of hazards shall be designated as a geologically hazardous area:

1. Erosion hazard;

2. Landslide hazard; and

3. Seismic hazard.

B. Specific hazard areas—Designation.

1. *Erosion hazard areas.* Erosion hazard areas are at least those areas identified by the U.S. Department of Agriculture's Natural Resources Conservation Service as having a "moderate to severe," "severe," or "very severe" rill and inter-rill erosion hazard.

2. *Landslide hazard areas.* Landslide hazard areas are areas potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. They include areas susceptible because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other factors. Example of these may include, but are not limited to, the following:

   a. Areas of historic failures, such as:

      i. Those areas delineated by the U.S. Department of Agriculture's Natural Resources Conservation Service as having a "severe" limitation for building site development;

      ii. Areas designated as quaternary slumps, earth-flows, mudflows, lahars, or landslides on maps published by the U.S. Geological Survey or Department of Natural Resources;

   b. Areas with all three of the following characteristics:

      i. Slopes steeper than 15 percent; and

      ii. Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and

      iii. Springs or ground water seepage;

   c. Slopes that are parallel or sub-parallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;

   d. Areas potentially unstable because of rapid stream incision, stream bank erosion, and undercutting by wave action;

   e. Areas located in a canyon or on an active alluvial fan, presently or potentially subject to inundation by debris flows or catastrophic flooding; and

   f. Steep slopes, which are any area with a slope of 40 percent or steeper and with a vertical relief of ten or more feet except areas composed of consolidated rock. A slope is delineated by establishing its toe and top and measured by averaging the inclination over at least ten feet of vertical relief.

3. *Seismic hazard areas.* Seismic hazard areas are areas subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement, soil liquefaction, lateral spreading, or surface faulting. One indicator of potential for future earthquake damage is a record of earthquake damage in the past. Ground shaking is the primary cause of earthquake damage in Washington. The strength of ground shaking is primarily affected by:

   a. The magnitude of an earthquake;

   b. The distance from the source of an earthquake;

   c. The type and thickness of geologic materials at the surface; and

   d. The subsurface geologic structure.

   Settlement and soil liquefaction conditions occur in areas underlain by cohesionless, loose, or soft-saturated soils of low density, typically in association with a shallow ground water table.

C. Mapping.

1. The approximate location and extent of geologically hazardous areas are shown on the adopted critical area maps. The adopted critical area maps include:

   a. U.S. Geological Survey landslide hazard, seismic hazard and volcano hazard maps;

   b. Department of Natural Resources seismic hazard maps for Western Washington;

   c. Department of Natural Resources slope stability maps;

   d. Federal Emergency Management Administration flood insurance maps;

   e. Washington Department of Natural Resources (DNR) Liquefaction Susceptibility Map of King County; and

   fe. Locally adopted maps.

2. These maps are to be used as a guide for the city, project applicants and/or property owners, and may be continuously updated as new critical areas are identified. They are a reference and do not provide a final critical area designation.

D. Additional report requirements.

1. For development proposed to be located in erosion or landslide hazard areas, the applicant shall submit a geotechnical report prepared by a qualified professional. A steep slope hazard must also meet the requirements for a critical area report set forth in MMC 16.50.070.

2. The director may require a geotechnical report for development proposed in a seismic hazard area.

E. Where a geotechnical report is required, a geotechnical assessment of the geological hazards including the following site- and proposal-related information shall be included in either the geotechnical report or the critical areas report:

1. Site and construction plans for the proposal showing:

   a. The type and extent of geologic hazard areas, any other critical areas, and any critical area buffers on, adjacent to, within 200 feet of or that are likely to impact the proposal or be impacted by the proposal;

   b. Proposed development, including the location of existing and proposed structures, fill, storage of materials, and drainage facilities, with dimensions indicating distances to the geologically hazardous area; and

   c. The topography, in two-foot contours, of the project area and all hazard areas addressed in the report;

