



PLANNING COMMISSION REPORT AND RECOMMENDATION TO
CITY COUNCIL

May 8, 2024

Project File Number:	LAND-2023-00179/180; SEPA-2020-00934	
Proposal Name:	Redmond 2050 Comprehensive Plan and Zoning Code Amendment - Natural Environment Element and Critical Areas Regulations	
Applicant:	City of Redmond	
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FINDINGS OF FACT

Public Hearing and Notice

- a. Planning Commission Study Sessions and Public Hearing Dates
- i. The City of Redmond Planning Commission held study sessions on March 13, April 10, and April 24, 2024.

ii. The City of Redmond Planning Commission held a public hearing on the proposed amendments on April 10, 2024; verbal and written comments were received.
- b. Notice and Public Involvement
- The public hearing notice was published in the Seattle Times on March 20, 2024 in accordance with RZC 21.76.080 Review Procedures. Notice was also provided by including the hearing schedule in Planning Commission agendas and extended agendas, published on City webpages, and distributed by email to various members of the public and various agencies.

Redmond Comprehensive Plan Amendment Summary

Staff proposed amendments to the Natural Environment element are shown in **Attachment A**.

Updates to the Natural Environment Element are being made as part of Redmond 2050, the periodic update of the Redmond Comprehensive Plan. Policies are revised to ensure compliance with the Growth Management Act and consistency with the Redmond 2050 themes of equity & inclusion, sustainability, and resiliency. Additionally, policies have been consolidated and streamlined to provide clarity and incorporate Best Available Science.

Major updates include:

- The six existing framework policies have been revised into three framework policies to support different components of the Natural Environment Element: FW-NE-1 for Section A, FW-NE-2 for Section B, and FW-NE-3 to support “quality of life” policies in sections C – F.
- Updates to **Section B, Environmentally Critical Areas**, were reviewed and updated as part of the *Critical Areas Regulations* zoning code amendment process.

Planning Commission Report – Findings and Conclusions

Redmond 2050 Natural Environment Element and Critical Areas Regulations Update

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There are currently 105 *Environmentally Critical Areas* policies. Revisions and consolidation decreased the number of policies to 70.

Policies are grouped into the following categories:

- General Critical Areas
 - Geologically Hazardous Areas
 - Critical Aquifer Recharge Areas
 - Frequently Flooded Areas
 - Wetlands
 - Water Quality and Basin Planning
 - Fish and Wildlife Habitat
- **Section C** - consolidation of tree canopy policies and improved alignment with the Tree Canopy Strategic Plan.
- **Section D. Climate Change** policies are recommended to be moved and revised into the new Climate Resilience and Sustainability element.

Redmond Zoning Code Text Amendment Summary

Proposed amendments to the Redmond Zoning code are shown in **Attachment B**.

This proposal is a periodic update of RZC 21.64, *Critical Areas Regulations*, as well as revisions to relevant definitions in RZC 21.78, *Definitions*. It includes revisions to RZC 21.68, *Shoreline Master Program*, and requires a Limited Shoreline Master Program Amendment since the Critical Areas Regulations are incorporated by reference into the City's Shoreline Master Program and to ensure consistency.

Key changes include:

- Modification of the current stream classification system to be more aligned with the State Department of Natural Resources' stream typing system.
- Increasing minimum buffers for landslide hazard areas from 15 feet to 25 feet.
- Implementing 15-foot building setbacks from critical areas buffers.
- Updating the Critical Areas Map Portfolio.

The update ensures compliance with the Growth Management Act and Shoreline Management Act. It provides consistency with state agency guidance documents as supported through Best Available Science. Revisions are included for code clarity and reflect new information.

Staff Analysis

Staff analysis for this proposal can be found in Appendix E (Technical Committee Report - Attachment A).

Recommended Conclusions of the Technical Committee

On March 6, 2024, the Technical Committee reviewed amendments to Comprehensive Plan and Zoning Code, identified as Attachments B and C to the Technical Committee Report, and found the amendments to be consistent with applicable review criteria and therefore recommended approval with no additional conditions.

RECOMMENDED CONCLUSIONS

The Planning Commission has reviewed:

- A. *Applicable criteria for approval: RZC 21.76.070 Criteria for Evaluation and Action, and*
- B. *The Technical Committee Report (Appendix E).*

Summary of Planning Commission Discussion

Natural Environment Element

Planning Commission discussions generally revolved around technical language used as well as the need for certain types of policies. This includes:

- The need and effectiveness of policies supporting noise barriers along highways.
- Discussion on environment stewardship policies.
- Discussion of policies moving to the new Climate Resilience and Sustainability element.
- Discussion of Critical Aquifer Recharge Area (CARA) policies. Policy NE-29 was updated based on this discussion.

Critical Areas Regulations

Planning Commission discussions generally revolved around compliance with state laws, best available science, climate change impacts, stream buffers, and CARA regulations. The discussions are summarized below:

- Compliance with state laws: RCW & WAC
- Steep slopes: why geologic hazards are considered a critical area.
- Compliance with Best Available Science (BAS) and climate change.
- Proposed map changes.
- Fish and Wildlife Habitat Conservation Areas: wildlife and species of local importance.
- Native vegetation & climate change.
- CARA map and regulations: long-term preservation of water quality and quantity. Frequency of quality control and monitoring checks.
- Stream buffers: response to WDFW comments about applying 200' buffer to all stream types.

A detailed issues matrix is provided as **Appendix A**.

Recommendation

The Planning Commission reviewed the amendments to the Redmond Comprehensive Plan and Redmond Zoning Code and found the amendments to be consistent with applicable review criteria and therefore recommended approval.

- The Planning Commission recommends approval of the Natural Environment element as shown in Attachment A.
- The Planning Commission recommends approval of the Redmond Zoning Code amendments to RZC 21.64, Critical Areas Regulations; RZC 21.78, Definitions; and RZC 21.68, Shoreline Master Program as shown in Attachment B.

Planning Commission Report – Findings and Conclusions

Redmond 2050 Natural Environment Element and Critical Areas Regulations Update

May 8, 2024

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Attachments

- A. Recommended Natural Environment Element**
- B. Recommended Critical Areas Regulations Update**

Appendices

- A. Planning Commission Issues Matrix**
- B. Written Public Comments**
- C. Public Hearing Notice**
- D. Public Hearing Minutes**
- E. Technical Committee Report**

Natural Environment Element

Vision Statement

Redmond in 2050 has maintained and enhanced its natural environment as it has developed into a more urban community. The City has protected and stewarded its critical habitats and ensures, through strategic programing and projects, that community members have walkable access to urban green and blue spaces that improve quality of life.

The city is framed within a beautiful natural setting, with parks, natural areas, and an abundance of trees continuing to define Redmond’s physical appearance, including forested hillsides that flank the Sammamish Valley, Lake Sammamish, and Bear Creek.

A system of interconnected green spaces and urban forests provides habitat for a variety of wildlife. The community prides itself on its environmental stewardship, including an emphasis on sustainable land use and development patterns, landscaping that requires little watering, and other techniques to protect and conserve the natural environment, while flourishing as a successful urban community. People continue to enjoy Lake Sammamish and the Sammamish River for boating, swimming, and other types of recreation. Bear and Evans Creeks provide regionally significant habitat for wild salmon spawning and rearing. Other streams have also been restored and enhanced. Through many cooperative efforts, such as through watershed management planning, improved water quality is demonstrated annually in a productive aquatic ecosystem.

Other efforts have also increased the health and safety of the community, through increased air and water quality, reductions in noise and light pollution, limiting development in hazardous areas such as floodplains and steep slopes, and reducing the risk of wildfires. Combined with other city programs and operations, the City is also resilient to the impacts of climate change.

Comprehensive Plan requirements:

A Natural Environment element is not a requirement under the Growth Management Act. It does require that the Land Use element provide for protection of the quality and quantity of groundwater used for public water supplies and shall review drainage, flooding, and stormwater runoff in the area and nearby jurisdictions, and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound.

Policies supporting this requirement are included in the Natural Environment element.

Additionally, policies supporting the Shoreline Master Program are found in the Natural Environment element.

Comprehensive Plan Guiding Principles

The following policies in this element support the Redmond 2050 guiding principles of equity and inclusion, resiliency, sustainability.

Equity and Inclusion	Resiliency	Sustainability
• FW-NE-1, • FW-NE-3, • NE-3, NE-8, • NE-12, NE-13, • NE-22, NE-62, • NE-76, NE-95	• NE-1, NE-16, • NE-27, NE-28, • NE-32, NE-38, • NE-45, NE-51, • NE-62, NE-66, • NE-69, NE-84	• FW-NE-1, • FW-NE-3, • NE-2, NE-6, • NE-7, NE-9, • NE-12, NE-13, • NE-78, NE-85, • NE-96, NE-104

Existing Conditions

Background

The Natural Environment Element implements the vision of Redmond as a city enriched with valued natural features that enhance the quality of life for the community and support the Redmond 2050 vision of equity and inclusion, sustainability, and resilience. This element provides policies to maintain key natural processes and functions that provide the natural physical foundation for the community while acknowledging the need to accommodate growth.

It is important to be responsible stewards of natural resources so that future generations enjoy and benefit from them as we do today. It is equally important to recognize that resources exist for the benefit of not only humans, but also for other living creatures and plants as well. The “green infrastructure” of the city provides the backbone on which physical development occurs.

Key strategies to maintaining the city’s environmental assets are summarized below:

- Work actively to address informational gaps in the environmental network;
- Use a science-based approach to ensure no net loss of critical areas’ significant ecological functions;
- Maintain and strive to enhance a healthy natural ecosystem;
- Monitor and report on the effectiveness of Redmond’s environmental protection programs, policies, and regulations;
- Foster a high quality of life by retaining trees, promoting clean air, ensuring high water quality, and limiting noise and light pollution.

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- Strive towards becoming an equitable, resilient, and sustainable community; and
- Promote the economic vitality of the community.

Future needs

The City's vision, policies, plans, codes, and regulations will continue to be implemented, and updated as needed, to ensure that the City's continued growth and development supports and enhances the natural environment.

Policies

The policies identified in the following sections provide the framework for the city to fulfill its natural environment vision and needs while improving the quality of life in the natural and built environment.

Policy Table of Contents

- A. Environmental Stewardship
- B. Environmentally Critical Areas
- Enhancing Redmond's Quality of Life
- C. Tree Preservation and Canopy Enhancement
- D. Air Quality
- E. Noise
- F. Light Pollution

A. Environmental Stewardship

FW-NE-1 Emphasize Redmond's role as an environmental steward by conducting City business in a manner that:

- Increases community understanding of the natural environment through education and involvement programs to promote active participation in addressing environmental challenges and solutions;
- Promotes sustainable land use patterns and low-impact development practices;
- Leads by example in the conservation of natural resources, such as energy, water, and habitat; and
- Avoids adverse environmental impacts.

The environmental stewardship policies address the need to consider the long-range implications of City policies on the environment, to conduct City operations in a manner that protects the environment, provide education on how the City, its businesses, and community members can improve the quality of the environment through conservation and sustainable practices, while also ensuring equitable access to a clean, healthy, and safe natural environment.

NE-1 Incorporate a whole-system approach into policy, regulatory, and service decisions, recognizing the interrelationships among people, nature, and the economy. Consider broader implications and look for ways to accomplish multiple goals.

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- NE-2 Conserve resources and minimize adverse environmental impacts in municipal service provision.
- NE-3 Maintain and strengthen efforts to improve air quality, water quality, soil quality, and ecosystem function to ensure the health and well-being of people, animals, and natural systems.
- NE-4 Strengthen efforts to reduce or eliminate the release of harmful substances into the air, surface water, soil, and groundwater that degrade the quality of Redmond's natural systems.
- NE-5 Encourage the judicious use of renewable natural resources and conserve nonrenewable resources.
- NE-6 Conserve water and optimize reuse of material resources to protect natural systems by reducing resource extraction, greenhouse gas emissions, and air and water pollution.
- NE-7 Promote sustainable consumption strategies and zero waste of resources.
- NE-8 Promote and lead education and involvement programs to raise public understanding of environmental issues and encourage environmental stewardship.
- NE-9 Support sustainable development and strive towards becoming a sustainable community.
- NE-10 Advance environmentally responsible construction practices that minimize natural resource use, reduce waste, advance net zero energy, and leverage low impact development strategies.
- NE-11 Encourage projects that utilize alternative technologies, engineering, and designs that emphasize low-impact development strategies through incentives and flexibility in meeting regulatory requirements.
- NE-12 Collaborate with public, tribal, non-profit, and private sector organizations to advance sustainability and conservation goals to protect and enhance the environment.
- NE-13 Ensure that the planning and implementation of environmental sustainability and hazard mitigation projects are equitable and do not disproportionately impact vulnerable populations.

B. Environmentally Critical Areas

- FW-NE -2 Protect, enhance, and restore habitat and natural ecosystems, including shorelines, to functional levels that provide resilience and adaptability, reduce impacts from natural hazards, and support biological imperatives for clean water and air.

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The environmentally critical areas policies provide for the protection of designated critical areas identified in the Growth Management Act. This includes Fish and Wildlife Habitat Conservation Areas, Wetlands, Frequently Flooded Areas, Critical Aquifer Recharge Areas, and Geologically Hazardous Areas. The policies in this section are also adopted as part of the Shoreline Master Program (SMP).

Environmentally critical areas are important contributors to Redmond's high quality of life. Some critical areas are protected to preserve and maintain their ecological functions and values, and the quality of life and livability for humans. Others that present public health and safety hazards are protected to prevent loss of property and human life caused by inappropriate development in these areas.

Science plays a central role in delineating critical areas, identifying functions and values, and identifying protection strategies. The State's Best Available Science (BAS) rule requires the integration of science into the establishment and update of critical areas regulations.

- NE-14 Use Best Available Science to preserve and enhance the functions and values of critical areas through policies, regulations, programs, and incentives. Periodically update through adaptive management to reflect scientific advances and changes in local circumstances.
- NE-15 Use the precautionary principle when there is an absence of, or incomplete, valid scientific information accompanying a development application. Use rigorous analysis to appropriately limit development and land use activities until the uncertainty is sufficiently resolved.
- NE-16 Conserve and protect environmentally critical areas from loss or degradation. Maintain these areas in native growth protection tracts.
- NE-17 Allow modification of critical areas when it is scientifically documented they have relatively low ecological value, and the functions and values will be fully replaced and provide an ecological lift. Avoid land uses and developments that are incompatible with environmentally critical areas.
- NE-18 Avoid the creation of new parcels with building sites entirely within wetlands, streams, steep slopes, frequently flooded areas, and their associated buffers. Configure future parcels to have a building site outside of these areas.
- NE-19 Encourage use of creative and appropriate site design and housing types to balance environmental protection and achievable density.
- NE-20 Require buffers adjacent to critical areas to protect the ecological functions integral to healthy critical areas ecosystems and/or avoid risk to human life and safety.

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NE-21 Require a building setback from critical areas buffers to protect the critical area buffer from temporal loss during project construction and to provide useable yard areas for both residential and commercial developments.

While protection of critical areas is important to the Redmond community, allowing all properties some reasonable economic use also is important. This policy does not guarantee that each property will be able to be used for its theoretically highest and best use or that all portions of a property can be used for development. Rather, the policy provides that the critical areas regulations be administered so that each property has some community-appropriate economic use.

NE-22 Ensure critical area regulations provide reasonable economic use for all property within Redmond when taking into account the entire property.

While local variations need to be accommodated, consistency between King County jurisdictions can help community members and the development community work more efficiently with critical areas regulations.

NE-23 Work cooperatively with other jurisdictions in King County to develop and implement critical area regulations, designations, and education programs that meet the goals of the Redmond community and provide for optimal consistency among jurisdictions.

Geologically Hazardous Areas

Geologic hazards include areas susceptible to erosion, sliding, earthquake, or other geologic events. They pose a threat to the health and safety of citizens when incompatible residential and nonresidential development is sited in areas of significant hazards.

NE-24 Avoid or minimize potential impacts to life and property from geologic hazards such that the site is rendered as safe as one not containing such hazard. Support this using geotechnical studies and analysis that reflect sound engineering principles.

NE-25 Strictly limit disturbance in Landslide Hazard Areas.

NE-26 Manage development in Geologically Hazardous Areas using Best Management Practices (BMPs) to promote soil stability, maximize tree retention, follow natural drainage patterns, minimize erosion, and avoid potential landslides during construction and use.

NE-27 Require site-specific seismic hazard preparedness studies for essential public facilities and utility services.

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Critical Aquifer Recharge Areas

Critical Aquifer Recharge Areas (CARAs) are areas with a critical recharging effect on aquifers used for potable water. Redmond's CARA is highly susceptible and vulnerable to contamination from surface activities due to the shallow depth to groundwater.

A significant portion of the city's water supply is obtained from wells. Once groundwater is contaminated, it is difficult, costly, and sometimes impossible to clean up. Preventing contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people.

The risk of groundwater contamination depends on two main sets of conditions. One set of conditions relates to the ground itself and how easy it is for water to pass through to groundwater. This is what is meant by hydrologic susceptibility. The other set of conditions relate to how likely it is for potential contaminants to reach groundwater. This is known as contaminant loading potential or source loading. Vulnerability is the combined effect of these two conditions.

NE-28 Protect the quality of groundwater used for public water supplies to ensure adequate sources of potable water for Redmond and the region. Ensure that the level of protection provided corresponds with the potential for contaminating the municipal water supply aquifer.

NE-29: Ensure degradation of groundwater quality does not occur. ~~Where appropriate,~~ **P**rohibit the infiltration of runoff from pollution generating surfaces **in areas having stormwater management options in addition to infiltration.** ~~and P~~**rohibit** infiltration into contaminated soil **in all areas.**

NE-30 Prohibit discharge of wastewater and potentially contaminated stormwater to groundwater. Prohibit reclaimed water and greywater from infiltrating in the critical aquifer recharge area to preserve drinking water quality.

For water to be pumped on a sustainable basis, new water must enter the aquifer. The best available data indicates the aquifer is recharged by rainwater infiltrating into the ground through permeable soils and by recharge from rivers, streams and lakes. Wetlands and natural areawide landscape depressions with standing water likely aid in groundwater infiltration by slowing runoff and allowing it to seep into the ground when located in suitable areas. Impervious surfaces and wetland fill associated with development decreases aquifer recharge.

NE-31 Retain aquifer recharge capacity by requiring infiltration of clean runoff citywide to recharge the drinking water aquifer where feasible and limiting the impacts of temporary construction dewatering on groundwater quantity.

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In urbanized areas, maintaining open space, areas of natural vegetation, and wetlands also can help recharge aquifers. By siting these areas on lands with the highest potential for groundwater recharge, they can provide both aesthetic and recreational functions and groundwater recharge.

NE-32 Encourage retention of open spaces, tree protection areas, and other areas of protected native vegetation with a high potential for groundwater recharge.

Hazardous material cleanups have the potential to protect and improve ground and surface water quality. State and federal programs require that certain properties contaminated with hazardous materials be cleaned up. In addition, many property owners voluntarily clean up contaminated land. Redmond does not have many contaminated sites, but the City should encourage cleanups. Staff should work with property owners and state and federal agencies to ensure that site cleanup that may affect groundwater supplies are thorough and do not present a future threat to groundwater quality.

NE-33 Clean up contaminated sites within critical aquifer recharge areas that may affect Redmond's groundwater supplies to such a standard that the sites will not present a risk to drinking water supplies.

NE-34 Encourage cleanup of contaminated sites outside of critical aquifer recharge areas. To encourage such cleanups, ensure regulations and standards are performance based, do not duplicate state and federal requirements, and provide for expeditious approval where local review is required.

Frequently Flooded Areas

Frequently Flooded Areas are open channel and overbank areas that together constitute the floodplain; they are frequently inundated with floodwater. Floodplains are generally flat, low-lying areas adjacent to rivers or streams that periodically flood during storm events. These areas move large volumes of water and debris downstream during storms.

The Federal Emergency Management Agency (FEMA) delineates flood hazards along major river and stream corridors, such as the Sammamish River, Bear Creek, and Evans Creek, to identify areas at risk from floodwater. This information is used for both floodplain management and insurance rating.

Flooding can damage structures in the floodplain. Persons living or working within a floodplain are at risk of injury from floods and the disease that can spread from flood waters.

As an environmental asset, floodplains provide critical functions for fish species. They provide important areas of riparian habitat, habitat formation, connectivity to wetlands, store and convey stormwater and floodwater, and recharge groundwater.

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- NE-35 Reduce the amount of effective impervious surface in floodplains and uplands contributing runoff to downstream floodplains.
- NE-36 Employ no net impact floodplain management to avoid impacts to both upstream and downstream properties.
- NE-37 Achieve no net loss of the structure, value, and functions of natural systems constituting Frequently Flooded Areas.
- NE-38 Regulate development in the 100-year floodplain to avoid substantial risk and damage to public and private property and loss of life. Ensure these regulations, as a minimum, comply with state and federal requirements for floodplain regulations.
- NE-39 Locate public facilities outside of the 100-year floodplain unless needed to serve development within areas characterized by urban development or because efficiencies from locating near existing public facilities already within the 100-year floodplain would clearly outweigh the risk of damage to the facility.
- NE-40 Cooperate with flood hazard reduction planning carried out by King County and update policies and development regulations to incorporate appropriate recommendations from these studies.
- NE-41 Require compensatory floodplain storage for all projects constructed within the 100-year floodplain.

As a watershed develops the amount of impervious surfaces increase, increasing runoff and consequently flood depths. One way of anticipating and responding to these changes as well as impacts from climate change, is to identify the future-conditions floodplain. The future-conditions floodplain is the area that will be inundated by a 100-year flood when the watershed is fully developed. FEMA flood hazard maps are based on current and historic conditions, not build-out. Additional work is needed to identify the future-conditions floodplain.

- NE-42 Include flood flow estimates anticipating climate change and representing build-out conditions into the City's floodplain regulations as it becomes available.

Properties outside the 100-year floodplain can aggravate flooding and flood damages. Development in landslide or erosion prone areas can lead to the clogging of streams and drainage systems, increasing flooding within and outside the 100-year floodplain. As areas outside the 100-year floodplain develop, increased impervious surfaces may increase runoff during storms and thus increase flood heights within the 100-year floodplain and cause flooding outside the existing 100-year floodplain. Increased stormwater runoff can significantly impact salmon and steelhead habitat by literally washing it away. Reducing the amount of

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impervious surface and implementing stormwater detention can help reduce these impacts, but not eliminate them entirely.

NE-43 Mimic natural systems by limiting impervious surfaces and increasing infiltration where appropriate.

NE-44 Explore new methods to limit effective impervious surface to protect environmental resources such as streams and allow for groundwater recharge, allow for efficient land use, reduce potential for flooding, and accommodate the level of development intensity planned for the area.

Wetlands

Wetlands are areas that are inundated by ground or surface water frequently enough to support vegetation typically adapted to live in saturated soils. They perform many ecological functions, including flood control, reductions of erosion and siltation, water storage, groundwater recharge, maintain water quality, nutrient absorption, and fish and wildlife habitat. Additionally, wetlands provide opportunities for research and scientific study, outdoor education, and open space.

Wetlands can be hazardous areas to develop. Their organic soils are generally poorly suited for development and may not support foundations, streets, or utilities.

It is the City's goal to achieve no net loss of wetlands through retention of function, value, and acreage of wetlands. Mitigation sequencing is used to ensure impacts to wetlands are avoided, where possible, and mitigated, when necessary.