2. An assessment of the geologic characteristics and engineering properties of the soils, sediments, and/or rock of the project area and potentially affected adjacent properties, and a review of the site history regarding landslides, erosion, and prior grading. Soils analysis shall be accomplished in accordance with accepted taxonomic classification systems in use in the region. The assessment shall include, but not be limited to:

   a. A description of the surface and subsurface geology, hydrology, soils, and vegetation found in the project area and in all hazard areas addressed in the report;

   b. A detailed overview of the field investigations, published data and references; data and conclusions from past assessments of the site; and site specific measurements, tests, investigations, or studies that support the identification of geologically hazardous areas; and

Commented [DN22]: See Gap Analysis Section 4.1

c. A description of the vulnerability of the site to the relevant geologic hazard;

3. A geotechnical analysis including a detailed description of the project, its relationship to the geologic hazard(s), and its potential impact upon the hazard area, the subject property and affected adjacent properties;

4. Recommendations for the minimum no-disturbance buffer and minimum building setback from any geologic hazard based upon the geotechnical analysis. The director may assign buffer and building setbacks based on this information. For steep slopes, the minimum buffer widths are specified in subsection (I)(2)(a) of this section;

5. When hazard mitigation is required:

   a. The mitigation plan shall specifically address how the activity maintains or reduces the pre-existing level of risk to the site and adjacent properties on a long-term basis (equal to or exceeding the projected lifespan of the activity or occupation);

   b. Proposed mitigation techniques shall be considered to provide long-term hazard reduction only if they do not require regular maintenance or other actions to maintain their function; and

   c. Mitigation may also be required to avoid any increase in risk above the pre-existing conditions following abandonment of the activity;

6. Where a valid geotechnical report has been prepared and approved by the city within the last five years for a specific site, and where the proposed land use activity and surrounding site conditions are unchanged, said report may be incorporated into the required critical area or geotechnical report provided the applicant submits a geotechnical assessment detailing any changed environmental conditions associated with the site; and

7. Additional information determined by the director to be necessary to the review of the proposed activity and the subject hazard.

F. In addition to the geotechnical report requirements specified in subsection (E) of this section, a geotechnical or critical area report (as specified in subsection (D) of this section) for an erosion hazard or landslide hazard shall include the following information:

1. A site plan for the proposal showing the following:

   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; and

   c. The location and description of surface water runoff.

2. The geotechnical analysis shall specifically include:

   a. A description of the extent and type of vegetative cover;

   b. An estimate of load capacity including surface and ground water conditions, public and private sewage disposal systems, fills and excavations, and all structural development;

   c. 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;

   d. An estimate of the bluff retreat rate that recognizes and reflects potential catastrophic events such as seismic activity or a 100-year storm event;

e. Consideration of the runout hazard of landslide debris and/or the impacts of landslide runout on downslope properties;

f. A study of slope stability including an analysis of proposed angles of cut and fills and site grading;

g. Recommendations for building limitations, structural foundations, and an estimate of foundation settlement; and

h. An analysis of proposed surface and subsurface drainage, and the vulnerability of the site to erosion.

3. For any development proposal on a site containing an erosion hazard area, an erosion and sediment control plan shall be required.

4. A drainage plan for the collection, transport, treatment, discharge and/or recycle of water.

5. Whenever development, including, but not limited to, stairs, pathways, trams and their support structures, retaining walls, and structures, is performed on any erosion, landslide hazard, or steep slope area as defined in this chapter, a mitigation plan shall be prepared.

a. The plan 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.

b. All disturbed areas shall be revegetated by the property owner.

c. Revegetation shall include planting of species indigenous to the Northwest, together with a schedule of their maintenance.

6. 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 report 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.

G. Seismic hazard areas shall require geotechnical reporting consistent with subsection (E) of this section and the following:

1. 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.

2. The geotechnical analysis shall include a complete discussion of the potential impacts of seismic activity on the site (for example, forces generated and fault displacement).

H. Geologically hazardous areas—General development standards.

1. Alterations of geologically hazardous areas or associated buffers may only occur for activities that a qualified professional determines:

a. Will not increase the threat of the geologic hazard to adjacent properties beyond predevelopment conditions;

b. Will not adversely impact other critical areas or their buffers;

c. Are designed so that the hazard is eliminated or mitigated to a level equal to or less than predevelopment conditions; and

d. Are certified as safe by a qualified engineer or geologist, licensed in the State of Washington.