NE-45 Preserve wetlands to achieve no net loss of functions and values. Strive to maintain wetlands acreage over the long term.

NE-46 Use federal mitigation sequencing guidelines when reviewing projects impacting wetlands. This involves, in the following order: avoiding the impact altogether by not taking a certain action or parts of actions; minimizing the impact by limiting the degree or magnitude of the action and its implementation; 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; and compensating for the impact by replacing or providing substitute resources or environments.

NE-47 Ensure the amount of mitigation required reflects the values and functions of wetlands affected by development, the temporal loss of these functions and values, the risk that the mitigation may fail, the spatial locations of the mitigation, and the difficulty of

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replacing many wetlands functions and values. For these reasons, require in general a significantly larger area of mitigation than the area of wetlands impacted.

NE-48 Pursue opportunities to enhance and restore degraded wetlands.

NE-49 Support the use of mitigation banks located in the City for capital improvement projects that are linear, such as road and utility projects.

Water Quality and Basin Planning

Development in the watersheds of rivers, streams, and lakes must be carefully managed to retain water quality and prevent flooding.

Redmond is located in Water Resources Inventory Area (WRIA) 8, which represents the salmon recovery planning area of the Lake Washington/Cedar/Sammamish watershed. Chinook salmon are listed as threatened under the Endangered Species Act (ESA). In WRIA 8, residents, scientists, businesses, environmentalists, and governments are cooperating on protection and restoration projects and on developing a science-based plan to conserve salmon today and for future generations. Funding for the salmon conservation plan is provided by the 29 local governments, including Redmond, in the watershed.

NE-50 Maintain surface water quality necessary to support the protection of native fish and wildlife meeting state and federal standards over the long term.

NE-51 Restore, protect, and support the biological health and diversity of Water Resource Inventory Area (WRIA) 8 within the city and those natural systems that underpin watershed health and hydrological integrity.

NE-52 Control the flow of nutrients (especially phosphorus), heavy metals, and other emerging pollutants (such as 6PPD-quinone) into streams, rivers, Lake Sammamish and other area lakes, and natural wetlands. Require treatment measures where development results in discharges to surface or groundwaters.

The City uses watershed management planning to address water impairments and reduce impacts to water resources caused by urbanization, as supported by the Washington State Department of Ecology (DOE) and the U.S. Environmental Protection Agency (EPA).

NE-53 Cooperate regionally with state agencies in developing and implementing watershed management plans, water quality management plans, and monitoring programs.

NE-54 Complete and maintain watershed management plans for all areas in the city. Address water quality, habitat, stormwater runoff, and flooding issues. Review each plan for effectiveness at least once each five years.

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NE-55 Use recommendations of watershed management plans to inform Comprehensive Plan policies, development regulations, and capital facility plans.

The habitat in Redmond's rivers, streams and lakes is important to protecting the area's high quality of life, valuable aquatic resources, and the area's natural beauty. The Sammamish River, with its trails and parks, is an important focal point for Redmond and ties the city into a regional recreational network. These areas are important to all stages of the salmon life cycle.

NE-56 Protect, enhance, and restore rivers, streams and lakes, including riparian and shoreline habitat, to protect water quality, reduce public costs, protect fish and wildlife habitat, and prevent environmental degradation. Protect both perennial and intermittent streams to preserve natural hydraulic and ecological functions, fish and wildlife habitat, recreational resources, and aesthetics.

NE-57 Maintain natural hydrological functions within the city's ecosystems and watersheds and encourage their restoration to a more natural state.

NE-58 Protect and restore the near shore habitat of Lake Sammamish to encourage green shorelines by avoiding bulkheads within the 100-year floodplain elevation.

Riparian corridors consist of vegetation along river and stream banks that are influenced by the surface waters. Ecological processes of riparian corridors include water flow, sediment routing, vegetation succession, woody debris recruitment, and plant and animal speciation.

NE-59 Avoid development impacts to riparian corridors. Protect riparian vegetation within stream buffers to maintain ecological functions. Enhance and rehabilitate these areas if they are impacted by development and encourage this when development takes place on adjacent uplands. Establish stream buffers to protect riparian ecological functions that contribute to healthy stream systems.

Channelization and urbanization have impacted the Sammamish River and city streams. Restoring rivers and streams to their original conditions can improve fish and wildlife habitat, environmental functions, recreational uses and aesthetics, and reduce flood damage.

NE-60 Reroute Evans Creek from its current degraded position in a highly industrialized setting to an area to the north that allows for improved conditions, floodplain and wetland connectivity, and ample buffer widths.

NE-61 Encourage improvements such as removal of fish barriers when abutting properties are developed.

Public education is an important component in efforts to protect surface and groundwater. Individual choices can either protect or adversely impact surface water and groundwater.

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Education can help residents and businesses choose options that meet their needs and desires while protecting surface and groundwater quality.

NE-62 Support public education to protect and improve surface and groundwater resources by:

- Increasing the public's awareness of potential impacts on water bodies and water quality and what they can do to help and get involved in their community;
- Encouraging the use of safer, less toxic lawn, gardening and farming practices, including environmentally appropriate fertilizers, chemicals, and natural yard care;
- Encouraging proper use, recycling, and disposal of chemicals;
- Educating businesses on surface and groundwater protection Best Management Practices in cooperation with other government agencies and other organizations; and
- Educating the public and businesses on identifying and using less toxic chemicals and eliminating or reducing pollution generating practices and activities.

Natural drainage courses can function to lessen flood damages. Properly functioning natural streams and drainage ways include pools and overflow areas that slow stormwater runoff. Retaining natural drainage courses also helps to accommodate stormwater flows from upstream properties.

NE-63 Avoid alteration of riparian stream corridors to the maximum extent possible. Whenever possible, avoid reduction in the capacity of natural drainage courses and minimize enclosures of natural drainage ways. Discourage stream relocation except for City-approved relocation to provide improved ecological lift due to current development encroachment and poor existing ecological lift. Replace and enhance the flood control and habitat values of drainage courses when relocation or alteration is necessary for public benefit. Require enhancement when alteration of a stream to increase the usability of a site is permitted.

NE-64 Use bridges as the preferred method of crossing a watercourse that has habitat suitable for fish use or may be rehabilitated for fish use in the future. Design these bridges to allow small animal migration. Consider allowing fish passable culverts that provide stream beds similar to natural channels where there is no loss of habitat and the cost of a bridge does not justify its benefits to fish passage, flood control, wildlife passage or other resources.

NE-65 Prohibit creation of fish barriers and remove existing fish barriers.

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NE-66 Stabilize stream banks and shorelines, as necessary, by bioengineering techniques except where infeasible.

NE-67 Daylight natural drainage channels that have been placed within culverts and have had their capacity or habitat value reduced as development or redevelopment occurs. Allow retention of existing culverts for stream crossings where they do not result in a fish barrier in streams that contain or have the potential to contain fish habitat.

Fish and Wildlife Habitat

The Growth Management Act defines Fish and Wildlife Habitat Conservation Areas. These lands primarily include areas with which endangered, threatened, sensitive, candidate, and priority species have a primary association. They also include aquatic areas and lands critical for habitat connectivity.

Fish and wildlife enhance the quality of life in a community. Salmon and steelhead are enduring symbols of the Northwest. Birds are valued for their songs and appearance. Other wildlife is attractive and helps maintain the valued character of the area. Wildlife diversity is often an indicator of environmental health.

Native American tribes in the region retain strong spiritual and cultural ties to aquatic species based on thousands of years of use for tribal religious/cultural ceremonies, subsistence, and commerce. In particular, these species include salmon and steelhead.

Wildlife habitats are characterized by a variety of internal (site specific) and external (contextual) habitat conditions. Internal conditions include: structural diversity (horizontally and vertically) of habitat; edge conditions; presence of snags or large trees; presence of downed logs; and presence or nearness of water and its safe accessibility. External conditions include: the size of the habitat patch; ability of the habitat to serve as a corridor or link to otherwise isolated natural areas, parks, preserves, or open spaces; the area is surrounded by a buffer or serves as a buffer; and the surrounding habitat types or land uses.

NE-68 Maintain a rich ecosystem supporting a variety of wildlife, as well as opportunities for education and appreciation of native habitats.

NE-69 Preserve and restore regional biodiversity with a focus on promoting native species and preventing and eliminating invasive species.

The central planning concept for wildlife habitat in urban environments is to create an integration of habitat reserves and interconnecting corridors. Habitat reserves are generally considered to be areas of differing sizes that meet the basic needs of wildlife. Corridors are regarded as narrow, linear strips of habitat that have wildlife value. The corridors serve as interconnecting links between or along the habitat reserves.

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Core Preservation Areas form the backbone of the habitat areas within the city. These areas are already protected through other regulatory mechanisms.

Quality Habitat Areas provide significant wildlife value by virtue of their characteristics.

NE-70 Protect, restore, and enhance Core Preservation Areas within the city.

NE-71 Pursue opportunities to preserve Quality Habitat Areas and ensure all development, parks, and recreation areas minimize impacts to, and retain the character of, these areas.

Species protection is identified and accomplished during a site-specific study. Development is regulated through a series of management recommendations as established by state and federal agencies.

NE-72 Protect natural resources having a primary association with Species of Concern, Priority Species, and Species of Local Importance.

NE-73 Modify City plans, programs, and policies, such as public projects, private development standards, maintenance standards, and utility practices, to be consistent with Endangered Species Act (ESA) policies and requirements.

NE-74 Give special consideration to conservation and protection measures to preserve and enhance anadromous fisheries.

Habitat fragmentation occurs when wildlife habitats become separated from each other due to urbanization. In part, this is a natural consequence of the development of urban areas. Where sections of critical habitat are linked, populations can move between the habitat areas.

NE-75 Minimize habitat fragmentation caused by public and private development by linking wildlife habitats via corridors.

Many species of fish and wildlife are quite mobile and move from jurisdiction to jurisdiction during their life or with the seasons. This mobility requires a regional approach to their management.

NE-76 Coordinate land use planning and management of fish and wildlife resources with other local governments within the region, affected state and federal agencies, and affected tribal communities.

Monitoring and managing urban wildlife habitats are critical to maintaining their integrity against numerous outside influences and managed landscapes surrounding them. A management strategy is needed for the maintenance of wildlife habitat.

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NE-77 Develop a wildlife habitat management strategy and well-defined goals to monitor and maintain wildlife habitat, with mechanisms for City and volunteer support.

Pesticides can kill birds, cause cancer, and decimate prey. Use of these substances to maintain City-owned rights-of-way, parklands, and public spaces should be reduced to the maximum extent practical. Alternatives to using pesticides and fertilizers, such as employing compost-amended soils or compost tea during development and redevelopment, could minimize use of these synthetic and harmful products.

NE-78 Encourage conservation and sustainability throughout the city by minimizing impacts to wildlife and water quality through practices, such as limiting the use of toxic pesticides and fertilizers, incorporating alternative pest management methods, and providing public education about such practices.

Noxious weeds are a problem because they replace native plant species and provide little to no value in terms of forage, cover, or nest sites for the wildlife community. These weeds spread quickly from one area to another and already adversely affect most native habitats.

NE-79 Use native or Northwest adaptive vegetation on City capital projects, preventing the continued spread of invasive and noxious weeds to habitat areas through implementation of Integrated Pest Management practices.

NE-80 Use a majority of native or Northwest adaptive vegetation that is supportive of wildlife for new developments, including City capital projects, adjacent to wildlife habitats.

NE-81 Ensure management of noxious weeds and invasive species are an integral part of landscape plans for new development. Work with King County and Washington State to target the management of noxious weeds.

Non-regulatory measures are a key component of a comprehensive wildlife habitat management strategy. Additionally, education is integral to fostering an appreciation for wildlife habitat management. City certification as a Community Wildlife Habitat involves the entire community. This designation may include certified backyard sites, certified school sites, a public demonstration garden, participation by the business community, and related projects, such as wildlife surveys, sensitive areas mapping, and creation of wildlife corridors.

NE-82 Support urban wildlife habitat management through education, City actions, and demonstration projects.

NE-83 Employ wildlife habitat-friendly practices in designing and maintaining city parks.

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Enhancing Redmond's Quality of Life

The following sections contain additional policies that the City will utilize to enhance its quality of life through an improved natural and built environment, including an increased tree canopy, as well as reduced impacts and nuisances from air, noise, and light pollution. These policies, when implemented, provide added benefits from better stormwater management, improved water quality, and reduced risks from wildfire.

FW-NE-3 - Enhance Redmond's quality of life through tree preservation, improved air quality, and reduced impacts from noise and light pollution.

C. Tree Preservation and Canopy Enhancement

The tree preservation and canopy enhancement policies address the value of protecting trees and enhancing the placement of trees within the city. A healthy tree canopy supports stormwater management and provides water quality improvements in receiving waters, as well as helps resist the spread of wildfire during drier months.

The City maintains and regularly updates a Tree Canopy Strategic Plan to implement the policies found in this section.

NE-84 Enhance green space, tree canopy, habitat quality, and natural drainage systems.

NE-85 Increase Redmond's tree canopy to 40% of city's land area by 2050.

NE-86 Maximize tree retention and a treed appearance when development occurs through the following:

- Require the retention of viable tree clusters, forested slopes, treed gullies, and specimen trees that are of species that are long-lived, not dangerous, well-shaped to shield wind, and located so that they can survive within a development without other nearby trees.
- Design and construct developments to retain trees.
- Identify and protect trees during land divisions and site development.
- Allow some tree removal in Centers when required to allow development of climate-friendly higher-density and transit-oriented development.
- Allow removal of nonsignificant trees to provide for project construction.
- Plant replacement trees on appropriate areas of the site or off-site locations to replace significant trees removed during construction.
- Encourage appropriate tree pruning, avoiding topping.

NE-87 Design and construct City capital projects to maximize tree canopy by:

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- Identifying and protecting trees during site development.
- Allowing removal and replacement of trees that are impacting critical infrastructure.
- Planting replacement trees on appropriate areas of the site or off-site locations to replace significant trees removed during construction.
- Encouraging appropriate tree pruning, avoiding topping.

Trees for water quality improvement

Trees along waterways, wetlands and lakes provide many important functions. Along streams and rivers, trees shade the water, which reduces temperatures in the summer and helps salmon, steelhead, and other fish to survive. Trees in gullies and along streams help slow stormwater and reduce erosion. The root systems of trees can also help stabilize streams, reducing erosion and stream migration. Leaves and insects falling from trees into streams, wetlands, and lakes provide important food sources for fish and other aquatic creatures. Trees also provide habitats for birds and animals.

NE-88 Preserve trees within streams, wetlands, and their associated buffers, including building setbacks from said streams, wetlands, and associated buffers.

NE-89 Plant suitable native and Northwest adaptive trees and vegetation within degraded stream, wetlands, and lake buffers. Encourage planting suitable native and Northwest adaptive trees and vegetation within steep slopes.

Street Trees

Street trees provide an important visual amenity to the community. They provide a unifying look within diverse areas of the city and integrate buildings with each other and the landscape. Street trees help to develop a sense of place. Many streets are remembered because of their trees. Street trees also shade streets and parking areas in summer, reducing temperatures and building cooling loads, and conserving energy.

NE-90 Require street trees along all arterial streets and along local streets designated in neighborhood policies. Select, place, and install street trees to maximize tree life, provide shade to sidewalk users, and reduce safety hazards.

Another method of encouraging trees in the city is to make it easy for property owners to plant trees on their property or in planting strips adjacent to their property. Over the years, these voluntary efforts can result in many trees in the community. Maintaining lists of suitable trees, telling community members how to find good locations for trees, and informing community members how to have underground utilities located so they will not be damaged during tree planting can help encourage people to plant trees.

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NE-91 Provide resources and incentives to residents and property owners that encourage them to plant trees on their properties.

Ensuring that Redmond remains a city with many trees requires that they be managed and maintained. The City maintains street trees in many areas. Property owners also must properly maintain trees to provide for their future.

NE-92 Maintain and enhance a street tree maintenance program on arterial streets and City-owned trees.

NE-93 Establish private maintenance provisions for trees that will be retained within developments.

D. Air Quality

Clean outdoor air quality supports human health and well-being, together with the health of the natural environment. Clean air helps to keep the mountains, Lake Sammamish, Sammamish River, and other areas visible from many areas in Redmond. These are views that the community values. Continued federal funding for transportation improvements is dependent on complying with federal air quality standards. While other agencies regulate air quality, Redmond and other cities have an important role to play in maintaining high air quality. This includes transportation planning to reduce emissions and land use planning to internalize trips and reduce emissions.

More recently, smoke from wildfires has been the primary contributor to degraded air quality in Redmond, especially during the summer. Redmond maintains policies in its Climate Resilience and Sustainability Element to help mitigate the negative impacts of wildfire smoke. The City also maintains regulations to reduce the impacts of wildfire and smoke, and has programs and initiatives to support those most vulnerable to wildfire-related smoke.

NE-94 Promote compliance with federal and state air pollution control laws and improvements to regional air quality in collaboration with the Puget Sound Clean Air Agency.

NE-95 Achieve criteria air pollutant reductions in both municipal operations and the community at large, with attention given to social equity.

NE-96 Maintain high air quality through land use and transportation planning and management.

NE-97 Reduce airborne particulates through a street sweeping program, dust abatement on construction sites, covered loads of hauled materials, and other innovative methods.

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E. Noise

Noise is a pollutant that can have significant negative impacts on human health. Excessive noise also makes neighborhoods less desirable places to live and can contribute to deterioration of those areas. The Washington State Department of Ecology has adopted noise standards, but does not enforce them; therefore, the City should continue to enforce noise regulations.

In addition to the policies identified here, other City goals and policies will contribute to the reduction of excessive noise, such as reduced reliance on personal vehicles as well as the electrification of trucks, machinery, and tools such as leaf blowers.

NE-98 Maintain noise regulations to limit noise to levels that protect the public health and that allow residential, commercial and manufacturing areas to be used for their intended purposes. Provide flexibility in the regulations to allow construction at night when necessary to protect worker safety and minimize service disruptions, while maintaining the tranquility of the city.

NE-99 Provide noise reduction and mitigation measures to reduce the noise and visual impacts of freeways and arterials on residential areas. Ensure the Washington State Department of Transportation provides appropriate levels of noise suppression when expanding or improving state highways.

NE-100 Require buffering or other noise reduction and mitigation measures to reduce noise impacts from Manufacturing Park, Business Park, and Industrial zones on residential areas.

F. Light Pollution

Light Pollution policies address the protection of the community from excessive glare and promote the concept of “dark skies.” Glare is strong, steady light that shines away from the area that is meant to be illuminated. Glare interferes with views and, in extreme cases, may interfere with the normal use of nearby properties. Inappropriate overhead lighting along the city’s river and streams can interfere with the rearing, migration and spawning activities of salmon and trout. Night lighting is an important safety feature and should be allowed, but lighting should be designed and directed to minimize glare.

NE-101 Minimize and manage ambient light levels to protect the integrity of ecological systems and public health without compromising public safety and cultural expression.

NE-102 Design and construct night lighting to minimize excessive glare and to avoid spillover onto nearby properties.

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NE-103 Encourage the use of low-intensity lights that are located and shielded to prevent light from reaching the water surface of Lake Sammamish or the city's various streams. Encourage the use of pedestrian level or shaded lighting when providing lighting along trails and walkways in natural areas.

The “dark skies” policy seeks to reduce glare and maintain views of stars and planets. Redmond recognizes that night lighting is needed, but seeks to minimize artificial light spillage into the sky.

NE-104 Encourage dark night skies in Redmond’s residential neighborhoods, in the Sammamish Valley, in the Bear Creek Valley, and over Lake Sammamish through development regulations, design standards, and development review.

Redmond Zoning Code

Critical Areas Regulations Updates

This document contains the following amendments to:

- RZC Chapter 21.64 - Critical Areas Regulations
- RZC Chapter 21.68 - Shoreline Regulations
- RZC Chapter 21.78 - Definitions

Attachment B

Chapter 21.64 (v.5)

CRITICAL AREAS REGULATIONS

Sections:

- 21.64.010 Critical Areas.
- 21.64.020 Fish and Wildlife Habitat Conservation Areas.
- 21.64.030 Wetlands.
- 21.64.040 Frequently Flooded Areas.
- 21.64.050 Critical Aquifer Recharge Areas.
- 21.64.060 Geologically Hazardous Areas.
- 21.64.070 Procedures.

21.64.010 Critical Areas.

A. Purpose. The purposes of this chapter are to:

1. Preserve the City's important environmental features while allowing development to occur if compatible with and in consideration of these critical areas;
2. Assure the conservation and protection of critical areas from loss or degradation by classifying and designating the same and to restrict land uses and development which are incompatible with environmentally critical areas;
3. Achieve no net loss of core preservation areas within fish and wildlife habitat conservation areas, which includes riparian corridors, and minimize impact to and retain character of quality habitat areas, and protect species of concern, priority species, and species of local importance;
4. Avoid wetland impacts and achieve a goal of no net loss of wetland function, value, and acreage; and where possible enhance and restore wetlands;
5. Achieve no net loss of structure, value, and functions of natural systems within frequently flooded areas and to employ no net impact floodplain management in

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order to avoid impacts to upstream and downstream properties and substantial risk and damage to public and private property and loss of life;

6. Protect critical aquifer recharge areas by avoiding land use activities that pose potential contamination, and minimize impacts to recharge areas through the application of strict performance standards;

7. Avoid and minimize potential impacts to life and property from geologic hazards such that sites are rendered as safe as one not containing such hazard through appropriate levels of study and analysis, application of sound engineering principles, and regulation or limitation of land uses;

8. Avoid impacts to critical areas and preserve the functions of critical areas. In appropriate circumstances, impacts to specified critical areas resulting from regulated activities may be minimized, rectified, reduced, and/or compensated for, consistent with the requirements of this chapter;

9. By limiting development within and alteration of critical areas:

a. Protect members of the public and public resources and facilities from injury, loss of life, or property damage due to landslides and steep slope failures, erosion, seismic events, or flooding;

b. Protect unique, fragile, and valuable elements of the environment, including ground and surface waters, wetlands, and fish and wildlife and their habitats;

c. 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; and

d. Prevent cumulative adverse environmental impacts to water quality, wetlands, and fish and wildlife habitat, and the overall net loss of wetlands, frequently flooded areas, and habitat conservation areas;

10. Provide standards, guidelines, and criteria to guide application of these critical areas goals and policies when considered with other goals and policies of the RZC, including those pertaining to natural features and environmental protection;

11. Serve as a basis for exercise of the City's substantive authority under the State Environmental Policy Act (SEPA) and the City's SEPA rules;

12. Protect critical areas in accordance with the Growth Management Act and through the application of best available science, as determined according to

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WAC 365-195-900 through 365-195-925, and in consultation with state and federal agencies and other qualified professionals; and

13. Coordinate environmental review and permitting of proposals to avoid duplication and delay.

B. Findings. The City finds that:

1. Redmond contains certain areas that ~~can be~~are identified and characterized as environmentally sensitive or critical. Such areas within the City include fish and wildlife habitat conservation areas, wetlands, frequently flooded areas, geologically hazardous areas, and critical aquifer recharge areas and their associated buffers.

2. Past growth patterns have ~~in some cases contributed to natural disastersexacerbated impacts stemming from weather related events~~ which threaten public health and safety, and that by preventing development on certain critical areas the City can better maintain public health, safety and welfare. In addition, by preserving features that provide for clean water, fisheries, and wildlife, the City can help maintain a positive ecological balance that provides for the immediate and long-term public welfare.