2. Essential Public Facilities Prohibited. Essential public facilities shall not be sited within geologically hazardous areas unless there is no other practical alternative.

I. Geologically hazardous areas—Specific development standards.

1. Alterations of an erosion or landslide hazard area and/or buffer may only occur for activities for which a geotechnical report is submitted and certifies that:

   a. The development will not increase surface water discharge or sedimentation to adjacent properties beyond predevelopment conditions;

   b. The development will not decrease slope stability on adjacent properties; and

   c. Such alterations will not adversely impact other critical areas or their buffers.

2. A buffer shall be established from all edges of steep slopes as defined in subsection (B)(2)(f) of this section. The size of the buffer shall be determined by the director to eliminate or minimize the risk of property damage, death or injury resulting from erosion and landslides caused in whole or part by the development, based upon review of and concurrence with a critical area report prepared by a qualified professional.

   a. Minimum buffer.

      i. The minimum buffer shall be equal to the height of the slope or 50 feet, whichever is greater.

      ii. The buffer may be reduced to a minimum of ten feet when a qualified professional demonstrates to the city's satisfaction that the reduction will adequately protect the proposed development, adjacent developments, and uses and the subject critical area.

      iii. The buffer may be increased where the director determines a larger buffer is necessary to prevent risk of damage to proposed and existing development.

3. Development within erosion or landslide hazard areas and/or their buffers shall be designed to meet the following basic requirements unless it can be demonstrated that an alternative design that deviates from one or more of these standards provides equivalent or greater long-term slope stability while meeting all other provisions of these critical area regulations. The requirement for long-term slope stability shall exclude designs that require periodic maintenance or other actions to maintain their level of function. The basic development design standards are:

   a. The proposed development shall not decrease the factor of safety for landslide occurrences below the limits of 1.5 for static conditions and 1.2 for dynamic conditions. Analysis of dynamic conditions shall be based on a minimum horizontal acceleration as established by the current version of the International Building Code;

   b. Structures and improvements shall minimize alterations to the natural contour of the slope and foundations shall be tiered where possible to conform to existing topography;

   c. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;

   d. The proposed development shall not result in greater risk or a need for increased buffers on neighboring properties;

   e. The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes; and

   f. Development shall be designed to minimize impervious lot coverage.

4. Unless otherwise provided or as part of an approved alteration, removal of vegetation from an erosion or landslide hazard area or related buffer shall be prohibited.
5. Clearing shall be allowed only from May 1st to October 1st of each year; provided, that the city may extend or shorten the dry season on a case-by-case basis depending on actual weather conditions.
6. Utility lines and pipes shall be permitted in erosion and landslide hazard areas only when the applicant demonstrates that no other practical alternative is available. The line or pipe shall be located above ground and properly anchored and/or designed so that it will continue to function in the event of an underlying slide. Stormwater conveyance shall be allowed only through a high-density polyethylene pipe with fuse-welded joints, or similar product that is technically equal or superior.
7. Point discharges from surface water facilities and roof drains onto or upstream from erosion or landslide hazard area shall be prohibited except as follows:
    a. Conveyed via continuous storm pipe downslope to a point where there are no erosion hazards areas downstream from the discharge;
    b. Discharged at flow durations matching predeveloped conditions, with adequate energy dissipation, into existing channels that previously conveyed stormwater runoff in the predeveloped state; or
    c. Dispersed discharge upslope of the steep slope onto a low-gradient undisturbed buffer demonstrated to be adequate to infiltrate all surface and stormwater runoff.
8. The division of land in erosion and landslide hazard areas and associated buffers is subject to the following:
    a. Land that is located wholly within erosion or landslide hazard area or its buffer may not be subdivided. Land that is located partially within erosion or landslide hazard area or its buffer may be divided; provided, that each resulting lot has sufficient buildable area outside of, and will not affect, the erosion or landslide hazard or its buffer.
    b. Access roads and utilities may be permitted within the erosion or landslide hazard area and associated buffers if the city determines that no other feasible alternative exists.
9. On-site sewage disposal systems, including drain fields and infiltration drainage systems, shall be prohibited within erosion and landslide hazard areas and related buffers.
10. Activities proposed to be located in seismic hazard areas shall meet the standards of subsection (H) of this section.

(Code 1988 § 20.50.200; Ord. No. 924 § 3 (Att. B), 2015)

16.50.100. Fish and wildlife habitat conservation areas.

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. In the City of Medina, fish and wildlife habitat conservation areas include:
    1. Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association.

Commented [DY23]: Revised based on Gap Analysis 5.1. This version updates WAC references that were recodified under a different WAC.

a. Federally designated endangered and threatened species are those fish and wildlife species identified by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service that are in danger of extinction or are threatened to become endangered. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service should be consulted as necessary for current listing status.

b. State designated endangered, threatened, and sensitive species are those fish and wildlife species native to the State of Washington, identified by the State Department of Fish and Wildlife, that are in danger of extinction, threatened to become endangered, vulnerable, or declining and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats. State designated endangered, threatened, and sensitive species are periodically recorded in WAC 220-610-010 ~~232-12-014~~ (state endangered species), and WAC ~~232-12-011~~ 220-200-100 (state threatened and sensitive species). The State Department of Fish and Wildlife maintains the most current listing and should be consulted as necessary for current listing status.

2. State priority habitats and species. Priority habitats and species are considered to be priorities for conservation and management. Priority species require protective measures for their perpetuation due to their population status; sensitivity to habitat alteration; and/or recreational, commercial, or tribal importance. Priority habitats are those habitat types or elements with unique or significant value to a diverse assemblage of species. A priority habitat may consist of a unique vegetation type or dominant plant species, a described successional stage, or a specific structural element. Priority habitats and species are identified by the State Department of Fish and Wildlife.

3. Habitats and species of local importance. Habitats and species of local importance are those identified by the city as approved by the Medina city council, including those that possess unusual or unique habitat warranting protection.

4. Naturally occurring ponds under 20 acres. Naturally occurring ponds are those ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat, including those artificial ponds intentionally created from dry areas in order to mitigate impacts to ponds. Naturally occurring ponds do not include ponds deliberately designed and created from dry sites, such as canals, detention facilities, wastewater treatment facilities, farm ponds, temporary construction ponds, and landscape amenities, unless such artificial ponds were intentionally created for mitigation.

5. Waters of the state. In the city, waters of the state include lakes, ponds, streams, inland waters, underground waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington.

6. State natural area preserves and natural resource conservation areas. Natural area preserves and natural resource conservation areas are defined, established, and managed by the State Department of Natural Resources.

7. Land found by the Medina city council to be essential for preserving connections between habitat blocks and open spaces.

B. Water typing. Streams shall be designated in accordance with Table 16.50.100(B):

Table 16.50.100(B): Stream Water Type

Water Typing	Designation Criteria
Type 1 Stream	Segments of streams that are at least seasonally utilized by fish for spawning, rearing or migration. Stream segments which are fish passable from Lake Washington are presumed to have at least

Commented [DY24]: Stream water type is incomplete and will need to be updated. Discussion will occur during Planning Commission meeting. Once we've received direction on the preferred option staff will revise the buffer widths accordingly.

	seasonal fish use. Fish passage should be determined using the best professional judgment of a qualified professional.
Type 2 Stream	Perennial non-fish-bearing streams. Perennial streams do not go dry any time during a year of normal rainfall. However, for the purpose of stream typing, Type 2 streams include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. If the uppermost point of perennial flow cannot be identified with simple, nontechnical observations, then the point of perennial flow should be determined using the best professional judgment of a qualified professional.
Type 3 Stream	Segments of natural waters that are not classified as Type 1 or 2 streams. These are seasonal, non-fish-bearing streams in which surface flow is not present for a significant portion of a year of normal rainfall and are not located downstream from any Type 2 or higher stream.

C. Mapping.

Commented [DY25]: Revised based on Gap Analysis 5.3.1 and 5.3.2. This version updates additional mapping resources for salmonid and high quality eco-systems and rare plants.