3. Critical areas perform a variety of valuable and beneficial biological and physical functions that benefit the City and its residents. Identification, regulation, and protection of critical areas are necessary to protect the public health, safety, and general welfare. Some types of critical areas may also pose a threat to human safety or to public and private property. The functions of critical areas include the following:

a. Fish and Wildlife Habitat Conservation Areas. Wildlife areas are ecosystem composed of unique interacting systems of soils, geology, topography, and plant and animal communities. They consist of land-based areas and aquatic areas. Wildlife habitat provides opportunities for food, cover, nesting, breeding, and movement for fish and wildlife within the City; maintains and promotes diversity of species and habitat within the City; helps to maintain air and water quality; controls erosion; serves as areas for recreation, education and scientific study, and aesthetic appreciation; and provides neighborhood separation and visual diversity within urban areas. Riparian ~~corridors~~Management Zones are essential for wild fish populations. Healthy riparian zones are dynamic ecosystems that perform various functions that form salmonid habitat. Some of the major functions include producing and delivering large and small woody debris to shorelines and stream channels; shoreline protection and habitat formation; removing sediments and dissolved chemicals from water; moderating water temperature; providing favorable

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microclimate; providing habitat for terrestrial animals; and providing proper nutrient sources for aquatic life. Additionally, aquatic areas and their associated buffers store and convey stormwater and floodwater; recharge groundwater; and serve as areas for recreation, education and scientific study and aesthetic appreciation. The City's overall goal shall be no net loss of riparian corridor functions and values.

b. Wetlands. Wetlands are fragile ecosystems which serve ~~several important~~ beneficial functions. Wetlands assist in the reduction of erosion, siltation, flooding, ground and surface water pollution, and provide wildlife, plant, and fisheries habitats. Wetlands destruction and impairment may result in increased public and private costs or property losses. Wetland buffers serve to moderate runoff volume and flow rates; reduce sediment, chemical nutrient and toxic pollutants; provide shading to maintain desirable water temperatures; provide habitat for wildlife; protect wetland resources from harmful intrusion; and generally preserve the ecological integrity of the wetland area.

c. Frequently Flooded Areas. Floodplains and other areas subject to flooding perform important hydrologic functions and may present a risk to persons and property. Floodplains help to store and convey storm water and flood water; recharge ground water; provide important areas for riparian habitat; and serve as areas for recreation, education, and scientific study. Development within floodplain areas can be hazardous to those inhabiting such development, and to those living upstream and downstream. ~~Floods also cause substantial damage to public and private property that result in significant costs to the public and individuals.~~

d. Critical Aquifer Recharge Areas. ~~Potable water is an essential life-sustaining element.~~ Aquifer recharge areas provide a source of potable water and contribute to stream discharge during periods of low flow. Certain portions of the City's planning area are susceptible to contamination of drinking water and watercourse supplies through rapid infiltration of pollutants through the soil to ground-water aquifers. Critical Aquifer Recharge Areas I and II are designated under the provisions of the Growth Management Act, RCW Chapter 36.70A, and are established based on proximity to and travel time of groundwater to the City's public water source wells.

e. Geologically Hazardous Areas. Geologically hazardous areas include areas susceptible to erosion, sliding, earthquake, or other geological events. [These areas are further defined in WAC 360-190-120.](#) They pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development is sited in or near areas of significant hazard. Some geological hazards can be reduced or mitigated by engineering, design, or

modified construction so that risks to health and safety are acceptable. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas should be avoided.

~~4. Identification, regulation, and protection of critical areas are necessary to protect the public health, safety, and general welfare.~~

54. This section of the RZC contains standards, guidelines, criteria, and requirements intended to identify, analyze, preserve, and mitigate potential impacts to the City's critical areas and to enhance and restore degraded resources, such as wetlands, riparian stream corridors, or habitat, where possible.

C. Applicability - Regulated Activities.

1. The provisions of this chapter shall apply to any activity that has a potential to significantly adversely impact a critical area or its established buffer unless otherwise exempt. Such activities include but are not limited to:

- a. Removing, excavating, disturbing, or dredging soil, sand, gravel, minerals, organic matter, or materials of any kind;
- b. Dumping, discharging, or filling with any material;
- c. Draining, flooding, or disturbing the water level or water table;
- d. Driving pilings or placing obstructions;
- e. Constructing, reconstructing, demolishing, or altering the size of any structure or infrastructure that results in disturbance of a critical area or the addition of any impervious surface coverage to a site;
- f. Destroying or altering vegetation through clearing, grading, harvesting, shading, or planting vegetation that would alter the character of a critical area;
- g. Activities that result in significant changes in water temperature and physical or chemical characteristics of water sources, including quantity and pollutants; and
- h. Any other activity that has a potential to significantly adversely impact a critical area or established buffer not otherwise exempt from the provisions of this chapter;
- i. Regarding frequently flooded areas, the provisions of this chapter shall apply to any activity that would result in change to the flood storage capacity of a floodplain or flood fringe area, or cause an increase in the base flood elevation, unless otherwise exempt.

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2. To avoid duplication, Types I, II, III, IV, V, and VI Permits shall be subject to and coordinated with the requirements of this chapter.

3. For the purposes of this chapter, "Department" shall mean the City of Redmond Department of Planning and Community Development and "Committee" shall mean the City of Redmond Technical Committee.

D. Exemptions.

1. The following activities shall be exempt from ~~the provisions of this chapter securing a separate permit:~~

a. Existing and ongoing agricultural activities provided no alteration of flood storage capacity or conveyance occurs and the activity does not adversely affect critical areas, and existing and ongoing agricultural activities identified in a farm plan approved by both the King County Conservation District and the City;

b. Activities involving artificially created wetlands or streams intentionally created from non-wetland sites, including but not limited to grass-lined swales, irrigation and drainage ditches, detention facilities, and landscape features, except wetlands, streams, or swales created as mitigation or that provide habitat for salmonid fishes;

c. ~~Activities~~Disturbance or development occurring in areas of 40 percent slope or greater with a vertical elevation change of up to 10 feet ~~upon~~based upon City review ~~and acceptance of a soils report~~documentation and analysis prepared by a qualified professional such as a geologist or geotechnical engineer which ~~demonstrates proves that the slope was man-made, was approved as part of legal grading activities, and~~ that no significant adverse impact will result from the exemption activity. ~~In addition, activities occurring in man-made steep slopes shall be exempt provided the applicant submits documentation from a geotechnical engineer that the slope was man-made and there will be no resulting adverse impacts. the construction of a single-family dwelling unit in man-made steep slopes which were created as part of an approved legal grading activity shall be exempt provided the applicant submits documentation from a qualified professional that the slope was man-made and there will be no resulting significant adverse impacts. This latter exemption applies to one stand-alone single-family residence and is not to be construed to apply to a series of proposed dwellings as part of a subdivision or short plat application;~~

d. Normal and routine maintenance, operation and reconstruction of existing public roads, streets, utilities, and associated rights-of-way and structures, provided ~~that~~ reconstruction of any structures may not increase the impervious

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area, expand the roadway, remove flood storage capacity, or further encroach into a critical area or its buffer;

e. Normal maintenance, ~~and~~ repair, and ~~reconstruction or~~ remodeling of residential or commercial structures, ~~or legal pre-existing and ongoing uses of the site~~, provided that there is no expansion of the structure and no increase to the existing nonconforming condition of the structure relative to the reconstruction of any structures may ~~shall not increase the size of the previously approved building footprint (see subsection D.5 of this section), remove flood storage capacity, or further encroach into a critical area or its buffer based on a current delineation~~;

f. Reconstruction of a structure that has been fully or partially destroyed by fire, explosion, or other unforeseen circumstances not caused by the owner subject to subsections D.5 and D.6 of this section;

g. Continuation of legal pre-existing and ongoing uses of a site provided there is no increase to the existing nonconforming condition of the use relative to the critical area or its buffer based on a current delineation;

fh. Site investigative work and studies necessary for preparing land use applications, including soils tests, water quality studies, wildlife studies and similar tests and investigations, provided that any disturbance of the critical area shall be the minimum necessary to carry out the work or studies and provided that the area is restored to its previous condition;

gi. Educational activities, scientific research, and outdoor recreational ~~a~~activities, including but not limited to interpretive field trips, and bird watching that will not have a significant adverse effect on the critical area;

hj. Emergency activities necessary to prevent an immediate threat to public health, safety, or property. Once the immediate threat has been addressed, any adverse impacts on critical areas shall be minimized and mitigated as noted in (2) below;

ik. Normal and routine maintenance and operation of existing landscaping and gardens provided they comply with all other regulations in this chapter;

jl. Construction of pedestrian trails which are permeable, have a maximum width of six feet, minimize the need for tree removal, and are located in the outer 25 percent of the buffer. Tree removal must be compliant with RZC 21.72, Tree Protection;

~~k. Minor activities not mentioned above and determined by the Department to have minimal impacts to a critical area~~;

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~~tm.~~ Previously legally filled wetlands or wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway, ~~or wetlands accidentally created by other human actions within 20 years of the date the development application is filed. The latter shall be documented by the applicant through photographs, statements, and/or other evidence;~~

~~mn.~~ Activities affecting Category IV wetlands which are 250 square feet in size or smaller and hydrologically isolated;

~~no.~~ Installation, construction, replacement, repair, or alteration of utilities and their associated facilities, lines, pipes, mains, equipment, or appurtenances in improved City road rights-of-way and provided that the area is restored to its previous condition;

~~op.~~ Removal of nonnative vegetation providing removal is accomplished using hand methods and that removal is in compliance with this chapter. Hand removal does not include using mechanical equipment, such as weed wackers, mowers, power hedge trimmers, or other similar devices. Also, this does not include the use of herbicides.

2. Notwithstanding the exemptions provided by this section, any otherwise exempt activities occurring in or near a critical area ~~should~~shall meet the purpose and intent of RZC 21.64.010.A and should consider on-site alternatives that avoid or minimize significant adverse impacts.

3. Exempt activities occurring in flood hazard areas shall not alter flood storage capacity or conveyance.

4. With the exception of subsections D.1.a, D.1.~~gi~~, D.1.~~hj~~ and D.1.~~ik~~ of this section, and normal maintenance and repair of residential and commercial structures as in subsection D.1.e of this section, no property owner or other entity shall undertake exempt activities prior to providing 10 days' notice to the Department. In case of any question as to whether a particular activity is exempt from the provisions of this section, the Department's determination shall prevail and shall be confirmed in writing within 10 days of receipt of the owner's or applicant's letter. Those persons performing emergency activities falling under subsection D.1.h of this section shall provide telephone or written communication with the Department within 48 hours of the activity notifying such emergency activity was taken.

5. Structures in a critical area or buffer shall be allowed to be reconstructed if fully or partially destroyed by fire, explosion, or other unforeseen circumstances not caused by the owner by fire or other natural disasters ~~by more than 50 percent of its assessed or appraised value, whichever is greater;~~ if located in a critical area or

buffer.- A complete building permit for such reconstruction shall be submitted within 3 years of the destruction event. The reconstruction can include structure modification and an increase in height provided the building footprint is not expanded and there is no permanent disturbance to the critical area or its buffer. If there is no temporary disturbance to the critical area or buffer, a critical area delineation is required. If the process of reconstruction results in temporary disturbance to the critical area or buffer, a Critical Areas Report per RZC Appendix 1 is required.

~~6.-Reconstruction of the structure in a critical area or critical area buffer shall not further encroach into the critical area or critical area buffer area or increase the building footprint. The reconstruction can include structure modification and an increase in height provided the building footprint is not increased and there is no site disturbance in the critical area or its buffer. A critical areas delineation is required but a full Critical Areas Report per RZC Appendix 1 is not required.~~

~~76.The provisions of RZC 21.76.100.F, Legal Nonconforming Uses and Structures do not apply to S~~structures that are nonconforming solely due to the provisions of this chapter ~~shall not be governed by RZC 21.76.100.F, Legal Nonconforming Uses and Structures.~~ The structure may be increased in height subject to the building height standard of the underlying zoning provided the building footprint is not increased. ModificationsExpansion of to the nonconforming structure may occur. asIf the expansion is outside of the critical areas and their buffers, a critical area delineation is required., may increase in height per the underlying zoning provided the building footprint is not increased; If the expansion is within a critical area or buffer, a Critical Areas Report per RZC Appendix 1 is required, including and must demonstrated mitigation sequencing per RZC 21.64.010.I. Projects under this provision shall submit critical areas reports per RZC Appendix 1, Critical Areas Reporting Requirements.

E. Critical Areas Maps.

1. Critical Areas Generally. The following critical areas maps are adopted and included as a part of this chapter:

- a. Fish and Wildlife Habitat Conservation Areas (Map 64.1);
- b. Critical Wildlife Habitat Map Willows/Rose Hill Neighborhood (Map 64.2);
- cb. StreamsClassifications (Map 64.23);
- dc. Wetlands (Map 64.34);
- ed. Frequently Flooded Areas (Map 64.45);

- ~~fe.~~ Critical Aquifer Recharge Areas (Map 64.~~56~~);
- ~~f.~~ [Critical Aquifer Recharge Areas Full Extent \(Map 64.6\)](#);
- ~~g.~~ [Critical Aquifer Recharge Areas Time of Travel \(Map 64.7\)](#);
- ~~h.~~ [Critical Aquifer Recharge Areas Time of Travel Full Extent Map \(Map 64.8\)](#);
- ~~gi.~~ Landslide Hazard Areas (Map 64.~~87~~);
- ~~hj.~~ Erosion Hazard Areas (Map 64.~~98~~); ~~and~~
- ~~ik.~~ Seismic Hazard Areas (Map 64.~~109~~); ~~and~~
- ~~j.~~ [Critical Aquifer Recharge Areas Full Extent \(Map 64.10\)](#);

2. These maps shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of critical areas shall be determined in the field by a qualified consultant according to the procedures, definitions, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail.

F. Relationship to Other Regulations.

1. These critical area regulations shall apply as an overlay and in addition to zoning, land use, and other regulations established by the City of Redmond. In the event of any conflict between these regulations and any other regulations of the City, the regulations which provide greater protection to environmentally critical areas shall apply.
2. Areas characterized by particular critical areas may also be subject to other regulations established by this chapter due to the overlap or multiple functions of some sensitive or critical areas. Wetlands, for example, may be defined and regulated according to the wetland and fish and wildlife habitat conservation area provisions of this chapter. In the event of any conflict between regulations for particular critical areas in this chapter, the regulations which provide greater protection to environmentally critical areas shall apply.
3. 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.

G. Permit Process and Application Requirements.

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1. Pre-Application Conference. All applicants are encouraged to meet with the City prior to submitting an application subject to this section. The purpose of this meeting shall be to discuss the City's critical area requirements, processes and procedures; to review any conceptual site plans prepared by the applicant; to identify potential impacts to critical areas and appropriate mitigation measures; and to generally inform the applicant of any federal or state regulations applicable to the subject critical area. Such conference shall be for the convenience of the applicant and any recommendations shall not be binding on the applicant or the City. The pre-application conference provided for in this section shall be consolidated with any pre-application conference held on any land use permit application.

2. Application Requirements.

a. Timing of Submittals. A critical areas report, if applicable, must be submitted to the City during application submittal. This is a required component of determining application completeness. The purpose of the report is to determine the extent, characteristics, and functions of any critical areas located on or that have a potential to be significantly adversely impacted by activities on a site where regulated activities are proposed. The report will also be used by the City to assist in the determination of the appropriate critical area rating and establishment of appropriate buffer requirements in accordance with this chapter.

b. Critical Areas Report Contents. Reports and studies required to be submitted by this chapter shall contain the information indicated in RZC Appendix 1, Critical Areas Reporting Requirements, applicable to each critical area.

3. Consultant Qualifications and City Review. All reports and studies required of the applicant by this section shall be prepared by a qualified consultant as that term is defined in the 21.50.01078, Definitions. The City may, at its discretion and at the applicant's expense, retain a qualified consultant to review and confirm the applicant's reports, studies, and plans.

4. Permit Process. This section is not intended to create a separate critical areas permit process for development proposals. The City shall consolidate and integrate the review and processing of critical areas aspects of proposals with other land use and environmental considerations and approvals.

H. Alteration or Development of Critical Areas - Standards and Criteria. Standards and criteria are set forth in subsequent sections of this chapter.

I. General Mitigation Standard.

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1. All significant adverse impacts to critical areas functions and values shall be mitigated. Mitigation actions by an applicant or property owner shall occur in the following sequence:

- a. Avoiding the impact altogether by not taking a certain action or parts of actions;
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps such as project redesign, relocation, or timing, to avoid or reduce impacts;
- c. Rectifying the impact to the critical area by repairing, rehabilitating, or restoring the affected environment to the conditions existing at the time of the initiation of the project;
- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
- e. Compensating for the impact by replacing or providing substitute resources or environments; and/or
- f. Monitoring the hazard or other required mitigation and taking remedial action when necessary.

J. Other Appropriate Mitigation Actions. Where impacts cannot be avoided and the applicant has exhausted feasible design alternatives, the applicant or property owner shall seek to implement other appropriate mitigation actions in compliance with the intent, standards, and criteria of this chapter. In an individual case, these actions may include consideration of alternative site plans and layouts, reductions in the density or scope of the proposal, and/or implementation of the performance standards listed in subsequent sections of this chapter.

K. Proposed Developments. Development proposed in critical areas shall incorporate and reflect the performance standards contained in subsequent sections of this chapter.

L. Mitigation Standards, Criteria, and Plan Requirements.

1. Mitigation Performance Standards. Significant adverse impacts to critical area functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence identified in RZC 21.64.010.I. General Mitigation Standard, which include less preferred and/or compensatory mitigation shall demonstrate that:

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- a. All feasible and reasonable measures will be taken to reduce impacts and losses to the critical area or to avoid impacts where avoidance is required by these regulations; and
- b. The restored, created or enhanced critical area or buffer will be as viable and persistent as the critical area or buffer area it replaces; and
- c. In the case of wetlands and riparian stream corridors, no overall net loss will occur in wetland or riparian stream corridor functions and values.

2. Location and Timing of Mitigation.

- a. Mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site.
- b. When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant, such as an easement, provided such mitigation is beneficial to the critical area and associated resources. Credits from a state certified wetland mitigation bank may be used to compensate for wetland impacts consistent with i. below.
- c. In-kind mitigation shall be provided except when the applicant demonstrates and the Department concurs that greater functional and habitat value can be achieved through out-of-kind mitigation.
- d. Only when it is determined by the Department that subsections L.2.a, L.2.b, and L.2.c of this section are inappropriate and impractical, shall off-site, out-of-kind mitigation be considered.
- e. When wetland or riparian stream corridor mitigation is permitted by these regulations on-site or off-site, the mitigation project shall occur near an adequate water supply (river, stream, ground-water, stormwater facility outfall) with a hydrologic connection to the critical area to ensure successful development or restoration.
- f. Any agreed upon mitigation proposal shall be completed concurrently with project construction, unless a phased schedule that assures completion prior to occupancy has been approved by the Department.
- g. Wetland acreage replacement ratios shall be as specified in RZC 21.64.030.C.78.b, Wetland Replacement Ratios.

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h. Restored or created riparian stream corridors, where permitted by these regulations, shall be an equivalent or higher riparian stream corridor value or function than the altered riparian stream corridor.

i. All off-site mitigation shall be provided within the Redmond city limits.

M. Performance Standards for Mitigation Planning. The performance standards noted in subsequent sections of this chapter shall be incorporated into mitigation plans submitted to the City for impacts to critical areas. Mitigation plans shall contain the information indicated in RZC Appendix 1, Critical Areas Reporting Requirements.

N. Approved Mitigation Projects - Signature. On completion of construction, any approved mitigation project must be signed off by the applicant's qualified consultant and approved by the Department. Signature will indicate that the construction has been completed as planned.

O. Approved Mitigation Projects - Contingency Planning. Approved mitigation projects shall implement the monitoring and contingency planning requirements of RZC 21.64.010.P below.

P. Monitoring Program and Contingency Plan.

1. A monitoring program shall be implemented by the applicant to determine the success of the mitigation project and any necessary corrective actions. This program shall determine if the original goals and objectives are being met.

2. A contingency plan shall be established for correction if the mitigation project is inadequate or fails. A performance and maintenance bond or other acceptable security device is required to ensure the applicant's compliance with the terms of the mitigation agreement. The bond or other security shall meet the requirements set forth in RZC 21.76.090.F, Performance Assurance.

3. Monitoring programs prepared to comply with this chapter shall reflect the following guidelines:

a. Use scientific procedures for establishing the success or failure of the project;

b. For vegetation determinations, permanent sampling points shall be established;

c. Vegetative success equals 80 percent per year survival of planted trees and 80 percent cover of shrubs, groundcover, and emergent species, and less than 20 percent cover of invasive species;

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- d. Submit monitoring reports on the current status of the mitigation project to the Department. The reports are to be prepared by a qualified consultant and reviewed by the City, and shall be produced on the following schedule: 30 days after planting, early in the growing season of the second year, end of the growing season of the second year, and annually thereafter;
- e. The monitoring reports shall contain the following information on monitoring method and monitoring components, as relevant:
 - i. Vegetation Monitoring: Methods shall include counts, photo points, random sampling, sampling plots, transects, visual inspections, and/or other means deemed appropriate by the Department and a qualified consultant. Vegetation monitoring components shall include general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, invasive weeds, and/or other components deemed appropriate by the Department and a qualified consultant.
 - ii. Water Quantity Monitoring: Methods shall include piezometers, sampling points, stream gauges, visual observation, and/or other means deemed appropriate by the Department and a qualified consultant. Water quantity monitoring components shall include water level, peak flows, soil saturation depth, soil moisture within root zone, inundation, overall water coverage, and/or other components deemed appropriate by the Department and a qualified consultant.
 - iii. Water Quality Monitoring: Methods shall include testing, plant indicators, and/or other means deemed appropriate by the Department and a qualified consultant. Water quality monitoring components shall include temperature, pH, dissolved oxygen, total suspended solids, total metals, herbicides, pesticides, and/or other components deemed appropriate by the Department and a qualified consultant.
 - iv. Wildlife Monitoring: Methods shall include visual sightings, aural observations, nests, scat, tracks, and/or other means deemed appropriate by the Department and a qualified consultant. Wildlife monitoring components shall include species counts, species diversity, breeding activity, habitat type, nesting activity, location, usage, and/or other components deemed appropriate by the Department and a qualified consultant.
 - v. Geomorphic Monitoring: Methods shall include cross-sectional surveys, profile surveys, point surveys, photo-monitoring, and/or other means deemed appropriate by the Department and a qualified consultant. Monitoring components shall include location and effect of large woody

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debris, depth and frequency of pools, bank erosion, channel migration, sediment transport/deposition, structural integrity of weirs, and/or other components deemed appropriate by the Department and a qualified consultant.

f. Monitoring programs shall be established for a minimum of five years to ensure the performance standards have been met. The project mitigation plan shall include monitoring elements such as those identified above, that ensure certainty of success for the project's natural resource values and functions. If the mitigation goals are not obtained within the initial five-year period, the applicant remains responsible for restoration of the natural resource values and functions until the mitigation goals agreed to in the mitigation plan are achieved;

g. If necessary, correct for failures in the mitigation project;

h. Replace dead or undesirable vegetation with appropriate plantings;

i. Repair damages caused by erosion, settling, or other geomorphological processes to all affected properties and structures, both on and off the property;

j. Redesign mitigation project (if necessary) and implement the new design; and

k. Correction procedures shall be approved by a qualified consultant and the Department.

Q. Buffer Areas.

1. The establishment of buffer areas may be required for development proposals and activities in or adjacent to critical areas. The purpose of the buffer shall be to protect the integrity, function, value, and resource of the subject critical area, and/or to protect life, property, and resources from risks associated with development on unstable or sensitive lands. Buffers shall consist of an undisturbed area of native vegetation established to achieve the purpose of the buffer. Lawns, walkways, driveways, paved areas, and mowed or developed areas will not be considered wetland or stream buffers or included in buffer area calculations when assessing whether adequate compensatory mitigation buffers have been provided. If the site has previously been disturbed, the buffer area shall be revegetated pursuant to an approved planting plan. Buffers shall be protected during construction by placement of a temporary barricade, on-site notice for construction crews of the presence of the critical area, and implementation of appropriate erosion and sedimentation controls.

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2. Required buffer widths shall reflect the sensitivity of the particular critical area and resource or the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the critical area.

3. See individual critical areas regulations in RZC 21.64.020.B, 21.64.030.B, and 21.64.060.B for required buffer widths.

4. A residential lot approved in a subdivision that has designated streams or wetlands and their associated buffer in a Native Growth Protection Area established at plat approval shall be allowed to be improved honoring the wetland and stream buffers already established in the plat.

[5. See also 21.64.010.S regarding hazardous tree removals.](#)

R. General Critical Area Protective Measures.

1. Critical Area Markers and Signs.

a. The boundary at the outer edge of critical areas tracts and easement shall be delineated with permanent survey stakes, using iron or concrete markers as established by local survey standards.

b. The boundary at the outer edge shall be identified with temporary signs prior to any site disturbance. The temporary signs shall be replaced with permanent signs prior to occupancy or use of the site. The number and spacing of permanent signs shall be designated by the Planning Department.

[c. Stream name signs shall be installed per the City's standard details whenever stream crossings are approved with a land development activity.](#)

2. Critical Area Fencing. In order to inform subsequent purchasers of real property of the location of the critical area buffer boundaries and to discourage encroachment into that buffer, the developer of the property shall install split rail fencing or a similar fencing [to allow for the free movement of expected terrestrial wildlife species](#) approved by the Department along the boundary of the critical area. [Property owners, or in the case of subdivisions the Homeowners Association, shall be responsible for maintenance of critical area fencing.](#)

3. Notice on Title.

a. In order to inform subsequent purchasers of real property of the existence of critical areas, the owner of any property containing a critical area or buffer on which a development proposal is submitted shall file a notice with the King County Department of Records and Elections. The notice shall state the

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presence of the critical area or buffer on the property, of the application of the Critical Areas Ordinance to the property, and the fact that limitations on actions in or affecting the critical area or buffer may exist. The notice shall run with the land.

b. The applicant shall submit proof that the notice has been filed for public records before the City approves a building permit or, in the case of subdivision of land or binding site plans, at or before recording.

4. Critical Areas Tracts.

a. Critical areas tracts, or other mechanisms as deemed appropriate by the Department, shall be used to delineate and protect contiguous critical areas and buffers. Areas in critical areas tracts can be included in determining gross site density, floor area ratios, and other area and dimensional regulations for five or fewer lots. Critical area tracts may not be used through the preliminary plat process to credit lot area and dimensional regulations for proposed residential lots.

b. Critical areas tracts shall be recorded on all documents of title or record for all affected lots.

c. Critical areas tracts shall be designated on the face of the plat or recording drawing in a format provided by the City Attorney.

d. The City may require that any required critical areas tract be held in an undivided interest by each owner of a building lot within the development, with the ownership interest passing with the ownership of the lot, or held by an incorporated homeowners' association, or other legal entity which assures the ownership, maintenance, and protection of the tract.

S. Hazardous Trees. Hazardous trees physically located within a Native Growth Protection Area (NGPA), Native Growth Protection Easement (NGPE), critical area, or critical area buffer may not be removed. However, hazardous trees within these areas that are within striking distance of a structure may be snagged to avoid potential damage to the structure and provide habitat benefit. The height of the snag shall be less than the striking distance to the structure. Tree remains after snagging shall be left within the NGPA/NGPE, critical area, and critical area buffer. See also RZC 21.72, Tree Regulations.

ST. Critical Areas Reasonable Economic Use Exception - Private Property. These standards and regulations are not intended, and shall not be construed or applied in a manner, to deny all reasonable economic use of private property. Any private property owner who claims that strict application of these standards would deny all reasonable economic use of their property may apply for an exception under RZC

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21.76.070.U.3, Decision Criteria - Critical Areas Reasonable Economic Use (Private).
[This is a Type III process.](#)

~~FU.~~ Critical Areas Reasonable Use Exception - Public Project.~~4.~~—Any public agency or City department claiming that strict application of these standards would deny construction of a public project may apply for a Critical Areas Reasonable Use Exception - Public Project under RZC 21.76.070.U.4, Decision Criteria - Critical Areas Reasonable Use (Public Project). [This is a Type II process.](#)

(Ord. 2661; Ord. 2803; Ord. 2957; Ord. 2968)

Effective on: 4/27/2019

21.64.020 Fish and Wildlife Habitat Conservation Areas.

A. Classification and Rating of Fish and Wildlife Habitat Conservation Areas.

1. The Growth Management Act identifies fish and wildlife habitat conservation areas. These areas include:

- a. Areas ~~with which~~[where endangered, threatened, and sensitive](#) species of concern have a primary association.
 - i. 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 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.
 - ii. State-designated endangered, threatened, and sensitive species are those fish and wildlife species native to the State of Washington, identified by the Washington 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 Washington State Department of Fish and Wildlife maintains the most current listing and should be consulted as necessary for current listing status. Also included are state candidate species which include fish and wildlife species that the Washington

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Department of Fish and Wildlife will review for possible listing as endangered, threatened, or sensitive.

b. State Priority Habitats and Areas Associated with State Priority 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 Washington State Department of Fish and Wildlife.

c. Habitats and Species of Local Importance. Habitats and species of local importance are those identified by the City of Redmond, including those that possess unusual or unique habitat warranting protection because of qualitative species diversity or habitat system health indicators. The City Council shall formally designate habitats and species of local importance, if any, through the Zoning Code amendment process.

d. 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.

e. Waters of the State. Waters of the state include lakes, rivers, ponds, streams, inland waters, underground waters, and other surface waters and watercourses within the jurisdiction of the State of Washington, as classified in WAC 222-16-031.

f. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity.

g. Land essential for preserving [fish and wildlife habitat](#) connections between habitat blocks and open spaces.

[h. Riparian Management Zones and riparian ecosystems, including salmonid habitat.](#)

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2. To promote consistent application of the standards and requirements of this chapter, fish and wildlife habitat conservation areas within the City of Redmond shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance.

a. Core Preservation Areas. Core preservation areas include those areas of the City which are already protected through other regulatory mechanisms. They include Native Growth Protection Areas, ~~Class I~~Type S streams and their buffers, and ~~Class II through IV~~Types Fs, Ff, N and O streams, and other areas similarly protected. They may also include lands where development rights have been sold and some lands with recorded open space easements, depending on the purpose of the easement. The core preservation area includes wetlands and streams and their associated buffers as they become identified at a site-specific level.

b. Species Protection. Species of concern, priority species, and species of local importance shall be protected through management recommendations. "Species of concern" includes those species listed as state endangered, threatened, sensitive, or candidate, as well as those species listed or proposed for listing by the federal government. Priority species are those species considered to be priorities for conservation and management and are identified in the Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) List. In Redmond, "species of local importance" refers to the Great Blue Heron.

c. Quality Habitat Areas. As sites are assessed for development, the Department shall evaluate each site for the presence of quality habitat using the following methodology. Sites will be qualitatively scored based upon several parameters indicative of habitat qualities. These parameters include size, community diversity, interspersions (spatial patterns), continuity, forest vegetation layers, forest age, and invasive plants. This assessment will allow the City to identify remaining quality habitat in the City; to protect remaining quality habitat by imposition of the performance standards outlined in RZC 21.64.020.G, Fish and Wildlife Habitat Conservation Area Performance Standards, ~~so long as there is no significant adverse economic impact to the developer~~; and to provide incentives to preserve such quality habitat.

d. Riparian ~~Stream Management Corridors~~Zones. Riparian ~~stream Management corridors~~Zones are the areas with the potential to provide full riparian functions. They include ~~Class I through IV~~ streams and adjacent riparian habitat areas (stream buffers). Streams shall be designated ~~Class I, Class II, Class III, and Class IV~~Type S, Type Fs, Type Ff, N, and O according to the criteria in this subsection. When more than one classification is present in short, alternating segments on the property in question, it will be classified

according to the stream class which is more restrictive. [See also WAC 222-16-031 for additional stream classification guidance.](#)

i. ~~"Class I Type S"~~ streams are [all waters, within the ordinary high water mark, as inventoried as "shorelines of the state" under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW, but not including those waters associated with wetlands as defined in Chapter 90.58 RCW. These](#) ~~those~~ streams identified as "Shorelines of the State" under the City of Redmond Shoreline Master Program.

ii. ~~"Class II Type Fs"~~ streams are ~~those natural streams~~ [segments of natural waters](#) that are not ~~Class I Type S~~ and are either perennial or intermittent and have salmonid fish use or the potential for salmonid fish use. [These streams have connectivity to Type S streams, confirmed salmonid use, or documented historic presence. The connectivity can be either at the surface or a pipe.](#)

iii. ~~"Class III Type Ff"~~ streams are ~~those natural streams~~ [segments of natural waters](#) that are not ~~Class I Type S~~ or ~~Class II Type Fs~~ and are either perennial or intermittent and have one of the following characteristics:

A. Non-salmonid fish use or the potential for non-salmonid fish use. [They have at less than a two-foot bankful width and a greater than 16% slope where the upstream basin is less than 50 acres or a greater than 20% slopes where the upstream basin is greater than 50 acres;](#) or

B. Headwater streams with a surface water connection to salmon-bearing or potentially salmon-bearing streams (~~Class I or II Type S or Type Fs~~).

iv. ~~"Class IV Type N"~~ streams are those ~~natural streams~~ [segments of natural waters](#) that are not ~~Class I, Class II, or Class III Type S, Type Fs, or Type Ff~~. They are either perennial or intermittent, do not have fish or the potential for fish, and are non-headwater streams.

[v. "Type O" streams have no natural surface water connection to Ttype S, Fs, Ff, or N.](#)

vi. Intentionally Created Streams. These are manmade streams defined as such in these regulations and do not include streams created as mitigation. Purposeful creation must be demonstrated to the Committee through documentation, photographs, statements, and/or other evidence. Intentionally created streams may include irrigation and drainage ditches, grass-lined swales, or other artificial watercourses unless they are used by salmonid fish or created for the purpose of stream mitigation.

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e. Classification of fish and wildlife habitat conservation areas shall be determined by the Department based on consideration of the following factors:

- i. Maps adopted pursuant to this chapter, including the fish and wildlife habitat conservation area core preservation areas map, Critical Area Wildlife Habitat Willows/Rose Hill Neighborhood Map, and stream classification map. These maps shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of fish and wildlife habitat conservation areas and streams shall be determined in the field by a qualified consultant according to the procedures, definitions, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail;
- ii. Department of Fish and Wildlife priority habitat and species maps;
- iii. Anadromous and resident salmonid distribution maps contained in the habitat-limiting factors reports published by the Washington State Conservation Commission;
- iv. Federal and state information and maps related to species of concern;
- v. Application of the criteria contained in these regulations; and
- vi. Consideration of the technical reports submitted by qualified consultants in connection with the applications subject to these regulations.

B. Stream Buffers Riparian Management Zones.

1. Stream buffers Riparian Management Zones, also referred to as stream buffers in these regulations, shall be sufficiently wide to achieve the full range of riparian and aquatic ecosystem functions, which include but are not limited to protection of instream fish habitat through control of temperature and sedimentation in streams, preservation of fish and wildlife habitat, and connection of riparian wildlife ~~habitat~~ to other habitats.

2. Stream buffers shall be measured perpendicular from the ordinary high water mark. Existing streams in pipes do not require buffers.

3. A 15-foot building setback is required from the edge of a riparian management zone.

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34. The following ~~stream buffers~~ Riparian Management Zones are established for streams:

Table 21.64.020 Riparian Management Zone (RMZ)	
<u>Riparian Stream Corridor Type</u>	<u>RMZ Width (feet)</u>
<u>Type S</u>	<u>200</u>
<u>Type Fs</u>	<u>150</u>
<u>Type Ff</u>	<u>100</u>
<u>Type N</u>	<u>50</u>
<u>Type O</u>	<u>25</u>

Table 21.64.020 Stream Buffers	
<u>Riparian Stream Corridor Classification</u>	<u>Stream Buffer Width (feet)</u>
Class I	
Sammamish River north of PSE powerline crossing	150-foot inner buffer + 50-foot outer buffer
Sammamish River south of PSE powerline crossing	150 feet
Bear Creek west of Avondale Road	150 feet
Bear Creek east of Avondale Road	150-foot inner buffer + 50-foot outer buffer
Evans Creek	150-foot inner buffer + 50-foot outer buffer
Class II	
Class II	100 feet + 50-foot outer buffer
Class III	
Class III	100 feet

Class IV	
Perennial	36 feet
Intermittent	25 feet

5. Temporary stream buffer impacts shall be mitigated at a ratio of at least 1:1 area for area.

6. Functionally Disconnected Buffer Area. Buffers may exclude areas that are functionally and effectively disconnected from the stream by an existing public or private road or legally established development, as determined by the Administrator. Functionally and effectively disconnected means the road or other significant development blocks the protective measures provided by a buffer.

47. Increased Stream Buffer Widths. The recommended stream buffer widths may be increased as follows:

- a. When the Department determines that the recommended width is insufficient to prevent habitat degradation and to protect the structure and functions of the habitat areas;
- b. When the frequently flooded area exceeds the recommended stream buffer width, the stream buffer shall extend to the outer edge of the frequently flooded area;
- c. When the stream buffer is within a landslide hazard area or its buffer, the stream buffer shall be the recommended distance, or the landslide hazard area buffer, whichever is greater. Similarly, if the stream buffer is within an erosion hazard area, the stream buffer shall be the recommended distance or the extent of the erosion hazard area.

58. Reduced Stream Buffer Widths. Stream buffer widths must meet the required width as described in the table in subsection B.3-4 above in this section. ~~This does not refer to stream buffer width averaging.~~ See below provisions under which stream buffer width averaging is permitted.

69. Stream Buffer Width Averaging. The Administrator may allow the recommended stream buffer width to be reduced in accordance with best available science only if:

- a. The width reductions will not reduce stream or habitat functions, including those of non-fish habitat;

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b. The width reduction will not degrade the habitat, including habitat for salmonid fisheries;

c. The proposal will provide ~~additional habitat protection~~ a net improvement in overall buffer ecological functions;

d. Averaging shall not preclude the opportunity for future recovery of structure and function;

~~de.~~ The total area contained in the stream buffer area after averaging is no less than that which would be contained within the standard stream buffer area; ~~and~~

~~ef.~~ The buffer width is not reduced to less than 25 percent of the standard stream buffer width or 2550 feet, whichever is greater; ~~and~~

g. The use of stream buffer averaging does not expand the buffer further onto any adjoining property not a part of the subject land development application.

~~7. For Class II streams, buffer averaging may be applied to the inner buffer. The following provisions apply to the inner buffer:~~

~~a. The width of the inner buffer shall not be reduced below 75 percent of the required inner buffer width at any point;~~

~~b. Encroachment shall not occur into the buffer of an associated wetland;~~

~~c. The area of the inner buffer after averaging shall be equivalent to the area of the inner buffer prior to averaging;~~

~~d. There is a net improvement in overall buffer ecological functions; and~~

~~e. Averaging shall not preclude the opportunity for future recovery of structure and function.~~

~~8. For Class I and II streams, maximum clearing and grading within the outer 50-foot buffer is 35 percent of the outer buffer area. Nothing in this provision shall be construed to require remediation of existing situations where the current clearing and grading is in excess of 35 percent. No net effective impervious surface may be created within this area.~~

910. No structures or improvements shall be permitted within the stream buffer, including buildings, decks, and docks, except as otherwise permitted or required under the City's adopted Shoreline Master Program, or under one of the following circumstances:

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- a. When the improvements are part of an approved rehabilitation or mitigation plan; or
- b. For construction of new road crossings and utilities, and accessory structures, when no feasible alternative location exists; or
- c. Trails, according to the following criteria:
 - i. Constructed of permeable materials. Gravel is considered impermeable.;
 - ii. Designed to minimize impact on the stream system;
 - iii. Of a maximum trail corridor width of six feet; ~~and~~
 - iv. Located within the outer ~~half~~25% of the buffer; i.e., the portion of the buffer that is farther away from the stream; See also RZC 21.68.180, Shoreline Access, for trail construction in shorelines of the state; and
 - v. Located to minimize the need for tree removal.
- d. Footbridges; or
- e. Minor educational facilities, such as informational signs; or
- f. Stormwater conveyance systems, provided that they are designed to maintain the buffers' functions and values; ~~or.~~

~~g. When improvements are part of an approved plan consistent with the no net effective impervious surface provisions of (8) above.~~

11. Mitigation Requirements. Mitigation measures shall achieve equivalent or greater ecological function including, but not limited to:

a. Habitat complexity, connectivity, and other biological functions;

b. Seasonal hydrological dynamics, water storage capacity and water quality; and

c. Geomorphic and habitat processes and functions.

~~10~~12. Businesses currently located in the stream buffers may continue to operate. A nonconforming use may be expanded provided the expansion does not create significant additional impacts to the stream buffers. Nonconforming structures may be maintained and repaired, and may be enlarged or expanded provided said enlargement does not extend the structure closer to the riparian stream corridor.

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~~11~~13. Where an approved City capital improvement project moves the ordinary high water mark of a stream from its pre-project location, the buffer width for adjacent properties shall continue to be measured from the pre-capital improvement project ordinary high-water mark.

~~12~~14. Nothing in this section shall be construed to require the removal of existing structures within stream buffers.

C. Alteration of Fish and Wildlife Habitat Conservation Areas - Generally. Alteration of fish and wildlife habitat conservation areas may only be permitted subject to the criteria in RZC 21.64.020.D, RZC 21.64.020.E, RZC 21.64.020.F, and RZC 21.64.020.C, RZC 21.64.040.CB, RZC 21.64.050.C, and RZC 21.64.020.D.

D. Alteration of Riparian Stream Corridors.

1. Relocation of a ~~Class I, II, or III~~Type S, Fs, or Ff riparian stream corridor in order to facilitate general site design will not be allowed. Relocation of these riparian stream corridors may take place only when it is part of an approved mitigation or rehabilitation plan, will result in equal or better habitat and water quality, and will not diminish the flow capacity of the stream. Type N and O streams may be relocated to facilitate general site design provided the criteria in this section are met.

2. Bridges shall be used to cross ~~Class I~~Type S streams.

3. Culverts are allowable only under the following circumstances:

a. Only in ~~Class II, III, and IV~~Type Fs, Ff, N, and O streams;

b. When fish passage and wildlife movement will not be impaired;

c. When the design criteria of the Washington State Department of Fish and Wildlife, Design of Road Culverts for Fish Passage, 2003, as revised are met; and

d. When culverts are designed to be resilient to future changes in stream conditions due to climate change; and

~~de~~. The applicant or successors shall, at all times, keep any culvert free of debris and sediment to allow free passage of the 100-year flow and associated debris water and, if applicable, all life stages of all fish species.

4. Stream-bank stabilization to protect new or existing structures from future channel migration is not permitted except when such stabilization is achieved through bioengineering or soft armoringstabilization techniques in accordance

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with an approved critical areas report. [The potential for channel migration, wind and wave action, and climate change shall be taken into consideration when determining if bank protection is warranted in the future.](#)

[5. All stream crossings shall be designed according to the Department of Fish and Wildlife's Water Crossing Design Guidelines, 2013, as revised.](#)

[56.](#) Construction of roads and minor road bridging may be permitted in accordance with an approved critical areas report subject to the following:

- 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. Roads in riparian habitat areas shall not run parallel to the water body;
- d. Crossings, where necessary, shall only occur as near to perpendicular with the water body as possible;
- e. Mitigation for impacts is provided pursuant to an approved mitigation plan; and
- f. Road bridges are designed according to the Department of Fish and Wildlife Design of Culverts for Fish Passage, 2003, [as revised](#), and the National Marine Fisheries Service Guidelines for Salmonid Passage at Stream Crossings, 2000, [as revised](#).

[67.](#) The City may require that a stream be removed from a culvert [and/or stormwater pipe](#) as a condition of approval, unless ~~the culvert~~ it is not detrimental to fish habitat or water quality, or removal would be detrimental to fish or wildlife habitat or to water quality. [The latter shall be documented by a qualified consultant based upon best available science and requires concurrence by the Department.](#)

E. Alteration of Fish and Wildlife Habitat Conservation Areas.

- 1. Alterations that create adverse impacts to core preservation areas shall be avoided, subject to Section 21.64.010.[SU](#), Critical Areas Reasonable Economic Use Exception - Private Property, and Section 21.64.010.[FU](#), Critical Areas Reasonable Use Exception - Public Project.
- 2. Species Protection. Species management recommendations for development impacting species of concern, priority species, and species of local importance

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shall be implemented. Management recommendations are based on the following factors: species recommendations of the Washington State Department of Fish and Wildlife; recommendations contained in the wildlife study submitted by a qualified consultant; and the nature and intensity of land uses and activities occurring on the site and on adjacent sites.

3. Alteration of Quality Habitat Areas. RZC 21.64.020.G, Fish and Wildlife Habitat Conservation Area Performance Standards, shall apply to quality habitat areas unless application of such standards would result in a significant adverse economic impact on the owner or developer.

F. Riparian Stream Corridor Performance Standards. The following standards apply to riparian stream corridor restoration and enhancement:

1. Use plants indigenous to the region (not introduced or foreign species);
2. Use plants adaptable to a broad range of water depths;
3. Plants should be commercially available or available from local sources;
4. Plant species high in food and cover value for fish and wildlife must be used;
5. Plant mostly perennial species;
6. Avoid committing significant areas of the site to species that have questionable potential for successful establishment;
7. Plant selection must be approved by a qualified consultant [and the City](#);
8. Substrate should consist of a minimum of one foot, in depth, of clean (uncontaminated with chemicals or solid/hazardous wastes) inorganic/organic materials;
9. Planting densities and placement of plants [shall follow those identified in REZC Appendix 1, Critical Areas Reporting Requirements](#) ~~should be determined by a qualified consultant~~ and shown on the design plans;
10. The planting plan must be approved by the Department;
11. Confine stockpiling to upland areas and ensure contract specifications should limit stockpiling of earthen materials to durations in accordance with City clearing and grading standards, unless otherwise approved by the Committee;
12. Planting instructions shall be submitted which describe proper placement, diversity, and spacing of seeds, tubers, bulbs, rhizomes, sprigs, plugs, and transplanted stock;

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13. Apply controlled-release nonphosphorus fertilizer at the time of planting and afterward only as plant conditions warrant (determined during the monitoring process);
14. Install an irrigation system, if necessary, for the initial establishment period;
15. Construction specifications and methods must be approved by a qualified consultant and the Department;
16. Construction management should occur by a qualified consultant and be inspected by the City; and
17. Limit the use of pesticides near streams.