1. The approximate location and extent of habitat conservation areas are shown on the critical area maps adopted by the city, as most recently updated. The following critical area maps are hereby adopted:
   a. Department of Fish and Wildlife Priority Habitat and Species Maps;
   b. Anadromous and resident salmonid distribution maps contained in the Habitat Limiting Factors Reports published by the Washington Conservation Commission;
   c. Statewide Washington Integrated Fish Distribution (SWIFD) database;
   ~~d~~c. The Washington Department of Natural Resources Natural Heritage Program;
   e. Department of Natural Resources State Natural Area Preserves and Natural Resource Conservation Area Maps; and
   f~~d~~. City of Medina official habitat maps.
2. These maps are to be used as a guide for the city, project applicants, and/or property owners. They are a reference and do not provide a final critical area designation.

D. Initial fish and wildlife habitat assessment.

1. An applicant proposing development activities and uses located adjacent to or within fish and wildlife habitat conservation areas, which are defined in subsection (A) of this section, may have a written initial fish and wildlife habitat assessment prepared to investigate the presence and extent of regulated site-specific habitat within the project area prior to satisfying the requirements set forth in MMC 16.50.070 (Critical areas report) and this section.
2. The initial fish and wildlife habitat assessment is a preliminary investigation to determine the presence or absence of site-specific critical fish and wildlife habitat within the project area.
3. The initial fish and wildlife habitat assessment shall be prepared by a qualified professional and include the following content:
   a. A description of the project area;

b. Information documenting the investigation of the project area;

c. Findings based on the investigation stating whether critical fish and wildlife habitat is present or absent within the project area (the presence of critical fish species alone does not constitute a site-specific critical fish and wildlife habitat); and

d. Any suggested relevant recommendations or best management practices assuring compliance with this chapter.

The qualified professional may consult with the director prior to or during the preparation of the assessment to determine if more or less information is necessary.

4. Results of the initial fish and wildlife assessment.

a. If the assessment shows the presence of site-specific critical fish and wildlife habitat within the project area, then the requirements set forth in MMC 16.50.070 and this section shall apply.

b. If the assessment shows the absence of site-specific critical fish and wildlife habitat within the project area, then further analysis through the requirements set forth in MMC 16.50.070 and this section shall not be required.

E. Except where subsection (D)(4)(b) of this section applies, in addition to the critical area report requirements prescribed in MMC 16.50.070, a habitat assessment shall be included. A habitat assessment is an investigation of the project area to evaluate the presence or absence of potential critical fish or wildlife habitat. The habitat assessment shall include the following site- and proposal-related information:

Commented [DY26]: Revised based on Gap Analysis 5.4. This version addresses multiple terms used to describe a habitat assessment.

1. Identification of any species of local importance, priority species, or endangered, threatened, sensitive or candidate species that has a primary association with habitat on or adjacent to the project area, and assessment of potential project impacts to the use of the site by the species;

2. A discussion of any federal, state, or local special management recommendations, including Department of Fish and Wildlife habitat assessment ~~management~~ recommendations that have been developed for species or habitats located on or adjacent to the project area;

3. A discussion of any ongoing management practices that will protect habitat after the project site has been developed, including any proposed monitoring and maintenance programs;

4. When appropriate due to the type of habitat or species present or the project area conditions, the director may also require the habitat assessment ~~management plan~~ to include:

a. An evaluation by the State Department of Fish and Wildlife, local Native American Indian tribe, or other qualified expert regarding the applicant's analysis and the effectiveness of any proposed mitigating measures or programs, to include any recommendations as appropriate; and/or

b. Detailed surface and subsurface hydrologic features both on and adjacent to the site.

F. Fish and wildlife habitat conservation areas—General development standards.

1. A habitat conservation area may be altered only if consistent with mitigation sequencing as prescribed in MMC 16.50.060(C) and the proposed alteration of the habitat or the mitigation proposed does not result in a net loss of ecological functions. All new structures and land alterations shall be prohibited within habitat conservation areas, except as allowed in accordance with this chapter.