G. Fish and Wildlife Habitat Conservation Area Performance Standards. The following standards shall apply to all sites where a species protected under this chapter has been identified. These standards shall also apply to sites where quality habitat has been identified unless application of any of these standards would result in a significant adverse economic impact on the owner or developer.

1. Relevant performance standards from RZC 21.64.020.F, Riparian Stream Corridor Performance Standards, and RZC 21.64.030.D, Wetlands Performance/Design Standards, as determined by the Department, shall be incorporated into mitigation plans.
2. The following additional mitigation measures shall be reflected in mitigation planning:
 - a. ~~Consider~~Incorporate habitat in site planning and design;
 - b. Locate buildings and structures in a manner that preserves and minimizes adverse impacts to important habitat areas;
 - c. Integrate retained habitat into open space and landscaping, consistent with the provisions of RZC 21.32, Landscaping;
 - d. Where possible, consolidate habitat and vegetated open space in contiguous blocks;
 - e. Locate habitat contiguous to other habitat, open space, or landscaped areas to contribute to a continuous system or corridor that provides connections to adjacent habitat areas;
 - f. Use native species in any landscaping of disturbed or undeveloped areas and in any enhancement of habitat or buffers;

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g. Emphasize heterogeneity and structural diversity of vegetation in landscaping;

[h. Limit soil compaction;](#)

[i. Remove fish barriers;](#)

[j. Increase off-channel habitat;](#)

[k. Increase presence of large wood;](#)

[h.l. Remove and/or control any noxious weeds or animals following state protocol and provide the City 48 hours' notice in advance of the work as defined by the City;](#) and

[im.](#) Preserve significant trees, preferably in groups, consistent with RZC 21.72, Tree Preservation, and with achieving the objectives of these standards.

3. Landscape plan shall be submitted consistent with the requirements of RZC 21.32.040, Landscape Area Requirements, and with the goals and standards of this chapter. The plan shall reflect the report prepared pursuant to RZC 21.64.010.G, Permit Process and Application Requirements.

(Ord. 2968)

Effective on: 4/16/2011

21.64.030 Wetlands.

A. Classification and Rating of Wetlands. To promote consistent application of the standards and requirements of this chapter, wetlands within the City of Redmond shall be classified according to their characteristics, function and value, and/or their sensitivity to disturbance. Wetlands shall be rated and regulated according to the categories defined by the Washington State Department of Ecology Wetland Rating System for Western Washington (Ecology Publication No. 14-06-029) as revised. This document contains the methods for determining the wetland category.

1. Wetland Classification. Wetlands, as defined by this chapter, shall be designated Category I, Category II, Category III, and Category IV.

a. Category I wetlands are those wetlands that 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. All

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wetlands with one or more of the following criteria shall be considered a Category I wetland:

- i. Wetlands that are identified by scientists of the Washington Natural Heritage Program/DNE as high-quality, relatively undisturbed wetlands, or wetlands that support state-listed threatened or endangered plants; or
 - ii. Bogs; or
 - iii. Mature and old-growth forested wetlands over one acre in size; or
 - iv. Wetlands that provide a very high level of functions as evidenced by a score of 23 points or more on the Western Washington Rating System form.
- b. Category II wetlands are those wetlands that provide high levels of some functions which are difficult to replace. Category II wetlands meet the following criteria:
- i. Wetlands scoring between 20 to 22 points on the Western Washington Rating System form; or
 - ii. Wetlands that do not meet the criteria of Category I.
- c. Category III wetlands are those wetlands that provide a moderate level of functions. They are typically more disturbed and have less diversity or are more isolated from other natural resources in the landscape. Category III wetlands meet the following criteria:
- i. Wetlands scoring between 16 to 19 points on the Western Washington Rating System form; or
 - ii. Wetlands that do not meet the criteria of Category I.
- d. Category IV wetlands are those wetlands that provide the lowest level of function. These wetlands score less than 16 points on the Western Washington Rating System form.

2. Classification of wetlands shall be determined by the Committee based on consideration of the following factors:

- a. Maps adopted pursuant to this chapter, including the wetland map, which identifies the approximate location and extent of wetlands. This map shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of wetlands shall be determined in the field by a qualified consultant according to the procedures, definition, and criteria established by

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this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail;

- b. National Wetlands Inventory Maps prepared by the U.S. Fish and Wildlife Service;
- c. Application of the criteria contained in these regulations; and
- d. Consideration of the technical reports submitted by qualified consultants in connection with applications subject to these regulations.

3. Identification and Delineation. Identification of wetlands and delineation of their boundaries pursuant to this Chapter shall be done in accordance with the approved federal wetland delineation manual and applicable regional supplement. All areas within the City meeting the wetland designation criteria in that procedure are hereby designated critical areas and are subject to the provisions of this chapter. Wetland delineations shall be documented on a ground verified map using either professional surveying methods or an equivalent professional method using GPS with sub-meter accuracy. Wetland delineations are valid for five years; after such date the City shall determine whether a revision or additional assessment is necessary.

B. Wetland Buffers.

Wetland buffers are vegetated areas adjacent to wetlands that can reduce impacts from adjacent land uses through physical, chemical, and biological processes. They provide their own habitat, water quality and quantity, and climate change mitigation values independent of wetlands.

1. Required buffer widths shall reflect the sensitivity of the particular wetland or the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the critical area.

2. Wetland buffers shall be measured perpendicular from the wetland edge as delineated and marked in the field.

3. A 15-foot building setback is required from the edge of a wetland buffer.

4. Wetland buffers shall be established as follows:

Table 21.64.030A.1 Wetland Buffer Requirements
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	Buffer Width (feet) Based on Habitat Score		
	3-5 points	6-7 points	8-9 points
Wetland Category			
Category I: Wetlands of High Conservation Value	250 N/A	250 N/A	300
Category I	100	150	300
Category II	100	150	300
Category III	80	150	300
Category IV	50	50	50

5. Wetlands that score six points or more for habitat function can use the buffers in Table 21.64.030A.2 below provided all of the below criteria are met. For wetlands that score five or fewer habitat points, only the measures in Table 21.64.030.A3 are required.

- a. A relatively undisturbed vegetation corridor at least 100 feet wide is protected between the wetland and:
 - i. A legally protected, relatively undisturbed and vegetated area (e.g. Priority Habitats, compensatory mitigation sites, wildlife areas/refuges, county and state parks where they have management plans with identified areas designated as Natural, Natural Forest, or Natural Area Preserve), or
 - ii. An area that is the site of a Watershed Project, identified within, and fully consistent with, a Watershed Plan as defined by RCW 89-08-460, or
 - iii. An area where development is prohibited according to the provisions of the City's Shoreline Master Program, or
 - iv. An area with equivalent habitat quality that has conservation status in perpetuity, in consultation with WDFW.

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- b. The corridor is permanently protected for the entire distance between the wetland and the shoreline or legally protected area by a conservation easement, deed restriction, or other legal site protection mechanisms.
- c. Presence or absence of the shoreline or Priority Habitat must be confirmed by a qualified biologist and Shoreline Administrator.
- d. The measures in Table 21.64.030A.3 are implemented, as applicable, to minimize impacts of the adjacent land uses.

Table 21.64.030A.2 Wetland Buffer Requirements When Table 21.64.030A.3 is Implemented <u>and</u> <u>a Habitat Corridor is Provided</u>			
Buffer Width Based on Habitat Score (feet)			
	Buffer Width (feet) Based on Habitat Score		
	3-5 points <u>(Corridor Not Required)</u>	6-7 points	8-9 points
Wetland Category			
Category I: Wetlands of High Conservation Value	190 <u>N/A</u>	190 <u>N/A</u>	225
Category I	75	110	225
Category II	75	110	225
Category III	60	110	225
40 <u>Category IV</u>	540	40	40

6. Developments that produce the listed disturbances in Table 21.64.030A.3 and are requesting a buffer reduction are required to address the disturbance through the use of all minimization measures identified below.

Table 21.64.030A.3 Requirement Measures to Minimize Impacts to Wetlands Measures Required		
<u>Examples of Disturbance</u>	<u>• Required Measure to Minimize Impacts Activities and uses that cause disturbance</u>	<u>Examples of measures to minimize impacts</u>
Lights	• <u>Direct lights away from wetland</u> • <u>Parking lots</u> • <u>Commercial/Industrial</u> • <u>Residential</u> • <u>Recreation (e.g., athletic fields)</u> • <u>Agricultural buildings</u>	• <u>Direct lights away from wetland</u> • <u>Only use lighting where necessary for public safety and keep lights off when not needed</u> • <u>Use motion-activated lights</u> • <u>Use full cut-off filters to cover light bulbs and direct light only where needed.</u> • <u>Limit use of blue-white colored lights in favor of red-amber hues</u> • <u>Use lower-intensity LED lighting</u> • <u>Dim light to the lowest acceptable intensity</u>
Noise	• <u>Locate activity that generates noise away from wetland</u> • <u>If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source</u> • <u>For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry, establish an additional 10' heavily vegetated buffer strip immediately adjacent to the outer wetland buffer</u> • <u>Commercial</u>	• <u>Locate activity that generates noise away from wetland</u> • <u>Construct a fence to reduce noise impacts on adjacent wetland and buffer</u> • <u>Plant a strip of dense shrub vegetation adjacent to wetland buffer.</u>

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	• Industrial • Recreation (e.g. athletic fields, bleachers, etc.) • Residential • Agriculture	
Toxic Runoff	• Parking Lots • Roads • Commercial/Industrial • 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 feet of wetland • Apply integrated pest management	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 feet of wetland • Apply integrated pest management (These examples are not necessarily adequate for minimizing toxic runoff if threatened or endangered species are present at the site.)
Stormwater Runoff	• Retrofit stormwater detention and treatment for roads and existing adjacent developments • Prevent channelized flow from lawns disturbed or developed areas that directly enter the buffer • Use Low Impact Development techniques • Parking lots • Roads • Residential areas • Commercial/Industrial • Recreation • Landscaping/lawns • Other impermeable surfaces, compacted soils, etc.	• Retrofit stormwater detention and treatment for roads and existing adjacent developments • Prevent channelized or sheet flow from lawns that directly enters the buffer • Infiltrate or treat, detain, and dispense new runoff from impervious surfaces and lawns

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Changes in Water Regime	• Infiltrate or treat, detain, and disperse into buffer <u>new the runoff from new impervious surfaces and new lawns</u>	
Pets and Human Disturbance	• Use fencing or plant dense vegetation to delineate buffers edge and to discourage disturbance using vegetation appropriate for the ecoregion • Place wetland and its buffer in a separate tract • <u>Residential areas</u> • <u>Recreation</u>	• <u>Use privacy fencing</u> • <u>Plant dense native vegetation to delineate buffer edge and to discourage disturbance</u> • <u>Place wetland and its buffer in a separate tract</u> • <u>Place signs around the wetland buffer every 50-200 feet, and for subdivisions place signs at the back of each residential lot</u> • <u>When platting new subdivisions, locate greenbelts, stormwater facilities, and other lower-intensity uses adjacent to wetland buffers</u>
Dust	• Use best management practices to control dust • <u>Tilled fields</u> • <u>Roads</u>	• <u>Use best management practices to control dust</u>

Elements in Table 21.64.030A.3 shall be fully documented by a qualified wetland professional.

7. The required buffer widths identified in the tables above assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions the buffer must either be planted to create the appropriate native plant community or be widened to ensure that the buffer provides adequate functions to protect the wetland.

38. The buffer for a wetland created, restored, or enhanced as compensation for approved wetland alterations shall be that required for the category of the wetland.

9. Temporary buffer impacts shall be mitigated at a ratio of at least 1:1, area for area.

10.Functionally Disconnected Buffer Area. 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 demonstrated in a report from a qualified wetland biologist and accepted by the Administrator. Functionally and effectively disconnected means the road or other significant development blocks the protective measures provided by a buffer.

411. Increased Buffer Widths. The Department may extend the width of the buffer in accordance with the recommendations of a qualified wetland professional and the best available science on a case-by-case basis when a larger buffer is necessary to protect wetland functions and values based on site-specific characteristics. The determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the wetland. The documentation must include the following criteria:

a. The wetland is used by a state or federally listed plant or animal species (species listed under WAC 220-610-010, 50 CFR 17-11, 50 CFR 17-12, or other federal or state regulations) or has essential or outstanding habitat for those species, or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or

b. The 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 WA Department of Natural Resources' Natural Heritage Program; or

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

cd. The adjacent land has minimal vegetation cover or slopes greater than 30 percent.

512. Wetland Buffer Width Averaging. Wetland buffer widths may be modified by averaging buffer widths to improve wetland protection as set forth herein. The Department may allow modification of the standardapplicable wetland buffer width in accordance with the best available science on a case-by-case basis by averaging buffer widths. Averaging buffer widths may only be allowed when all of the following conditions are met as demonstrated by a qualified wetland professional:

a. It will not reduce the functions or values;

b. The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation, and the wetland would benefit from increased buffers adjacent to the higher functioning area of habitat or more sensitive portion of the wetland and would

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not be adversely impacted by a decreased buffer adjacent to the lower-functioning or less-sensitive portion of the wetland;

c. The total area contained in the buffer area after averaging is equal to the area required in the standard required buffer without averaging;

d. The buffer width is not reduced more than 25 percent of the at its narrowest point is never less than 75% of the required buffer width or 75 feet for Category I and II wetlands, 50 feet for Category III wetlands, and 25 feet for Category IV wetlands, whichever is greater ~~and~~;

e. 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 wetland; and

f. The use of wetland buffer averaging does not expand the buffer further onto any adjoining property not a part of the subject land development application.

136. Above ground ~~5~~stormwater management facilities, such as biofiltration swales, and outfalls, may be located within the outer 25 percent of the buffer, provided that no other location is feasible, and the location of such facilities will not degrade the functions or values of the wetland. Stormwater ponds must be located outside of the required buffer. Underground vaults are also permitted within the outer 25 percent of the buffer provided that the maintenance access area lies outside of the buffer and the area above the vault is planted with native vegetation.

14. Drilling for utilities/utility corridors is permitted under a buffer, with entrance/exit portals located completely outside of the wetland buffer boundary, provided that the drilling does not alter the groundwater connection to the wetland or percolation of surface water down through the soil column. This shall be demonstrated by specific studies prepared by a licensed hydrologist.

C. Alteration of Wetlands.

1. Draining or disturbing a wetland is prohibited, except as provided for in this Chapter. Disturbances include changing the physical structure within a wetland, changing the amount and velocity of water, and changing the fluctuation of water levels.

2. Wetland alteration shall result in no net loss of wetland area, except where the following criteria are met:

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- a. The lost wetland area provides minimal functions and the mitigation action(s) results in a net gain in wetland functions as determined by a site-specific assessment; or
 - b. The lost wetland area provided minimal functions as determined by a site-specific functional assessment and other replacement habitats provide greater benefits to the functioning of the watershed, such as riparian habitat restoration and enhancement.
3. Category I Wetlands. Alterations of Category I wetlands shall be prohibited subject to the reasonable use provisions of this chapter.
4. Category II, III, and IV Wetlands.
 - a. Any proposed alteration and mitigation shall comply with the mitigation performance standards and requirements of these regulations; and
 - b. No net loss of wetland function and value may occur.
 - c. Where enhancement or replacement is proposed, ratios shall comply with the requirements of subsection C.7 below in this section.
5. Mitigation for alterations to wetlands shall achieve equivalent or greater biological functions. Mitigation plans shall be consistent with the Department of Ecology Guidance on Wetland Mitigation in Washington State, Part 2: Guidelines for Developing Freshwater Wetlands Mitigation Plans and Proposals, April, 2004, as revised.
6. Mitigation actions shall address functions affected by the alteration to achieve functional equivalency or improvement, and shall provide similar wetland functions as those lost except when:
 - a. The filled/impacted wetland provides minimal functions as determined by a site-specific function assessment; and the proposed mitigation action(s) will provide equal or greater functions, or will provide functions shown to be limiting within a watershed through a formal watershed assessment plan or protocol; or
 - b. Out-of-kind replacement will best meet formerly identified regional goals, such as replacement of historically diminished wetland types.
7. Mitigation actions that require compensation by replacing, enhancing, or substitution shall occur in the following order of preference:

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- a. Creating or establishing wetlands on disturbed upland sites, such as those with vegetative cover consisting primarily of exotic introduced species.
Preserving high-quality wetlands that are under imminent threat.
- b. RestoringReestablishing wetlands on upland sites that were formerly wetlands.
- c. Creating wetlands on disturbed upland sites, such as those with vegetative cover consisting primarily of exotic introduced species.Rehabilitating a degraded wetland by restoring its hydrological processes.
- d. Preserving high-quality wetlands that are under imminent threat.
- e. Enhancing significantly degraded wetlands to heighten, intensify, or improve specific wetland functions.

8. Wetland Replacement Ratios.

- a. Where wetland alterations are permitted by the City, the applicant shall restore or create areas of wetlands in order to compensate for wetland losses. Equivalent areas shall be determined according to acreage, function, type, location, timing factors, and projected success of restoration or creation.
- b. When creating or enhancing wetlands, the following acreage replacement ratios shall be used:

Table 21.64.030B Acreage Replacement Ratios				
Category and Type of Wetland	<u>Creation or Reestablishment or Creation</u>	<u>Rehabilitation (Restoration)</u>	<u>Enhancement Only</u> <u>Preservation</u>	<u>Enhancement</u>
Category I Forested	6:1	12:1	24:1	<u>24:1</u>
Category I based on function	4:1	8:1	16:1	<u>16:1</u>
Category II	3:1	6:1	12:1	<u>12:1</u>
Category III	2:1	4:1	8:1	<u>8:1</u>

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Category IV	1.5:1	3:1	6:1	6:1
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c. These ratios do not apply to the use of credits from a state certified wetland mitigation bank. When credits from a certified bank are used, replacement ratios shall be consistent with the requirements of the [certified](#) mitigation banking instrument.

d. Enhanced and created wetlands shall be appropriately classified and buffered.

[e. The following areas within a proposed compensation site shall not contribute to satisfying the requirements for compensatory mitigation:](#)

[i. Easements for utility corridors, stormwater facilities, rights-of-way, and streams conveyed underground.](#)

[ii. Driveways](#)

[iii. Roads](#)

[iv. Any paved or graveled areas intended to convey vehicle or foot traffic.](#)

[9. Indirect Impacts. Indirect impacts, also known as paper fill, are adverse effects on wetlands that occur outside the footprint of direct impacts. Indirect impacts result in a reduction of wetland function, and compensatory mitigation is needed to offset these losses.](#)

[a. Determine the extent of indirect impact by taking the required buffer width from the edge of the proposed development extending into the wetland. The superimposed area within the wetland would be the area of indirect impacts.](#)

[b. Compensation for indirect impacts shall be one-half of the recommended ratio for permanent impacts identified in Table 21.64.030B. If more than half of the wetland is affected by indirect impacts, the replacement ratios established in Table 21.64.030B shall be used.](#)

[10. Temporary Impacts](#)

[a. Short-term temporary impacts last for a limited time, and functions return to pre-impact performance within about a year or within one growing season. Wetland impacts are considered short term only if it involves emergent vegetation or cutting shrubs without removing roots. Mitigation for short-term temporary impacts occur at a 1:1 replacement ratio returning the area to pre-project conditions and planting with native species.](#)

b. Long-term temporary impacts affect functions that will eventually be restored or recover over time, but not within a year or so. Long-term temporary impacts carry a risk of permanent loss, such as when soil structure is altered by deep excavation or compacted by equipment. Mitigation for long-term temporary impacts lasting less than two years shall be one quarter of the require replacement ratios identified in Table 21.64.030B. Restoration activities shall be completed within two years. Long-term temporary impacts lasting longer than two years shall mitigate at the replacement ratios identified in Table 21.64.030B.

D. Wetlands Performance/Design Standards.

1. Use plants indigenous to the Pacific Northwest region (not introduced or foreign species) Plantings used in mitigation actions shall be native species appropriate to the ecoregion;
2. Use plants adaptable to a broad range of water depths;
3. Plants should be commercially available or available from local sources;
4. Plant species high in food and cover value for fish and wildlife must be used;
5. Avoid committing significant areas of the site to species that have questionable potential for successful establishment;
6. Plant selection must be approved by a qualified wetland specialist;
7. Water depth is not to exceed six and one-half feet (two meters);
8. The grade or slope that water flows through the wetland is not to exceed six percent for wetland creation sites;
9. Slopes within the wetland basin and the buffer zone may not be steeper than 3:1 (horizontal to vertical) for wetland creation sites;
10. Substrate should consist of a minimum of one foot, in depth, of clean (uncontaminated with chemicals or solid/hazardous wastes) inorganic/organic materials for wetland creation sites;
11. Planting densities and placement of plants should be determined by a qualified wetland professional and shown on the design plans;
12. The planting plan must be approved by the Department;

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13. Confine stockpiling to upland areas and ensure contract specifications limit stockpiling of earthen materials to durations in accordance with City clearing and grading standards, unless otherwise approved by the Committee;
14. Planting instructions shall be submitted which describe proper placement, diversity, and spacing of seeds, tubers, bulbs, rhizomes, sprigs, plugs, and transplanted stock;
15. Apply controlled-release, non-phosphorus fertilizer at the time of planting and afterward only as plant conditions warrant (determined during the monitoring process);
16. Install an irrigation system, if necessary, for the initial establishment period;
17. Construction specifications and methods must be approved by a qualified consultant and the Department; and
18. Construction management should occur by a qualified consultant and be inspected by the City.

E. Other Agencies. Compliance with this Chapter does not necessarily constitute compliance with other federal and state regulations. The applicant is responsible for securing and complying with these latter regulations, such as Hydraulic Project Approvals, Clean Water Act Section 404 and 401 certifications, and Administrative Orders.

(Ord. 2803; Ord. 2968)

Effective on: 10/17/2015

21.64.040 Frequently Flooded Areas.

A. Classification and Rating of Frequently Flooded Areas. To promote consistent application of the standards and requirements of this chapter, frequently flooded areas within the city of Redmond shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance.

1. Frequently Flooded Areas Classifications. Frequently flooded areas shall be classified according to the criteria in this section.

- a. Floodplain. The total area subject to inundation by the base flood ~~(the flood that has a one percent chance of occurring in any given year).~~

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b. Flood Fringe. The portion of the floodplain outside of the floodway which is generally covered by flood waters during the base flood and is generally associated with standing water rather than rapidly flowing water.

c. FEMA Floodway. The channel of the stream and that portion of the adjoining floodplain which is necessary to contain and discharge the FEMA base flood flow without increasing the FEMA base flood elevation more than one foot.

d. Zero-Rise Floodway. The channel of the stream and that portion of the adjoining floodplain which is necessary to contain and discharge the base flood flow without increasing the base flood elevation. The zero-rise floodway will always include the FEMA floodway.

2. Classification of frequently flooded areas shall be determined by the Committee based on consideration of the following factors:

a. Maps adopted pursuant to this chapter including the frequently flooded areas map, which identifies the approximate location and extent of the 100-year floodplain. This map shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of frequently flooded areas shall be determined in the field by a qualified consultant according to the procedures, definitions, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail. The City will employ hydraulic models to define the extent of the zero-rise floodway. If the zero-rise floodway has not yet been defined for the property in question, the applicant will be responsible for modeling the base flood elevation and delineating the extent of the zero-rise floodway, consistent with the assumptions in the Bear Creek Basin Plan as adopted by the City. In the absence of a City hydraulic model, FEMA data will be acceptable;[RMC](#)

b. [Digital](#) Flood Insurance Rate Maps published by the Federal Emergency Management Agency;

c. Application of the criteria contained in these regulations; and

d. Consideration of the technical reports submitted by qualified consultants in connection with applications subject to these regulations.

B. Alteration of Frequently Flooded Areas. Alteration of frequently flooded areas may only be permitted subject to the criteria in RZC 21.64.020.D [through](#), RZC

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21.64.020.E, RZC 21.64.030.C, RZC 21.64.040.C, RZC 21.64.050.B, and RZC 21.64.060.D.

C. Flood Hazard Areas – Development Standards. No structure or land shall be constructed, located, extended, covered, or altered without full compliance with RMC Chapter 15.04, Flood Control. Temporary floodplain impacts occurring between October 1 and April 30 may require additional analysis showing Frequently Flooded Areas requirements are met.

1. Flood Hazard Areas Generally. For all new structures or substantial improvements, the applicant must provide certification by a qualified consultant of the actual as-built elevation of the lowest floor and all machinery and equipment servicing these structures, including basement, and, if applicable, the actual as-built elevation to which the structure is flood-proofed. If the structure has a basement, this must be indicated.

2. The Flood Fringe Outside the Zero-Rise Floodway.

a. Development shall not reduce the effective base flood storage volume of the floodplain. Grading or other activity which would reduce the effective storage volume must be mitigated by creating compensatory storage on the site. ~~Developments in Downtown in the Sammamish River floodplain have the option to participate in the city's Sammamish River Regional Compensatory Floodplain Storage Project. This option allows developers to compensate for on-site floodplain fill volume in this regional project by having their storage volume allocated to this project.~~

b. No structure shall be allowed which would be at risk due to stream bank destabilization, including that associated with channel relocation or meandering.

c. All elevated construction must be designed and certified by a professional structural engineer registered in the State of Washington and must be approved by the City prior to construction.

d. Subdivisions, short subdivisions, binding site plans, site plan review, special Land Use Permits, and general Land Use Permits shall follow the following requirements:

i. New building lots shall contain 3,600 square feet or more of buildable land outside the zero-rise floodway and building setback lines shall be shown on the face of the plat to restrict permanent structures to the area so defined;

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- ii. All utilities and facilities, such as sewer, gas, electrical, telephone, cable communications, and water systems, shall be located and constructed consistent with subsection C.2.i of this section;
- iii. Base flood data and flood hazard notes shall be shown on the face of the recorded plat, including but not limited to the base flood elevation, required flood protection elevations, and the boundaries of the floodplain and the floodway, if determined; and
- iv. The following note shall be recorded with the King County Department of Records and Elections for all affected lots:

NOTICE

Lots and structures located within flood hazard areas may be inaccessible by emergency vehicles during flood events.

Residents and property owners should take appropriate advance precautions.

e. New residential construction and substantial improvement shall meet the following criteria:

- i. The lowest floor and all machinery and equipment servicing the structure, including basements and below-grade crawl spaces per FEMA regulations, shall be elevated to the flood protection elevation.
- ii. Portions of the building that are below the flood protection elevation shall not be fully enclosed. The areas below the lowest floor shall be designed to automatically equalize hydrodynamic flood forces on exterior walls by allowing the entry and exit of floodwaters. Designs for meeting this requirement must meet or exceed the following minimum criteria:
 - A. Minimum of two openings on opposite walls having a total open area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;
 - B. The bottom of all openings shall be no higher than one foot above grade.
- iii. Openings may be equipped with screens, louvers, or other coverings or devices, provided that they permit the unrestricted entry and exit of floodwaters.

iv. A garage attached to a residential structure, constructed with the garage door slab below the BFE, must be designed and allow for automatic entry and exit of floodwaters.

f. New nonresidential construction and substantial improvement of any existing commercial, industrial, or other nonresidential structure shall meet the elevation requirements of residential construction.

g. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

h. For all mobile and manufactured homes, all standards for flood hazard protection for conventional residential construction shall apply. All manufactured and mobile homes must be anchored and by providing over-the-top and frame ties to ground anchors. The shall be installed using methods and practices that minimize flood damage. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

i. Utilities shall meet the following criteria:

i. All new and replacement utilities, including sewage treatment facilities, shall be flood-proofed to, or elevated above, the flood protection elevation.

ii. New on-site sewage disposal systems shall be located outside the limits of the 100-year floodplain. The installation of new on-site sewage disposal systems in the floodplain is prohibited.

iii. Sewage and agricultural waste storage facilities shall be flood-proofed to the base flood elevation plus three feet.

iv. Aboveground utility transmission lines, other than electrical transmission lines, shall only be allowed for the transport of nonhazardous substances.

v. Buried utility transmission lines transporting hazardous substances (as defined by the Washington State Hazardous Waste Management Act in RCW 70.105.005) shall be buried at a minimum depth of four feet below the maximum depth of scour for the base flood predicted by a professional civil engineer licensed by the State of Washington and shall achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated.

j. Critical facilities may be allowed within the flood fringe of the floodplain. All such proposed uses shall be evaluated as part of the underlying land use permit. Critical facilities constructed within the flood fringe shall have the

lowest floor elevated to three or more feet above the base flood elevation. Flood-proofing and sealing measures must be taken to ensure that hazardous or toxic substances will not be displaced by or released into floodwaters. Access routes elevated to the flood protection elevation shall be provided to all critical facilities to the nearest maintained public street or roadway located outside of the floodplain.

k. The Committee shall review all Land Use Permits to determine that all necessary permits have been obtained as required by federal or state law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334, as required by Section 60.3(a)(2) of 44 CFR.

l. Storage and containment of hazardous or dangerous chemicals, substances or materials, as those terms are determined by applicable state and federal regulations, shall be prohibited, provided that existing uses involving storage, etc., shall conform to the flood protection elevation when applying for any permit.

3. Development in the Zero-Rise Floodway.

a. Activities allowed within the zero-rise floodway must conform to the requirements of this section, as well as the requirements that apply to the flood fringe outside the zero-rise floodway as identified in subsection C.2 of this section.

b. No development activity shall reduce the effective storage volume of the floodplain.

c. No development, including permitted new construction or reconstruction, shall cause any increase in the zero-rise base flood elevation.

d. No temporary structures or storage of materials hazardous to public health, safety, and welfare shall be permitted in the zero-rise floodway.

e. Construction of new residential or nonresidential structures is permitted in the zero-rise floodway only in the following circumstances:

i. The structure must be on a lot legally in existence at the time the ordinance codified in this chapter becomes effective;

ii. The structure must be on a lot that contains less than 3,600 square feet of buildable land outside the zero-rise floodway; and

iii. The structure must meet the construction standards set forth in subsections C.2 and C.3.b, C.3.c, and C.3.d of this section.

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- f. New lots that include part of the zero-rise floodway may be created only if the lots meet the requirements of subsection C.2.d of this section and administrative rules, or are declared as nonbuilding lots on the face of the plat.
- g. The following circumstances are presumed to produce no increase in base flood elevation and shall not require special studies to establish this fact:
 - i. Substantial improvement on existing residential structures outside the zero-rise floodway where the building footprint is not increased.
 - ii. Substantial improvement of an existing residential structure shall meet the requirements for new residential construction set forth in subsection C.2.e of this section.
- h. Reconstruction of an existing residential structure shall meet the requirements for new residential construction set forth in subsection C.2.e of this section
- i. Utilities and roads are permitted in the zero-rise floodway only when no other location is practicable, or when mitigating measures achieve zero-rise floodway elevations, and shall meet the minimum criteria set forth in subsection C.2.i of this section and the following requirements:
 - i. Construction of sewage treatment facilities shall be prohibited.
 - ii. Utility transmission lines transporting hazardous substances shall be buried at a minimum depth of four feet below the maximum depth of scour for the base flood as predicted by a professional civil engineer licensed by the State of Washington, and shall achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated.
- j. Critical facilities shall not be constructed in the zero-rise floodway.
- k. Floodway Dependent Structures. Installations or structures that are floodway dependent may be located in the floodway, provided that the development proposal receives approval from all other agencies with jurisdiction and meets all standards in RZC 21.64.020.D, Alteration of Riparian Stream Corridors, and 21.64.030.C, Alteration of Wetlands. Such installations include but are not limited to:
 - i. Dams or diversions for water supply, flood control, hydroelectric production, irrigation, or fisheries enhancement;
 - ii. Flood damage reduction facilities, such as levees and pumping stations;

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- iii. Stream bank stabilization structures where no feasible alternative exists to protecting public or private property;
- iv. Stormwater conveyance facilities subject to the requirements of the development standards for streams and wetlands, and other relevant City of Redmond development standards;
- v. Boat launches, docks, and related recreation structures;
- vi. Bridge piers and abutments; and
- vii. Fisheries enhancement or stream restoration projects.

~~i. Development of the area located downstream of Redmond Way on Bear Creek may be allowed:~~

- ~~i. when mitigating measures achieve zero-rise floodway elevations, or~~
- ~~ii. when surface water elevations are not increased over one foot provided no significant unmitigated upstream, downstream, or on-site environmental impacts are created.~~

4. Development in the FEMA Floodway.

- a. Construction or placement of new residential or nonresidential structures is prohibited within the FEMA floodway. Shoreline protective structures, bridges, roads, trails, and railroads are permitted within the FEMA floodway.
- b. No development subject to these regulations, including permitted new construction or reconstruction, shall cause any increase in the FEMA base flood elevation.
- c. Substantial improvement of an existing residential structure located in the floodway must meet the requirements set out in WAC 173-158-070 as amended. Such substantial improvement is presumed to produce no increase in base flood elevation and shall not require special studies to establish this fact.

(Ord. 2663; Ord. 2958)

Effective on: 4/27/2019

21.64.050 Critical Aquifer Recharge Areas.

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A. Classification and Rating of Critical Aquifer Recharge Areas. To promote consistent application of the standards and requirements of this chapter, Critical Aquifer Recharge Areas within the City of Redmond shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance.

1. Critical Aquifer Recharge Areas Classification. Critical aquifer recharge areas are those areas with a critical recharging effect on aquifers used for potable water. Wellhead protection involves the management of activities that have a potential to degrade the quality of groundwater produced by a supply well. The City of Redmond is classified into two aquifer recharge areas that are based on proximity to and travel time of groundwater to the City’s public water source wells, and are as follows:

- a. Critical Aquifer Recharge Area I is the land area overlying the aquifer in which it will take a maximum of five years for the groundwater to reach any public water source well owned by the City.
- b. Critical Aquifer Recharge Area II is the land area overlying the aquifer in which it will take ~~over five~~ to ten years to reach any public water source well owned by the City as well as lands outside the 10-year groundwater capture zone that have a critical recharging effect on the aquifer.

2. Classification of Critical Aquifer Recharge Areas shall be determined in accordance with the City’s adopted Critical Aquifer Recharge Areas Map.

3. Relationship of Critical Aquifer Recharge Areas to Wellhead Protection Zones (WAC 246-290). The City of Redmond Water System Plan and Washington State Department of Health require public water supply wells have wellhead protection zones delineated based on the time of travel of groundwater to a public drinking water supply well. The relationship between the Wellhead Protection Zones and the Critical Aquifer Recharge Areas are as follows:

Table 21.64.050A		
Wellhead Protection Zone	Wellhead Protection Zone Time of Travel	Critical Aquifer Recharge Areas
Sanitary Control Area	150 foot radius, no horizontal time travel	Critical Aquifer Recharge Area 1
Wellhead Protection Zone 1	6-month and 1-year horizontal time of travel	

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Wellhead Protection Zone 2	5-year horizontal time of travel	
Wellhead Protection Zone 3	10-year horizontal time of travel	Critical Aquifer Recharge Area II
Wellhead Protection Zone 4	Area outside of the 10-year time of travel that has a critical recharging effect on the aquifer.	Critical Aquifer Recharge Area II (includes all other lands providing critical recharging effect on the aquifer)

B. Alteration of Critical Aquifer Recharge Areas. Alteration of critical aquifer recharge areas may only be permitted subject to the criteria in RZC 21.64.020.D, RZC 21.64.020.E, RZC 21.64.030.C, RZC 21.64.040.B, RZC 21.64.050.B, and RZC 21.64.060.D. [All lands within designated critical aquifer recharge areas are subject to full compliance with RMC Chapter 13.07, Wellhead Protection.](#)

C. Prohibited Land Uses and Activities in Critical Aquifer Recharge Areas I and II.

1. Land uses or activities that pose a hazard to the City's groundwater resources, resulting from storing, handling, treating, using, producing, recycling, or disposing of hazardous materials or other deleterious substances, shall be prohibited in Critical Aquifer Recharge Area I. Legal preexisting uses may continue to operate, [however, they may not intensify the existing use](#). These land uses and activities include:

- a. Large on-site sewage systems, as defined in WAC Chapter 246-272A;
- b. Hazardous liquid pipelines as defined in RCW Chapter 81.88 and RZC 21.78;
- c. Solid waste landfills;
- d. Solid waste transfer stations;
- e. Liquid petroleum refining, reprocessing, and storage;
- f. Bulk storage facilities as defined in RZC 21.78, Definitions;
- g. Hazardous waste treatment, storage, and disposal facilities except those defined under permit by rule for industrial wastewater treatment processes per WAC 173-303-802(5)(c);

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- h. Chemical manufacturing, including but not limited to organic and inorganic chemicals, plastics and resins, pharmaceuticals, cleaning compounds, paints and lacquers, and agricultural chemicals;
- i. Dry cleaning establishments using the solvent perchloroethylene;
- j. Primary and secondary metal industries that manufacture, produce, smelt, or refine ferrous and nonferrous metals from molten materials;
- k. Wood preserving and wood products preserving;
- l. Mobile fleet fueling operations;
- m. Class I, Class III, Class IV, and the following types of Class V wells: 5A7, 5F1, 5D3, 5D4, 5W9, 5W10, 5W11, 5W31, 5X13, 5X14, 5X15, 5W20, 5X28, and 5N24 as regulated under RCW Chapter 90.48 and WAC Chapters 173-200 and 173-218, as amended;
- n. Permanent dewatering of the aquifer;
- o. Irrigation with graywater;
- p. Reclaimed or recycled water use with the exception of uses that discharge to the sanitary sewer;
- q. Sand, gravel, and hard rock mining;
- r. Mining of any type below the upper surface of the saturated groundwater;
- s. Disposal of radioactive wastes, as defined in chapter 43.200 RCW;
- t. Hydrocarbon extraction;
- u. Golf courses;
- v. Cemeteries;
- w. Vehicle wrecking yards;
- x. Vehicle towing yards that store vehicles on permeable surfaces; and
- y. Metal recycling facilities with outdoor storage and handling activities.

2. The following are prohibited in Critical Aquifer Recharge Area II. Legal preexisting uses may continue to operate, [however, they may not intensify the existing use](#):

a. Permanent dewatering; and

b. Reclaimed or recycled water use with the exception of uses that discharge to the sanitary sewer.

3. Other land uses and activities [in Critical Aquifer Recharge Area I and Critical Aquifer Recharge Area II](#) that the City determines would pose a significant groundwater hazard to the City's groundwater supply [are prohibited](#).

D. Critical Aquifer Recharge Areas Performance Standards. - Development or redevelopment in the Critical Aquifer Recharge Areas shall implement the following performance standards:

1. Any uses or activities locating in Critical Aquifer Recharge Areas which involve storing, handling, treating, using, producing, recycling, or disposing of hazardous materials or other deleterious substances shall comply with the following standards that apply to the Critical Aquifer Recharge Area in which they are located. Single-family residential uses of hazardous materials or deleterious substances are exempt from the following standards.

2. If a property is located in or straddles more than one Critical Aquifer Recharge Area, the Director of Public Works shall determine which standards shall apply based on an assessment evaluation of the risk posed by the facility or activity. The assessment evaluation shall include, but not be limited to: (a) the location, type, and quantity of the hazardous materials or deleterious substances on the property; (b) the geographic and geologic characteristics of the site; and (c) the type and location of infiltration on the site.

3. Development or redevelopment within Critical Aquifer Recharge Area I and II. Any facility or activity shall implement the following performance standards:

a. Secondary Containment.

i. The owner or operator of any facility or activity shall provide secondary containment for hazardous materials or other deleterious substances in aggregate quantities equal to or greater than 20 gallons liquid or 200 pounds solid or in quantities specified in the Redmond Fire Code, RMC Chapter 15.06, whichever is smaller.

ii. All seams and cracks on Portland cement concrete pad containment or fueling/maintenance areas must be sealed with chemical resistant sealers. Inspect and repair the Portland cement concrete pad annually to ensure the functional integrity of the pad is maintained to prevent fuel and/or chemicals from reaching the ground.

- iii. Facilities or activities located in Critical Aquifer Recharge Area II are exempt from secondary containment requirements in item i above for indoor storage of hazardous materials and deleterious substances. Requirements in RMC 15.06 still apply.
- b. Vehicle Fueling, vehicle and equipment maintenance facilities, and wrecked vehicle storage facilities shall have the following to control release of hazardous materials to the soil/groundwater during operations:
 - i. Underground storage tank pits and trenches for fuel piping will be contained with tertiary containment liner and tank pit observation ports shall be installed in a low point in the pit.
 - ii. Fueling facility shall be staffed with Class 3 trained staff on site at all times during fueling operations.
 - iii. All vehicle fueling and vehicle and equipment maintenance shall be conducted under cover on a Portland cement concrete or equivalent pad treated with chemical resistant sealer and drain to the sanitary sewer or dead-end sump.
- c. Loading and Unloading Areas. Secondary containment or equivalent best management practices, as approved by the City, shall be required at loading and unloading areas that store, handle, treat, use, produce, recycle, or dispose of hazardous materials or other deleterious substances in aggregate quantities equal to or greater than 20 gallons liquid or 200 pounds solid.
- d. Stormwater Infiltration Systems. Design and construction of stormwater infiltration systems must address site-specific risks of releases posed by all hazardous materials on-site. These risks may be mitigated by physical design means or equivalent best management practices. Design and construction of said stormwater infiltration systems shall also be in accordance with RMC Chapter 15.24.020.
- e. Well construction and operation shall comply with the standards in RMC 15.24.095.
- f. Fill Materials. Fill material shall comply with the standards in RMC 15.24.095.
- g. Cathodic Protection Wells. Design for cathodic protection wells shall be submitted to the City for review and approval prior to initiation of drilling. Cathodic protection wells shall be constructed such that the following does not occur:

- i. Vertical cross-connection of aquifers normally separated by confining geologic units;
 - ii. Migration of contaminated surface water along improperly sealed well borings or casings;
 - iii. Introduction of electrolytes or related solutions into the subsurface; and
 - iv. Any of the above conditions caused by improperly abandoned cathodic protection wells that are no longer in use.
- h. Underground Hydraulic Elevator Cylinders. All underground hydraulic elevator pressure cylinders shall be encased in an outer plastic casing constructed of schedule 40 or thicker polyethylene or polyvinyl chloride (PVS) pipe or equivalent. The plastic casing shall be capped at the bottom and all joints shall be solvent or heat welded to ensure water tightness. The neck of the plastic casing shall provide a means of inspection to monitor the annulus between the pressurized hydraulic elevator cylinders and protective plastic casing. Vegetable oil shall be used for hydraulic fluid in elevator cylinders.

i. Geothermal Well Systems. Geothermal wells within CARA I and II must meet the following requirements:

- i. No deep geothermal wells that penetrate the Redmond Alluvial Aquifer;
- ii. Closed loop system with potable water or food safe additives only in well;
- iii. Minimum standards for vertical borings constructed for the purpose of installing a closed loop heat exchange system per WAC 173-160-453;
- iv. Leak or pressure testing of wells per WAC 173-160-453 (c). If any leaks are detected then well must be decommissioned;
- v. Geothermal systems will not be allowed in contaminated groundwater or soils or near a contaminated site;
- vi. A heat study may be required to ensure no geochemical change to Redmond's drinking water aquifer.

4. Relationship of Critical Aquifer Recharge Areas to the Groundwater Protection Incentive Program for Existing Stormwater Infiltration Modifications (RMC 13.07.115).

a. Except as provided in subsection (b) below, the construction or location of stormwater infiltration system modifications to protect groundwater shall not be permitted to alter, expand, or intensify any legal nonconforming use or structure in a manner that increases the degree of nonconformity. However, upon the Technical Committee's approval of a modification to a stormwater infiltration system protective of groundwater, the improvement may be constructed without the property owner having to meet the following City codes:

i. The provisions of RZC 21.64 regarding critical areas buffers, if the footprint of the original system protective of groundwater is located with the same critical area buffer, and it can be demonstrated through the best available science that there will be no significant adverse impacts to the critical area and its buffer;

ii. The provisions of RZC 21.76.100.F.9.b and F.9.c requiring nonconforming structures, landscaping, and pedestrian system areas to be brought into compliance with current building, fire, or land use codes, to the extent that the requirement is triggered by the value or design of the incremental environmental improvement to a system protective of groundwater; and

iii. The provisions of RZC 21.64.050.C.1 prohibiting the redevelopment of certain land uses and activities in Critical Aquifer Recharge Areas I and II.

b. Improvements required through the groundwater protection incentive program in order to mitigate potential stormwater impacts to groundwater may alter, expand, or intensify existing legal nonconforming uses and structures in a way that increases the degree of nonconformity where the Technical Committee determines that no economically, technologically, and environmentally reasonable alternative exists that meets the requirement to protect groundwater and fulfills the operational needs of the existing development served by the stormwater infiltration system. By way of example and not by way of limitation, groundwater protection incentive program improvements may alter, expand, or intensify the degree of nonconformity of existing landscaping, parking, and covered storage structures that are legally nonconforming, as long as the requirements of this subsection are met.

5. Phase 1 Environmental Site Assessments (ESA) required. Any development or redevelopment project that disturbs 5,000 square feet or more soil in the Critical

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Aquifer Recharge Area shall include a Phase 1 ESA with the project's Critical Area Report.

6. Monitoring Required at High Risk Sites. Any land use in the Critical Aquifer Recharge Areas that poses a high risk of contaminating groundwater, in the opinion of the City, will be required to be equipped for long term monitoring of groundwater. For example, land uses including fueling are considered high risk.

(Ord. 2704; Ord. 2957; Ord. 2968)

Effective on: 4/27/2019

21.64.060 Geologically Hazardous Areas.

A. Classification and Rating of Geologically Hazardous Areas. To promote consistent application of the standards and requirements of this chapter, geologically hazardous areas within the City of Redmond shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance.