2. Whenever activities are proposed in or adjacent to a habitat conservation area, except as outlined in subsection (D) of this section, which state or federally endangered or threatened species have a primary association, such area shall be protected through the application of measures in accordance with a critical area report prepared by a qualified professional and approved by the city, and guidance provided by the appropriate state and/or federal agencies.

3. All activities, uses, and alterations proposed to be located in or within the established buffers of water bodies used by anadromous fish shall give special consideration to the preservation and enhancement of anadromous fish and fish habitat.
4. Plant, wildlife, or fish species not indigenous to Western Washington State shall be excluded from habitat conservation areas unless authorized by a state or federal permit or approval.
5. Mitigation sites shall be located to achieve contiguous wildlife habitat corridors in accordance with a mitigation plan that is part of an approved critical area report to minimize the isolating effects of development on habitat areas, so long as mitigation of aquatic habitat is located within the same aquatic ecosystem as the area disturbed.
6. The director shall condition approvals of activities allowed within or adjacent to a habitat conservation area or its buffers consistent with the mitigation sequencing set forth in MMC 16.50.060(C). Conditions may include, but are not limited to, the following:
    a. Establishment of buffer zones;
    b. Preservation of critically important vegetation;
    c. Limitation of public access to the habitat area, including fencing to deter unauthorized access;
    d. Seasonal restriction of construction activities;
    e. Establishment of a duration and timetable for periodic review of mitigation activities; and
    f. Requirement of a performance bond, when necessary, to ensure completion and success of proposed mitigation.
7. Mitigation of alterations to habitat conservation areas shall achieve equivalent or superior ecological functions, and shall include mitigation for adverse impacts upstream or downstream of the development proposal site as appropriate. Mitigation shall address each function affected by the alteration to achieve functional equivalency or improvement on a per-function basis. Mitigation should occur in the same subdrainage basin as the habitat impacted.
8. Any approval of alterations or impacts to a habitat conservation area shall be supported by best available science.
9. On-site sewage disposal systems, including drain fields and infiltration drainage systems, shall be prohibited within fish and wildlife habitat conservation areas and related buffers.

Commented [DY27]: Revised based on Gap Analysis 5.5. This prohibition aligns with WDFW BAS.

G. Fish and wildlife habitat conservation area—Buffers.

1. The director shall require the establishment of buffer areas for activities in, or adjacent to, habitat conservation areas when needed to protect habitat conservation areas.
    a. Buffers shall consist of an undisturbed area of native vegetation, or areas identified for restoration, established to protect the integrity, functions and values of the affected habitat.
    b. Required buffer widths shall reflect the sensitivity of the habitat and the type and intensity of human activity proposed to be conducted nearby.
    c. Setbacks for protection of Lake Washington are provided in MMC 16.63.030 and buffers for protection of Lake Washington tributaries within shoreline jurisdiction are established in MMC 16.67.080.
2. The following standard buffers for streams located outside of shoreline jurisdiction shall be established, adjacent to streams, measured outward on the horizontal plane from the ordinary high water mark or from the top of bank if the ordinary high water mark cannot be identified:

Table 16.50.100(G)(2): Stream Buffers

Water Type	Standard Buffer Width	~~Minimum Buffer Width with Enhancement~~
Type 1 Stream	100 feet	~~50 feet~~
Type 2 Stream	75 feet	~~37.5 feet~~
Type 3 Stream	50 feet	~~25 feet~~

Commented [DY28]: Stream buffer width is incomplete and will need to be updated. Discussion will occur during Planning Commission meeting. Once we've received direction on the preferred option staff will revise the buffer widths accordingly to address Gap Analysis 5.6.

~~3. Reduction of stream buffer widths. The director may allow the standard buffer width to be reduced by up to the listed minimum buffer width in Table 16.50.100(G)(2) provided:~~

~~a. A critical area report and mitigation plan approved by the city, and the best available science applied on a case-by-case basis, determine that a smaller area is adequate to protect the habitat functions and values based on site-specific characteristics and the proposal will result in a net improvement of stream and buffer functions;~~

~~b. A plan for mitigating buffer-reduction impacts is prepared using selected incentive-based mitigation options in Table 16.50.100(G)(3);~~

~~c. Where a substantial portion of the remaining buffer is degraded, revegetation with native plants in the degraded portions shall be included in the remaining buffer area;~~

~~d. A five-year monitoring and maintenance plan shall be included;~~

~~e. Incentive options may be accumulatively applied to allow a reduction allowance not to exceed 50 percent of the standard buffer width and Table 16.50.100(G)(2); and~~

~~f. Where multiple options for an action are prescribed in the Table 16.50.100(G)(3), only one option under that action may be applied.~~

~~**Table 16.50.100(G)(3): Stream Buffer Reduction Incentive Options**~~

~~Description of Action~~	~~Options~~	~~Reduction Allowance~~
~~Removal of impervious surface~~	~~Reduce impervious surfaces within the to-be-remaining buffer area by at least 50 percent~~	~~Up to 10 percentage points~~
	~~Remove all impervious surface where the to-be-remaining buffer is presently more than 50 percent impervious~~	~~Up to 20 percentage points~~
~~Installation of biofiltration/infiltration mechanisms~~	~~Install bioswales, created and/or enhanced wetlands, or ponds supplemental to existing storm drainage and water quality requirements~~	~~Up to 20 percentage points~~

~~Removal of invasive, non-native vegetation~~	~~Remove and employ extended (minimum five-year) monitoring and continued removal maintenance of relatively dense stands of invasive, nonnative vegetation from significant portions of the remaining buffer area~~	~~Up to 10 percentage points~~
~~In-stream habitat enhancement~~	~~Placement of log structure, bioengineered bank stabilization, or culvert removal~~	~~Up to 20 percentage points~~
	~~Improve fish passage and/or creation of side channel or backwater areas~~	~~Up to 25 percentage points~~
~~Installation of oil-water separators~~	~~If not required by other provisions of the Medina Municipal Code, install oil-water separator for stormwater quality control~~	~~Up to 10 percentage points~~
~~Use of pervious materials~~	~~Use pervious materials for driveway/road construction~~	~~Up to 10 percentage points~~
~~Off-site restoration, if no on-site area is possible~~	~~Restoration is provided at a 2:1 ratio or greater~~	~~Up to 10 percentage points~~
	~~Restoration is provided at a 4:1 ratio or greater~~	~~Up to 20 percentage points~~
~~Remove toxic material~~	~~Remove significant refuse or sources of toxic material~~	~~Up to 10 percentage points~~

4. Averaging of Stream Buffer Widths. The director may allow the standard stream buffer width to be averaged in accordance with a critical area report if:
   a. The proposal will result in a net improvement of stream, habitat and buffer function;
   b. The proposal will include revegetation of the averaged buffer using native plants, if needed;
   c. The total area contained in the buffer of each stream on the development proposal site is not decreased; and
   d. The standard stream buffer width is not reduced by more than 50 percent or to less than 25 feet wide, whichever is greater, in any one location.

H. Permitted activities in stream buffers. The following specific activities may be permitted within a stream, pond, lake, water of the state, or associated buffers when the activity complies with the provisions set forth in this title, and subject to the following standards:

1. *Clearing and grading.* When clearing and grading is permitted as part of an authorized activity or as otherwise allowed in these standards, the following shall apply:

   a. Grading is allowed only during the dry season, which is typically regarded as beginning on May 1st and ending on October 1st of each year; provided, that the City of Medina may extend or shorten the dry season on a case-by-case basis, based on actual weather conditions.

   b. The soil duff layer in ungraded areas shall remain undisturbed to the maximum extent possible. Where feasible, any soil disturbed shall be redistributed to other nonwetland and stream areas of the project site.

   c. The moisture-holding capacity of the topsoil layer shall be maintained by minimizing soil compaction or reestablishing natural soil structure and infiltrative capacity on all areas of the project area not covered by impervious surfaces.

   d. Erosion and sediment control shall be provided.

2. *Streambank stabilization.* Streambank stabilization to protect new structures from future channel migration is not permitted except when such stabilization is achieved through bioengineering or soft-armoring techniques in accordance with an approved critical area report.