1. Geologically Hazardous Area Classifications. Geologically hazardous areas shall be classified according to the criteria in this section.

a. Erosion Hazard Areas. Erosion hazard areas are those areas containing soils which, according to the U.S. Department of Agriculture Natural Resource Conservation Service Soil Survey Program, may experience significant erosion. Erosion Hazard Areas include areas likely to become unstable, such as steep slopes, areas with unconsolidated soils, and channel migration zones. . Erosion hazard areas are lands or areas underlain by soils identified by the U.S. Department of Agriculture Soil Conservation Service (SCS) as having "severe" or "very severe" rill and inter-rill erosion hazards. This includes, but is not limited to, the following group of soils when they occur on slopes of 15 percent or greater: Alderwood-Kitsap (AkF), Alderwood gravelly sandy loam (AgD), Kitsap silt loam (KpD), Everett (EvD), and Indianola (InD):

b. Landslide Hazard Areas. Landslide hazard areas are areas potentially include areas subject to significant or severe risk of landslides based on a combination of geologic, topographic, and hydrogeologic factors. They include areas susceptible because of any combination of bedrock, soil, slope, slope aspect, structure, hydrology, or other factors. They are areas of the landscape that are at a high risk of failure or that presently exhibit downslope movement of soil and/or rocks and that are separated from the underlying stationary part of the slope by a definite plane of separation. The plane of separation may be thick or thin and may be composed of multiple failure zones

~~depending on local conditions, including soil type, slope gradient, and groundwater regime.~~

Landslide hazard areas include:

i. Areas of historic failures, such as:

A. Areas designated as quaternary slumps, [earthflows, mudslides](#) or landslides on maps published by the United States Geologic Survey (USGS) ~~or WA. Department of Natural Resources~~; or

B. Those areas designated by the United States Department of Agriculture (USDA) [Soil Natural Resources](#) Conservation Service ([SCSNRCS](#)) as having a ~~"severe"~~[significant](#) limitation for building site development.

ii. Areas containing a combination of slopes steeper than 15 percent, springs or groundwater seepage, and hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock;

iii. 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 that epoch;

iv. Slopes that are parallel or subparallel to planes of weakness [\(such as bedding planes, joint systems, and fault planes\)](#) in subsurface materials;

v. Slopes having gradients steeper than 80 percent subject to rockfall during seismic shaking;

vi. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action [including stream channel migration zones](#); or

vii. Any area with a slope [of 40 percent or steeper](#) ~~and~~ with a vertical relief of 10 feet or more [except areas composed of bedrock](#).

c. Seismic Hazard Areas. Seismic hazard areas are lands subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement, soil liquefaction, or surface faulting. [Settlement and soil liquefaction conditions occur in areas underlain by cohesionless soils of low density, typically in association with a shallow groundwater table.](#)

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2. Classification of geologically hazardous areas shall be determined by the Committee based on consideration of the following factors:

a. Maps adopted pursuant to this chapter include the landslide hazard area, erosion hazard area, and seismic hazard areas maps, which identify the approximate location and extent of these hazard areas. These maps shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of geologically hazardous areas shall be determined in the field by a qualified consultant, surveyed, and then mapped according to the procedures, definitions, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail;

b. Maps published by other governmental agencies such as:

i. USGS landslide hazard and seismic hazard maps;

ii. Department of Natural Resources (DNR) seismic hazard maps for western Washington and slope stability maps;

iii. [Washington Geological Services \(WGS\) Geologic Information Portal interactive database.](#)

c. Application of the criteria contained in these regulations; and

d. Consideration of the technical reports submitted by qualified consultants in connection with applications subject to these regulations.

B. Landslide Hazard Area Buffers.

1. [Measurement.](#) Landslide hazard area buffers shall be measured from the top and toe of the slope, and along sides of the slope.

2. [A 15-foot building setback is required from the edge of a landslide hazard area buffer.](#)

[23.](#) Minimum Landslide Hazard Area Buffer. Required buffers shall be 50 feet. The width of the buffer shall reflect the sensitivity of the landslide hazard area in question and the types and density of uses proposed on or adjacent to the geologic hazard. In determining the appropriate buffer width, the Committee shall consider the recommendations contained in any technical report required by these regulations and prepared by an applicant's qualified consultant.

34. Buffer Reduction. Buffers may be reduced to a minimum of 4525 feet when a qualified professional demonstrates through technical studies that the reduction will adequately protect the proposed and surrounding development from the critical landslide hazard. There shall be no buffer reduction for active slides.

45. Increased Buffer. The buffer may be increased where the Technical Committee determines a larger buffer is necessary to prevent risk of damage to proposed and existing development.

6. Buffer Impacts. There shall be no disturbance or construction activity within the designated buffer. If the development can't meet the required buffer, the applicant can apply for Alteration of a Geologically Hazardous Area as set forth in D below and RZC 21.76.070.E, Alteration of Geologic Hazard Areas.

C. Alteration of ~~Geologically Landslide~~ Geologically Hazardous Areas - Generally requirement. Alteration of geologically hazardous areas or their established buffers may only be permitted subject to the criteria in RZC 21.64.050.D, RZC 21.64.020.E, RZC 21.64.030.C, RZC 21.64.040.B, RZC 21.64.050.B, RZC 21.64.060.D, and RZC 21.76.070.E.

D. Alteration of Geologically Hazardous Areas.

1. The City shall approve, condition, or deny proposals in a geologically hazardous area as appropriate based upon the effective mitigation of risks posed to property, health, and safety. The objective of mitigation measures shall be to render a site containing a geologically hazardous site as safe as one not containing such hazard. Conditions may include limitations of proposed uses, modification of density, alteration of site layout, and other appropriate changes to the proposal. Where potential impacts cannot be effectively mitigated, or where the risk to public health, safety and welfare, public or private property, or important natural resources is significant notwithstanding mitigation, the proposal shall be denied.

2. Landslide Hazard Areas. Development shall be prohibited in landslide hazard areas and their buffers except as noted below:

a. Pin pilings or footings for decks are permitted provided that they do not impact the stability of the slope, as demonstrated by geotechnical studies; and

b. The installation and construction of streets and/or utilities identified in currently adopted plans,—subject to the criteria and process set forth in RZC 21.76.070.E, Alteration of Geologic Hazard Areas. Trails, streets, and utilities proposed to use this exemption shall be designed to adequately protect the proposed and surrounding development from the critical landslide hazard

E. Geologically Hazardous Area Performance Standards.

1. Relevant performance standards from RZC 21.64.020.F, RZC 21.64.020.G, and RZC 21.64.030.D, as determined by the Committee, shall be incorporated into mitigation plans.
2. Development within a geologically hazardous area shall 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. The following performance standards shall be reflected in proposals within landslide and erosion hazard areas:
 - a. Geotechnical studies shall be prepared by a qualified consultant to identify and evaluate potential hazards and to formulate mitigation measures;
 - b. Construction methods will reduce or not adversely affect geologic hazards;
 - c. 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;
 - d. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;
 - e. Structures and improvements shall be clustered to avoid geologically hazardous areas;
 - f. 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;
 - g. Development shall be designed to minimize impervious surface coverage;
 - h. Disturbed areas should be replanted as soon as feasible pursuant to an approved landscape plan;
 - i. Clearing and grading regulations as set forth by the City shall be followed;
 - j. Use of retaining walls that allow maintenance of existing natural slope areas are preferred over graded artificial slopes;
 - k. Temporary erosion and sedimentation controls, pursuant to an approved plan, shall be implemented during construction;
 - l. A master drainage plan shall be prepared for large projects as required by the City Engineer;

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- m. A monitoring program shall be prepared for construction activities permitted in geologically hazardous areas;
- n. Development shall not increase instability or create a hazard to the site or adjacent properties, or result in a significant increase in sedimentation or erosion; and
- o. Point discharges from surface water facilities and roof drains onto or upstream from an erosion or landslide hazard area shall be prohibited except as follows:
 - i. Conveyed via continuous storm pipe downslope to a point where there are no erosion hazard areas downstream from the discharge;
 - ii. Discharged at flow durations matching predeveloped conditions, with adequate energy dissipation, into existing channels that previously conveyed stormwater runoff in the predevelopment state; or
 - iii. Dispersed discharge upslope of the steep slope onto a low-gradient undisturbed buffer having a width of at least 50 feet and demonstrated to be adequate to infiltrate all surface and stormwater runoff, and where it can be demonstrated that such discharge will not increase the saturation of the slope.

Effective on: 4/16/2011

21.64.070 Procedures.

A. Procedural Provisions.

1. Interpretation and Conflicts. Any question regarding interpretation of these regulations shall be resolved pursuant to the procedures set forth in RZC Article VI, Review Procedures.
2. Penalties and Enforcement. Compliance with these regulations and penalties for their violation shall be enforced pursuant to the procedures set forth in RZC Article VI.
3. Appeals from Permit Decisions. Appeals from permit decisions shall be governed by the procedures set forth in RZC Article VI.

B. Severability. If any provision of these regulations or its application to any person or circumstance is held invalid by a court of competent jurisdiction, the remainder of

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these regulations or the application to other persons or circumstances shall not be affected.

Effective on: 4/16/2011

RZC 21.68 SHORELINE MASTER PROGRAM (v2)

21.68.030 Shoreline Master Program and Relationship to Other Policies and Regulations.

A. Shoreline Master Program.

1. Shoreline Master Program Policies. The following policies shall constitute the Redmond Shoreline Master Program policies.

a. Comprehensive Plan Shoreline Master Program Element.

b. Comprehensive Plan Natural Environment Element, Section B, Environmentally Critical Areas policies NE-12 through NE-17 and NE-19 through NE-101.
(Ord. 2968)

c. Comprehensive Plan Parks and Recreation Element policies PR-43 and PR-31, PR-16 and PR-17. (Ord. 24863132)

2. Shoreline Master Program Regulations. The following regulations shall constitute the Redmond Shoreline Master Program development regulations:

a. RZC 21.68, Shoreline Regulations.

b. RZC 21.64, Critical Areas (Ord. 2259, dated May 28, 2005), with the exception of the following subsections:

i. RZC 21.64.010.D, Exemptions

ii. RZC 21.64.010.ST, Critical Areas Reasonable Economic Use
ProvisionException - Private Property

iii. RZC 21.64.010.FU, Critical Areas Public Project Reasonable Use
ProvisionException - Public Project

iv. RZC 21.64.020.C, Alteration of Fish and Wildlife Habitat Conservation Areas

v. RZC 21.64.060.C, Alteration of Geologically Hazardous Areas ~~=Generally~~

c. RZC 21.66, Dredging
(Ord. 2486)

d. 21.78, Definitions – Those specific to shorelines and so noted with an “SMP” following their definition.

21.68.060 Shoreline Buffers.

A. Shoreline Buffers.

1. Shoreline buffers are established for Type ~~TS~~ streams; those streams identified as Shorelines of the State. Stream buffers for the Shorelines of the State (Sammamish River, Bear Creek, and Evans Creek) are 200 feet. ~~established for the Sammamish River, Bear Creek, and Evans Creek as follows:~~

~~a. –Sammamish River:~~

~~i. –North of Puget Sound Energy powerline crossing: 150-foot inner buffer plus a 50-foot outer buffer.~~

~~ii. –South of Puget Sound Energy powerline crossing: 150-foot buffer.~~

~~b. –Bear Creek:~~

~~i. –West of Avondale Road: 150-foot buffer.~~

~~ii. –East of Avondale Road: 150-foot inner buffer plus a 50-foot outer buffer.~~

~~c. –Evans Creek: 150-foot inner buffer plus a 50-foot outer buffer.~~

Buffers are established to protect the integrity, function, and value of the riparian corridor, and shall be an area of undisturbed vegetation where development is prohibited, subject to 2 through 5 below. ~~There are no~~The required building setbacks from these buffers is 15 feet.

Where a City-sponsored stream or river restoration project remeandered a Type I stream, adjacent buffers may be reduced so that the buffers will extend no farther

than the extent of the buffers immediately prior to the restoration project, provided no net loss of shoreline ecological functions can be demonstrated, and the reduced buffer is no less than 100 feet in width. This provision shall not be construed to allow automatic reduction of the buffer on the corresponding opposite side of the stream when the stream is being located further away from said property.

~~2.-Subject to 3 through 5 below, maximum clearing and grading within the outer 50-foot buffer is 35 percent of the outer buffer area. Nothing in this provision shall be construed to require remediation of existing situations where the current clearing and grading is in excess of 35 percent. Subject to 3 through 5 below, no net effective impervious surfaces may be created within this area.~~

32. Except as otherwise specifically permitted in this section, RZC 21.68.060.A or in any other portion of the Shoreline Master Program, development, including clearing, grading, disturbing, or altering of a stream buffer is strictly prohibited, except for the following activities that are permitted within all buffer areas:

- a. Stormwater conveyance systems and underground utilities;
- b. Trails subject to the Public Access policies and regulations of the Shoreline Master Program; and
- c. Bridges which are part of a regional transit system where there is a demonstrated public need and the location has been selected through a regional transit planning process. Buffer setbacks do not apply to transportation crossings; however, buffer crossing impacts shall be minimized and mitigated.

43. Businesses currently located in the stream buffers or stream setbacks may continue to operate. A nonconforming use in the stream buffers or stream setbacks may be expanded, provided the expansion does not result in a net loss of shoreline ecological functions over existing conditions. Nonconforming structures may be maintained and repaired and may be enlarged or expanded, provided said enlargement does not extend the structure closer to the shoreline. Businesses currently located in the stream setbacks may sell their land to entities for redevelopment in the same general land use category; e.g., an industrial user may sell to a different type of industrial user, who may continue forward as a nonconforming use and with the existing nonconforming structures and may also

redevelop pursuant to this section, RZC 21.68.060.A, and other applicable portions of the Shoreline Master Program.

54. In any High-Intensity/Multiuse location within a buffer where the land is actively being used as part of a legitimate business operation, such land, including either structures or active operational areas, established prior to January 1, 2008, may continue to operate. New structures, pavement, and other improvements are permitted within this area so long as incremental environmental benefit is provided, and no net loss of shoreline ecological functions is demonstrated.

B. Lake Sammamish Setback. Lake Sammamish has no buffer, as noted in RZC 21.68.060.A above, but rather has a building setback. The waterfront-building setback for new development and redevelopment (teardowns) along Lake Sammamish shall be a minimum of 35 feet. The building setback can be reduced to 20 feet if the setback area is revegetated with primarily native vegetation. Establishment of a tree canopy is encouraged. No constructed structures other than those required for waterfront access/docks are allowed within the 20-foot setback. The applicant shall record on the title documentation from the City of Redmond, confirming that the structure has been built under the flexible setback option and as such, the structure is conforming and the area within the 20-foot lakefront setback is to remain planted primarily with native vegetation, as described above. The City shall assist the applicant in determining appropriate native vegetation requested and will coordinate with the applicant on the planting success the following year. New development adhering to the 35-foot setback and/or reconstruction that involves greater than 50 percent of the value of existing improvements shall be required to plant 50 percent of the area in the minimum 20-foot building setback with native vegetation.

C. Buffer and Waterfront Building Setback Measurements. Shoreline buffers and Lake Sammamish waterfront building setbacks are measured from the ordinary high water mark.

Effective on: 4/16/2011

Critical Areas Regulations Update Relevant Definitions v3

[Existing definitions with no edits are included for context.]

A Definitions

Anadromous Fish. Fish that spawn and rear in freshwater and mature in the marine environment.

Aquifer. A body of soil or rock that contains sufficient saturated material to conduct groundwater and yield useable quantities of groundwater to springs and wells.

Aquifer Recharge Area. Areas where water infiltrates into the subsurface and travels downward through the soil to a ground-water aquifer.

Artificially Created Wetland. Wetlands created from non-wetland sites through purposeful, legally authorized human action, such as irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities.

B Definitions

Base Flood. A flood having a one percent chance of being equaled or exceeded in any given year, also referred to as the 100-year flood. ~~The base flood can be the effective FEMA flow or best available data as approved by the City, which is based upon built-out conditions. The base flood will be determined through hydrologic modeling and will assume fully developed land use conditions in tributary basins, such as defined in the Bear Creek Community Basin Plan. If the City has not modeled the base flood, the applicant shall be responsible for doing so, consistent with the assumptions set forth in this code and the Bear Creek Community Basin Plan.~~

Base Flood Elevation. The water surface elevation of the base flood. It shall be referenced to the ~~National Geodetic Vertical Datum of 1929~~ effective FIRM datum.

Best Available Science. Current scientific information used in the process to designate, protect, or restore critical areas that is derived from a valid scientific process as defined by WAC 365-195-900 through 365-195-925.

Buffer or Buffer Area. A zone surrounding a critical area that protects the critical area from adverse impacts to its integrity, functions, and values, or is an integral part of the resource's ecosystem. The buffer shall consist of a naturally vegetated and

undisturbed, enhanced, or revegetated zone for streams, wetlands, and the top of slope for landslide hazard areas. The buffer shall be a vegetated zone (may include grass) and free of permanent structures for the toe of slope for landslide hazard areas. For the purpose of Class I and II streams, "inner buffer" refers to that portion of the buffer closest to the stream whose distance is established in RZC 21.64.020.B, Stream Buffers. This area is to be treated the same as a buffer as defined above in this definition. The outer buffer is that portion of the buffer furthest away from the stream, whose distance is established in RZC 21.64.020.B, Stream Buffers. Disturbance is permitted in the outer buffer as defined in RZC 21.64.020.B, Stream Buffers. Otherwise these areas are to remain as a naturally vegetated zone.

C Definitions

Candidate Species. Fish and wildlife species that the Washington State Department of Fish and Wildlife will review for possible listing as endangered, threatened, or sensitive.

Channel Migration Zone. The area along a river within which the channel(s) can be reasonably predicted to migrate over time as a result of natural and normally occurring hydrological and related processes when considered with the characteristics of the river and its surroundings. (SMP)

Clearing - Critical Areas. For the purposes of administering, RZC 21.64, Critical Areas Regulations, "clearing" is the removal of timber, brush, grass, ground cover or other vegetative matter from a site which exposes the earth's surface of the site or any actions which disturb the existing ground surface.

Core Preservation Area. Those areas that protect habitat and that are preserved through any of the regulatory mechanisms provided in this Zoning Code, including Native Growth Protection Areas, Class I streams and their buffers, Class II through IV streams, and other areas similarly protected. Core Preservation Areas may also include lands where development rights have been sold and some lands with recorded open space easements, depending on the purpose of the easement. These areas include wetlands and streams and their associated buffers as they become identified at a site-specific level.

Creation of Critical Areas. The purposeful and legally authorized or accidental producing or forming of a wetland or stream from an upland (non-wetland or dry) site through artificial means. For wetlands, the manipulation of the physical, chemical, or biological characteristics present to develop a wetland on an upland site where a wetland did not previously exist. Establishment results in a gain in wetland acres. Activities typically involve excavation of upland soils to elevations that will produce a

wetland hydroperiod, create hydric soils, and support the growth of hydrophytic plant species.

Critical Aquifer Recharge Areas. Areas, defined under the provisions of the Growth Management Act (RCW Chapter 36.70A), as areas with a critical recharging effect on aquifers used for potable water.

Critical Areas. Critical areas include any of the following areas or ecosystems: fish and wildlife habitat conservation areas, wetlands, frequently flooded areas, critical aquifer recharge areas, and geologically hazardous areas, as defined in RCW Chapter 36.70A and RZC 21.64, Critical Areas Regulations.

Critical Facilities. Those facilities necessary to protect the public health, safety, and general welfare which are defined in IBC Table 1604.5 (2003), Categories III and IV. These facilities include, but are not limited to, schools, hospitals, police stations, fire departments and other emergency response facilities, and nursing homes. Critical facilities also include sites of hazardous waste materials and storage.

E Definitions

Enhancement. The improvement of an existing viable wetland, stream or habitat area or the buffers established for such areas, such as by increasing plant diversity, increasing wildlife habitat, installing environmentally compatible erosion controls, or removing nonindigenous plant or animal species. Enhancement also includes actions performed to improve the quality of an existing degraded wetland, stream or habitat area or buffer. For wetlands, enhancement results in a change in some wetland functions and can lead to a decline in other wetland functions, but does not result in a gain in wetland acres.

Erosion Hazard Areas. Those areas containing soils which, according to the United States Soil Conservation Service Soil Classification System, may experience ~~severe to very severe~~significant erosion. Erosion hazard areas also include channel migration zones.

Establishment (Creation). The manipulation of the physical, chemical, or biological characteristics present to develop a wetland on an upland or deepwater site, where a wetland did not previously exist. Activities typically involve excavation of upland soils to elevations that will produce a wetland hydroperiod, create hydric soils, and support the growth of hydrophytic plant species.

F Definitions

FEMA (Federal Emergency Management Administration) Floodway. The channel of the stream and that portion of the adjoining floodplain which is necessary to contain and discharge the FEMA base flood flow without increasing the FEMA base flood elevation more than one foot.

Fish and Wildlife Habitat Conservation Areas. ~~Areas necessary for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created as designated by WAC 365-190-080(5). These areas are further defined in RZC 21.64.020.A, Classification and Rating of Fish and Wildlife Habitat Conservation Areas: 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 and 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.~~

Flood Fringe. That portion of the floodplain outside of the floodway which is generally covered by floodwaters during the base flood; it is generally associated with standing water rather than rapidly flowing water.

Flood Insurance Rate Map. The official map on which the Federal Emergency Management Administration has delineated some areas of flood hazard.

Flood Insurance Study. The official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Insurance Rate Maps, and the FEMA water surface elevations of the base flood.

Flood Protection Elevation. The elevation that is one foot above the base flood elevation.

Floodplain. Synonymous with the 100-year floodplain and means the land susceptible to inundation with a one percent chance of being equaled or exceeded in any given year. The limit of this area shall be based upon flood ordinance regulations maps or a reasonable method which meets the objectives of the Shoreline Management Act. (SMP). This term also applies Citywide.

Floodway. The area that has been established in effective federal emergency management agency flood insurance rate maps or floodway maps. The floodway does not include lands that can reasonably be expected to be protected from flood waters by flood control devices maintained by or maintained under license from the federal government, the state, or a political subdivision of the state. (SMP)

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

Functions and Values. The beneficial roles served by critical areas, including but not limited to water quality protection and enhancement, fish and wildlife habitat, food chain support, flood storage, conveyance, and attenuation, groundwater recharge and discharge, erosion control, wave attenuation, protection from hazards, historical and archaeological and aesthetic value protection, and recreation. These beneficial roles are not listed in order of priority.

G Definitions

Geologically Hazardous Areas. Areas that, because of their susceptibility to erosion, sliding, earthquake, or other geologic events, are not suited to siting commercial, residential, or industrial development consistent with public health and safety concerns.

Geotechnical Report or Geotechnical Analysis. A scientific study or evaluation conducted by a qualified expert that includes a description of the ground and surface hydrology and geology, the affected land form and its susceptibility to mass wasting, erosion, and other geologic hazards or processes, conclusions and recommendations regarding the effect of the proposed development on geologic conditions, the adequacy of the site to be developed, the impacts of the proposed development, alternative approaches to the proposed development, and measures to mitigate potential site-specific and cumulative geological and hydrological impacts on the proposed development, including the potential adverse impacts to adjacent and down-current properties. Geotechnical reports shall conform to accepted technical standards and must be prepared by qualified professional engineers (or geologists) who have professional expertise about the regional and local shoreline geology and processes. (SMP)

Groundwater. Water in a saturated zone or stratum beneath the surface of the land or below a surface water body.

H Definitions

Habitat Management. Management of land to maintain species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not

created. This does not imply maintaining all habitat or individuals of all species in all cases.

Habitats of Local Importance. "Habitats of local importance" include a seasonal range or habitat element with which a given species has a primary association, and which, if altered, may reduce the likelihood that the species will maintain and reproduce over time. These might include areas of high relative density or species richness, breeding habitats, winter range, and movement corridors. These might also include habitats that are of limited availability or high vulnerability to alterations, such as cliffs, talus, and wetlands.

Headwater Stream. A stream that is in the uppermost regions of a watershed or catchment area that flows into a larger stream, main stem river, or lake. Also synonymous with "tributary to."