3. *Roads, trails, bridges, and rights-of-way.* Construction of trails, roadways, and minor road bridging, less than or equal to 30 feet wide, may be permitted in accordance with an approved critical area report subject to the following standards:

   a. There is no other feasible alternative route with less impact on the environment;

   b. The crossing minimizes interruption of downstream movement of wood and gravel;

   c. Mitigation for impacts is provided pursuant to an approved mitigation plan and critical area report;

   d. Road bridges are designed according to the Department of Fish and Wildlife Water Crossing Design Guidelines, May 2013 or ~~as amended, or the~~ National Marine Fisheries Service Anadromous Salmonid Passage Facility Design, February 2008, or the Guidelines for Salmonid Passage at Stream Crossings in Oregon, Washington, and Idaho (June 2022) ~~or as amended~~; and

   e. Trails and associated viewing platforms shall not be made of continuous impervious materials.

4. *Utility facilities.* New utility lines and facilities may be permitted to cross watercourses in accordance with an approved critical area report if they comply with the following standards:

   a. Fish and wildlife habitat areas shall be avoided to the maximum extent feasible;

   b. Installation shall be accomplished by boring beneath the scour depth and hyporheic zone of the water body and channel migration zone, where feasible;

   c. The utilities shall cross at an angle greater than 60 degrees to the centerline of the channel in streams or perpendicular to the channel centerline whenever boring under the channel is not feasible;

   d. Crossings shall be contained within the footprint of an existing road or utility crossing where possible;

Commented [DY29]: Revised based on Gap Analysis 5.7. This version updates references to agency stream crossing guidance

e. The utility route shall avoid paralleling the stream or following a down-valley course near the channel; and

f. The utility installation shall not increase or decrease the natural rate of channel migration.

5. *Stormwater conveyance facilities.* Conveyance structures may be permitted in accordance with an approved critical area report subject to the following standards:

a. No other feasible alternatives with less impact exist;

b. Mitigation for impacts is provided; and

c. Vegetation shall be maintained and, if necessary, added adjacent to all open channels and ponds in order to retard erosion, filter out sediments, and shade the water.

I. Signs and fencing.

1. The outer perimeter of the habitat conservation area or buffer and the limits of those areas to be disturbed pursuant to an approved permit or authorization shall be marked in the field in such a way as to ensure that no unauthorized disturbance will occur, and verified by the director prior to the commencement of permitted activities. This temporary marking shall be maintained throughout construction, and shall not be removed until permanent signs, if required, are in place.

2. As a condition of any permit or authorization issued pursuant to this chapter, the director may require an applicant to install permanent signs along the boundary of a habitat conservation area or buffer. Permanent signs shall be made of a metal face and attached to a metal post, or another material of equal durability. Signs must be posted at an interval of one per lot or every 50 feet, whichever is less, and must be maintained by the property owner in perpetuity. The sign shall be worded as follows or with alternative language approved by the director ~~city manager~~ or designee:

Habitat Conservation Area
Do Not Disturb
Contact City of Medina Regarding Uses and Restriction
Fencing

3. The director ~~city manager~~ or designee may condition any permit or authorization issued pursuant to this chapter to require the applicant to install a permanent fence at the edge of the habitat conservation area or buffer, when fencing may prevent future impacts to the habitat conservation area.

4. Fencing installed as part of a proposed activity or as required in this subsection shall be designed so as to minimize interference with species migration, including fish runs, and shall be constructed in a manner that minimizes habitat impacts.

J. The subdivision and short subdivision of land in fish and wildlife habitat conservation areas and associated buffers is subject to the following:

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

2. Land that is located partially within a habitat conservation area or its buffer may be divided; provided, that an accessible and contiguous portion of each new lot is located outside of the habitat conservation area or its buffer and meets the city's minimum lot size requirements.

3. Access roads and utilities serving the proposed lots may be permitted within the habitat conservation area and associated buffers only if the city determines that no other feasible alternative exists and when consistent with these critical areas regulations.

(Code 1988 § 20.50.300; Ord. No. 924 § 3 (Att. B), 2015)