I Definitions

Incremental Environmental Improvement. An improvement to a system protective of groundwater at an existing facility where the improvement reduces the facility's impact on groundwater, provided the improvement is not one of the prohibited activities identified in RZC 21.64.050.C, Prohibited Activities in Wellhead Protection Zones.

In-Kind Mitigation. Replacement of critical areas with substitute critical areas whose characteristics closely approximate those destroyed or degraded by a regulated activity.

Intentionally Created Streams. Streams created through purposeful human action, such as irrigation and drainage ditches, grass-lined swales, and canals.

Intermittent Stream. A stream that flows only part of the year after precipitation events and receives some water during that time from groundwater sources.

L Definitions

Landslide. Episodic downslope movement of a mass of soil or rock, including snow avalanches.

Landslide Hazard Areas. Areas potentially subject to risk of mass movement due to a combination of geologic, topographic, and hydrologic features.

Large Woody Debris (LWD). Trunks and branches of trees that have fallen into a stream or have been placed in a stream, stabilizing the streambed and providing for

fish and aquatic insects. This definition includes any piece of wood that is at least 10 centimeters in diameter (midpoint) and is at least two meters in length. (SMP)

M Definitions

Moderate Impact Land Use. Land uses which are likely to have a moderate impact on wetlands because of the intensity of the use and levels of human activity. Moderate impact land uses include the following: residential (one unit per acre or less), moderate-intensity open space (parks), new agriculture (moderate-intensity such as orchards and hay fields), paved trails, and building of logging roads.

N Definitions

Noxious Weed. See Redmond Municipal Code, Chapter 6.12, Noxious Weed Control and Tree Regulations.

O Definitions

Ordinary High Water Mark (OHWM). The mark that will be found on all lakes and streams by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation, as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department, provided that in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining fresh water shall be the line of mean high water. (SMP)

Out-of-Kind Mitigation. Replacement of critical areas with substitute critical areas whose characteristics do not closely approximate those destroyed or degraded by a regulated activity.

P Definitions

Priority Habitat/Species or Priority Wildlife Habitat/Species. Habitats and species of local importance and concern in urban areas, as identified by the Washington Department of Wildlife Priority Habitat and Species (PHS) program. "Priority species" are wildlife species of concern due to their population status and their sensitivity to habitat alteration. "Priority habitats" are areas with one or more of the following attributes: comparatively high wildlife density, high wildlife species richness,

significant wildlife breeding habitat, significant wildlife seasonal ranges, significant movement corridors for wildlife, limited availability, or high vulnerability. General types of priority habitat identified in the PHS program potentially found in Redmond include meadows, oak woodlands, old-growth/mature forests, riparian areas, snag-rich areas, urban natural open space, and wetlands.

Q Definitions

Qualified Consultant. For purposes of administering the Critical Areas regulations, "qualified consultant" shall mean a person who has attained a degree in the subject matter necessary to evaluate the critical area in question (e.g., biology or ecology for wetlands, streams and wildlife habitat; geology and/or civil engineering for geologic hazards and hydrogeologist for aquifer recharge areas), and who is professionally trained and ~~for~~ certified or licensed to practice in the scientific disciplines necessary to identify, evaluate, manage, and mitigate impacts to the critical area in question. Specifically, for wetlands, a qualified professional shall have at least two years of full-time work experience as a wetlands professional, including delineating wetlands using Federal manuals, preparing wetland reports, conducting functional assessments, and developing and implementing mitigation plans.

Quality Habitat Areas. Areas that provide significant wildlife value by virtue of their characteristics. These characteristics include several parameters indicative of quality habitat, including size, community diversity, interspersions (spatial patterns), continuity, forest vegetation layers, forest age, and lack of invasive plants. Also referred to as primary habitat.

R Definitions

Reestablishment. The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former critical area. Reestablishment is a type of restoration. For wetlands, reestablishment results in a gain in wetland acres and functions. Activities could include removing fill material, plugging ditches, or breaking drain tiles.

Reconstruction. To rebuild, repair, or restore a structure into its original exterior form after it has been damaged or destroyed.

Regulated Activity. Activities that have a potential to significantly impact a critical area that is subject to the provisions of RZC 21.64, Critical Areas Regulations. Regulated activities generally include, but are not limited to, any filling, dredging, dumping or stockpiling, draining, excavation, flooding, clearing or grading, construction or reconstruction, driving pilings, obstructing, shading, or harvesting.

Rehabilitation. The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a degraded critical area. Rehabilitation is a type of restoration. For wetlands, rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain.

Riparian Stream Corridor. Areas adjacent to stream systems that contain elements of both aquatic and terrestrial ecosystems that mutually influence each other. The width of these areas extends to that portion of the terrestrial landscape that directly influences the aquatic ecosystem by providing shade, fine or large woody material, nutrients, organic and inorganic debris, terrestrial insects, or habitat for riparian-associated wildlife. These areas provide a myriad of functions to support a healthy stream system.

Riparian Management Zone (RMZ). Often synonymous with riparian buffer. The RMZ is the area that has the potential to provide full riparian functions.

Riparian Zone. The area of vegetation adjacent to a body of water that influences (and is influenced by) the water; an area typically used by more species of wildlife than other land areas. (SMP)

S Definitions

Salmon and Steelhead Habitat. Submerged areas that provide significant habitat or critical habitat components for salmon and steelhead at various life cycle stages, including gravel-bottomed streams and rivers used for spawning; streams, rivers, lakes, wetlands and side channels used for rearing or feeding, and refuge from predators and high waters; and shallow areas along lakeshores used for rearing, feeding, and refuge. Salmon and steelhead habitat is mapped on the Stream Map in the Shoreline Master Program. (SMP)

Salmonid. A species of the family Salmonidae: the salmons, trouts, chars, and whitefishes. (SMP)

Seismic Hazard Areas. ~~Lands or areas~~ Areas subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement, or soil liquefaction.

Significant Groundwater Hazard. A condition in which there is a reasonable probability of release of a hazardous material or deleterious substance that, if reached groundwater, would degrade, alter or form part of a process of degradation

or alteration of the groundwater quality so that it becomes or is likely to become harmful for consumption.

Slope. A degree of deviation of a surface from the horizontal, measured as a numerical ratio, percentage, or in degrees. Expressed as a ratio, the first number is the horizontal distance (run) and the second is the vertical distance (rise), as 2:1. Expressed as a percentage, the vertical distance (rise) is divided by the horizontal distance (run) and is then multiplied by 100. A 2:1 slope is a 50 percent slope. Expressed in degrees, the slope is the angle from the horizontal plane, with a 90-degree slope being vertical and 45 degrees being a 1:1, or 100 percent slope.

Species of Concern. Those species listed as state endangered, state threatened, state sensitive, or state candidate, as well as species listed or proposed for listing by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

Species of Local Importance. ~~Species~~ Those species identified by the City of Redmond, ~~including those that possess unusual or unique habitat warranting protection because of qualitative species diversity or habitat system health indicators that are of local concern due to their population status or their sensitivity to habitat alteration.~~ It may also include species which are culturally important to the City. Species of local importance are designated through the ~~development guide~~ zoning code amendment process.

Steep Slopes. Slopes of 40 percent gradient or steeper.

Stream. Those areas where surface waters produce a defined channel or bed. A defined channel or bed is an area which demonstrates clear evidence of the passage of water and includes, but is not limited to, bedrock, channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water year-round. This includes watercourses where there is some component of natural flow (groundwater, spring, etc.) or when an artificial stormwater system is incorporated within a natural stream. A watercourse also includes all surface water connected wetlands that provide or maintain habitat that supports fish. This definition is not meant to include artificially created irrigation ditches, canals, storm, or surface water runoff devices or other entirely artificial watercourses unless they are used by salmonid or created for the purposes of stream mitigation.

Stream Reconnaissance Report. A report prepared by an applicant's qualified consultant to describe a stream and to characterize its conditions, wildlife, habitat values, and water quality.

Structural Diversity. The relative degree of diversity or complexity of vegetation in a wildlife habitat area as indicated by the stratification or layering of different plant

communities (e.g., ground cover, shrub layer and tree canopy), the variety of plant species, and the spacing or pattern of vegetation.

T Definitions

Time-of-Travel Zone. The delineated area within which groundwater moves towards, and eventually reaches, a water supply well within a given period of time.

W Definitions

Wellhead Protection ~~Zone~~Area. ~~A zone~~An area designated under guidance from the Washington Department of Health Wellhead Protection Program pursuant to WAC Chapter 246-290 to protect areas with a critical recharging effect on aquifers used for potable waters.

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

Wetland Class. A hierarchy of systems, subsystems, classes, and subclasses used by the U.S. Fish and Wildlife Service wetland classification scheme to describe wetland types (refer to USFWS, December 1979, Classification of Wetlands and Deepwater Habitats of the United States, for a complete explanation of the wetland classification scheme). Eleven class names are used to describe wetland and deepwater habitat types. These include the following examples which may be found in Redmond: forested wetland, scrub-shrub wetland, emergent wetland, moss-lichen wetland, unconsolidated shore, and aquatic bed.

Wetland Determination. A report prepared by a qualified consultant that identifies, characterizes, and analyzes potential impacts to wetlands consistent with applicable provisions of these regulations.

Wetland Delineation Manual. Guideline document used to identify and delineate wetland boundaries. This is the approved federal wetland delineation manual and applicable regional supplements.

Wetland Mitigation Banking. The act of restoring, establishing, or enhancing a wetland, stream, or other aquatic resource for the purpose of providing compensation in advance for unavoidable impacts to similar aquatic resources.

Wetland Subclass. Any of twenty-eight subclass names are used in the USFWS wetland classification scheme to distinguish between different types of wetland classes. Subclass names include, but are not limited to, the following: persistent, non-persistent, broad-leaved deciduous, needle-leaved deciduous, broad-leaved evergreen, and needle-leaved evergreen. The classification system is fully described in USFWS, 1979, Classification of Wetlands and Deepwater Habitats of the United States.

Wildlife Report. A report, prepared by a qualified consultant, that evaluates plant communities and wildlife functions and values on a site, consistent with the format and requirements established by RZC 21.64, Critical Areas Regulations.

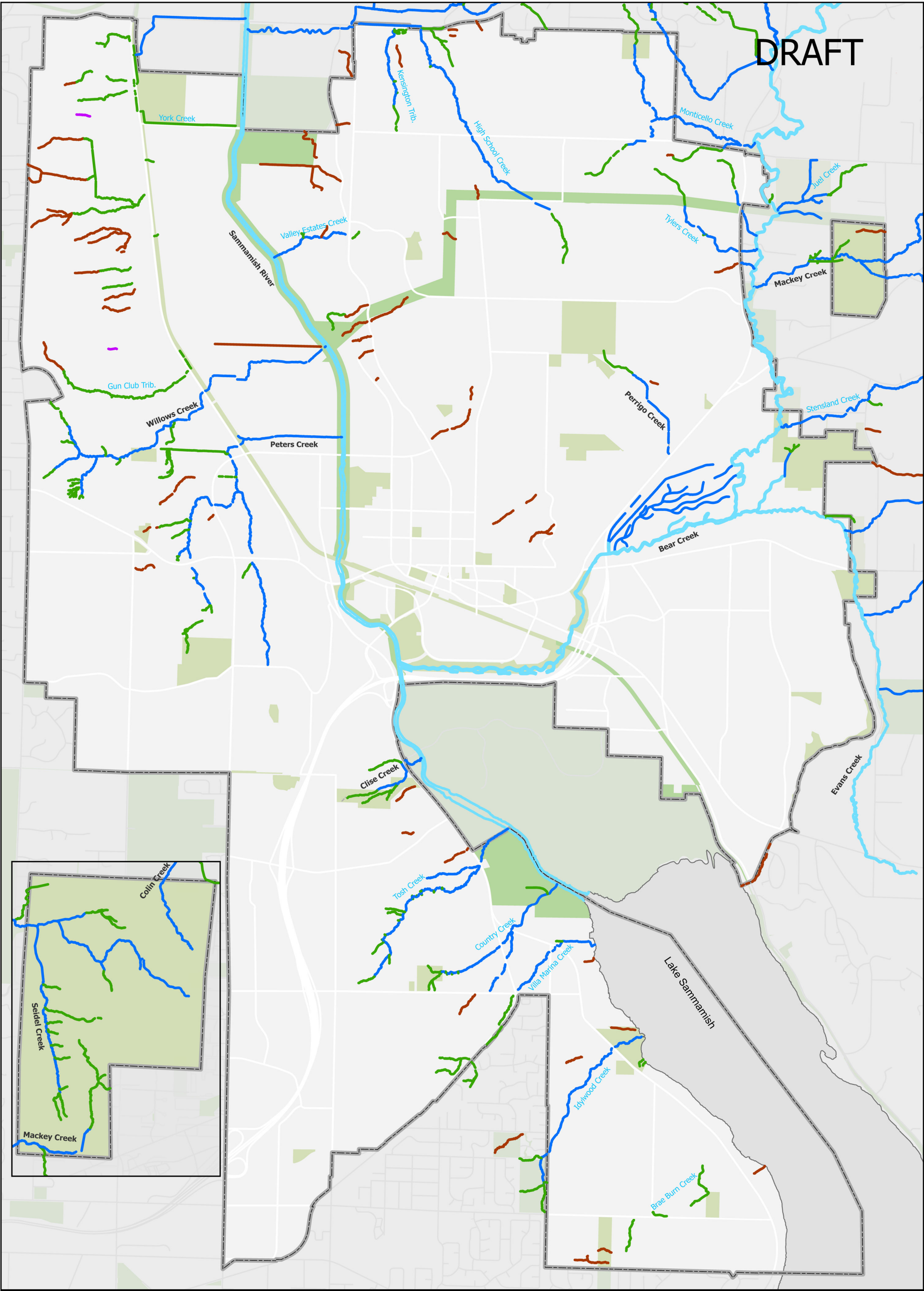
Z Definitions

Zero-Rise Floodway. The channel of the stream and that portion of the adjoining floodplain which is necessary to contain and discharge the base flood flow without increasing the base flood elevation. The zero-rise floodway will always include the FEMA floodway.

ATTACHMENT D

CRITICAL AREAS MAP PORTFOLIO UPDATE

1. Streams
2. Wetlands
3. Frequently Flooded Areas
4. Critical Aquifer Recharge Areas
5. Critical Aquifer Recharge Areas Full Extent
6. Critical Aquifer Recharge Areas Time of Travel
7. Critical Aquifer Recharge Areas Time of Travel Full Extent



DRAFT

Critical Areas Map
Stream Classification Final

City of Redmond, Washington
Effective: ???



Stream Official USGS Stream Name
Informal Stream Name

Stream Type

- S
- Fs
- Ff
- N
- O



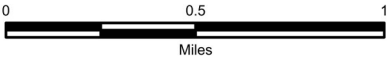
Park and Open Space



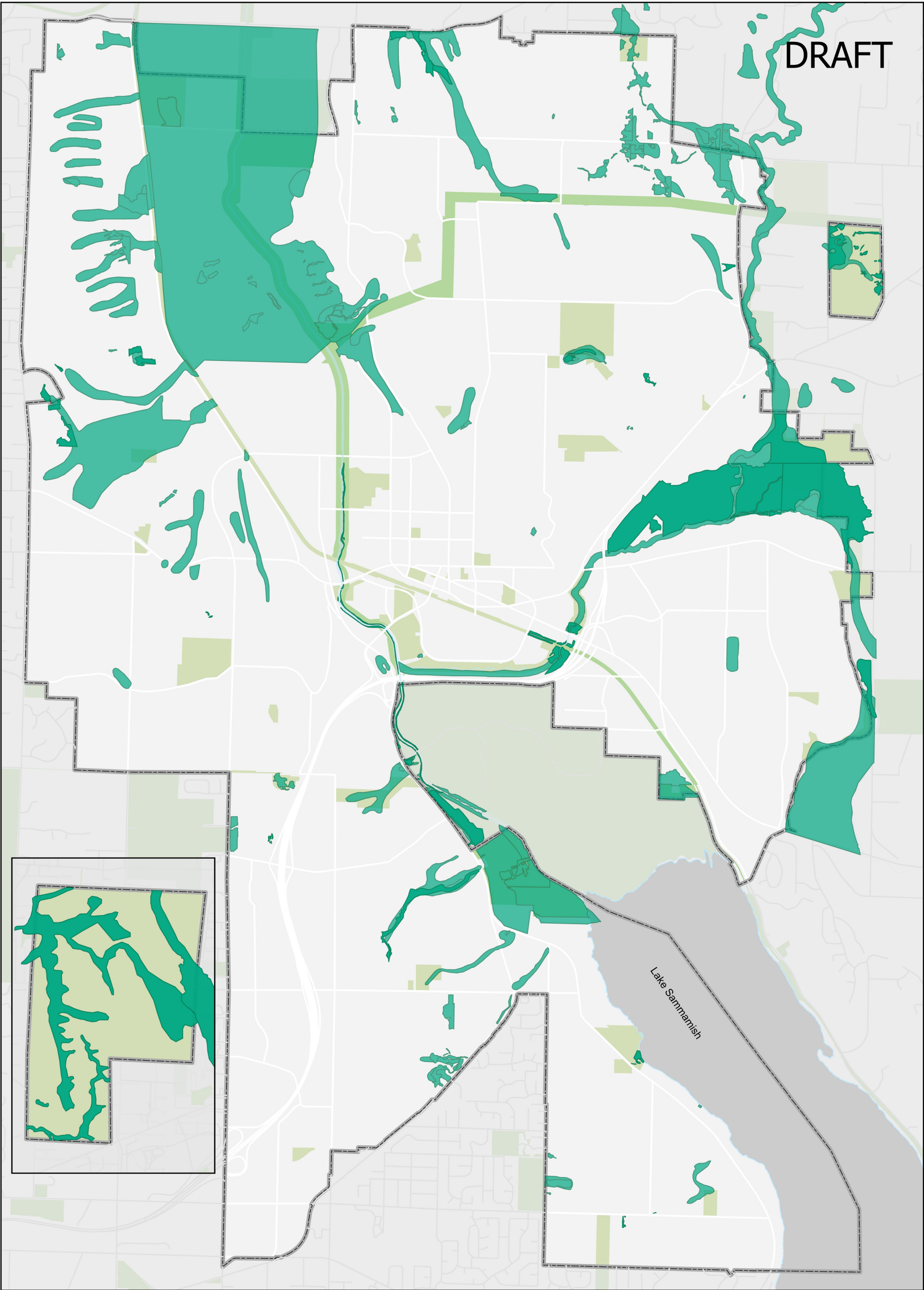
City Limit

Data Sources:
City of Redmond GIS Services, City of Redmond EUSD
Washington Trout/ Wild Fish Conservancy
King Count

Note:
This map must be used as a general guide as it represents approximate locations. Consult RZC 21.64, Critical Areas Regulations, for reporting requirements. In the event there is a conflict between the map and the Critical Areas Regulations, the City's regulations will be applied.



Disclaimer: This map is created and maintained by GIS Services Group, Technology and Information Services, City of Redmond, Washington, for reference purposes only. The City makes no guarantee as to the accuracy of the features shown on this map.



DRAFT

Lake Sammamish



Critical Areas Map
Wetlands

City of Redmond, Washington

Effective: ???

0 0.4 0.8
Miles



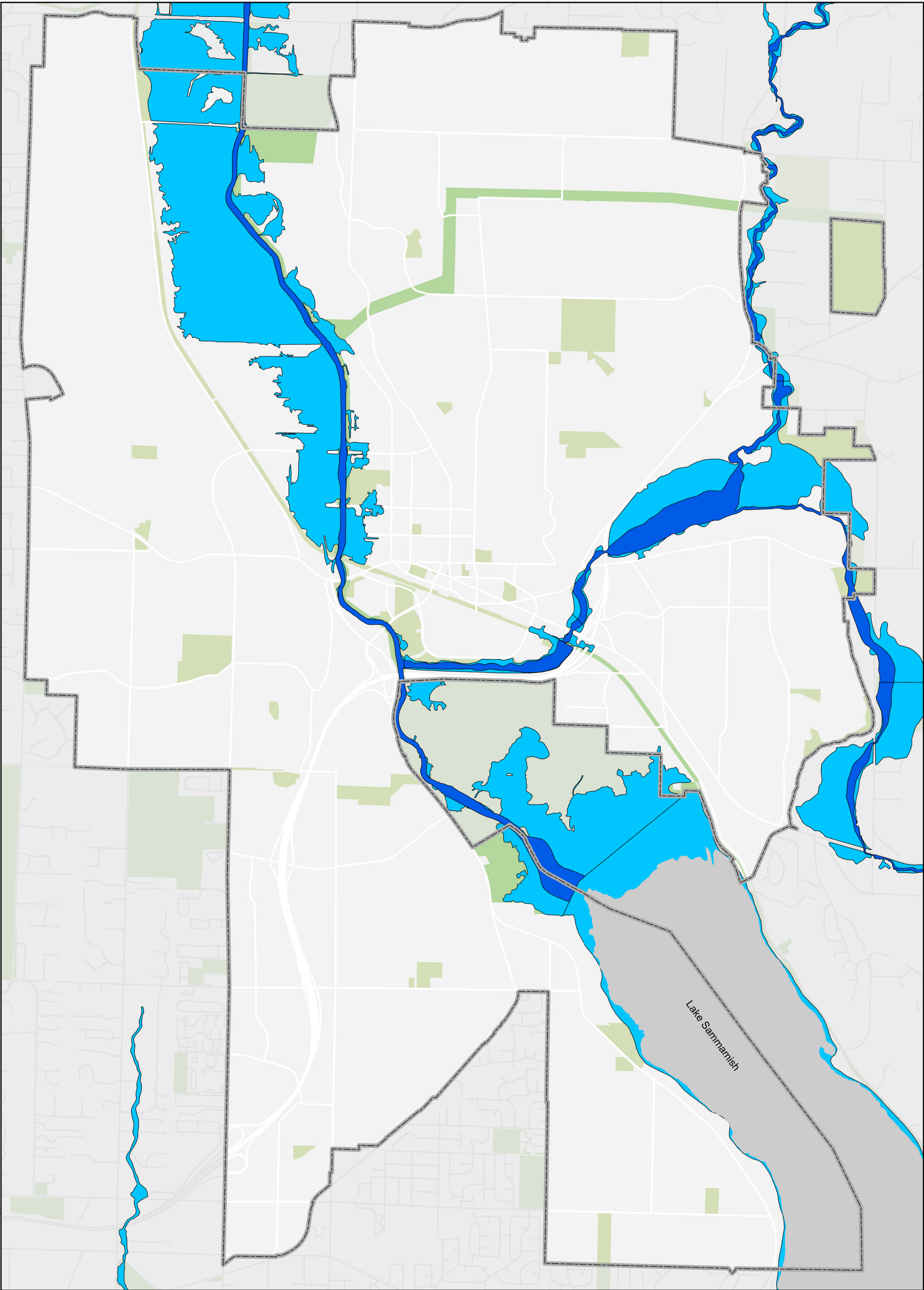
-  Wetland
-  City Limit
-  Park and Open Space

Data Sources:
City of Redmond GIS Services, City of Redmond EUSD

Note:
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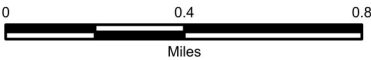
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Critical Areas Map
Frequently Flooded Areas

City of Redmond, Washington
Effective: ???



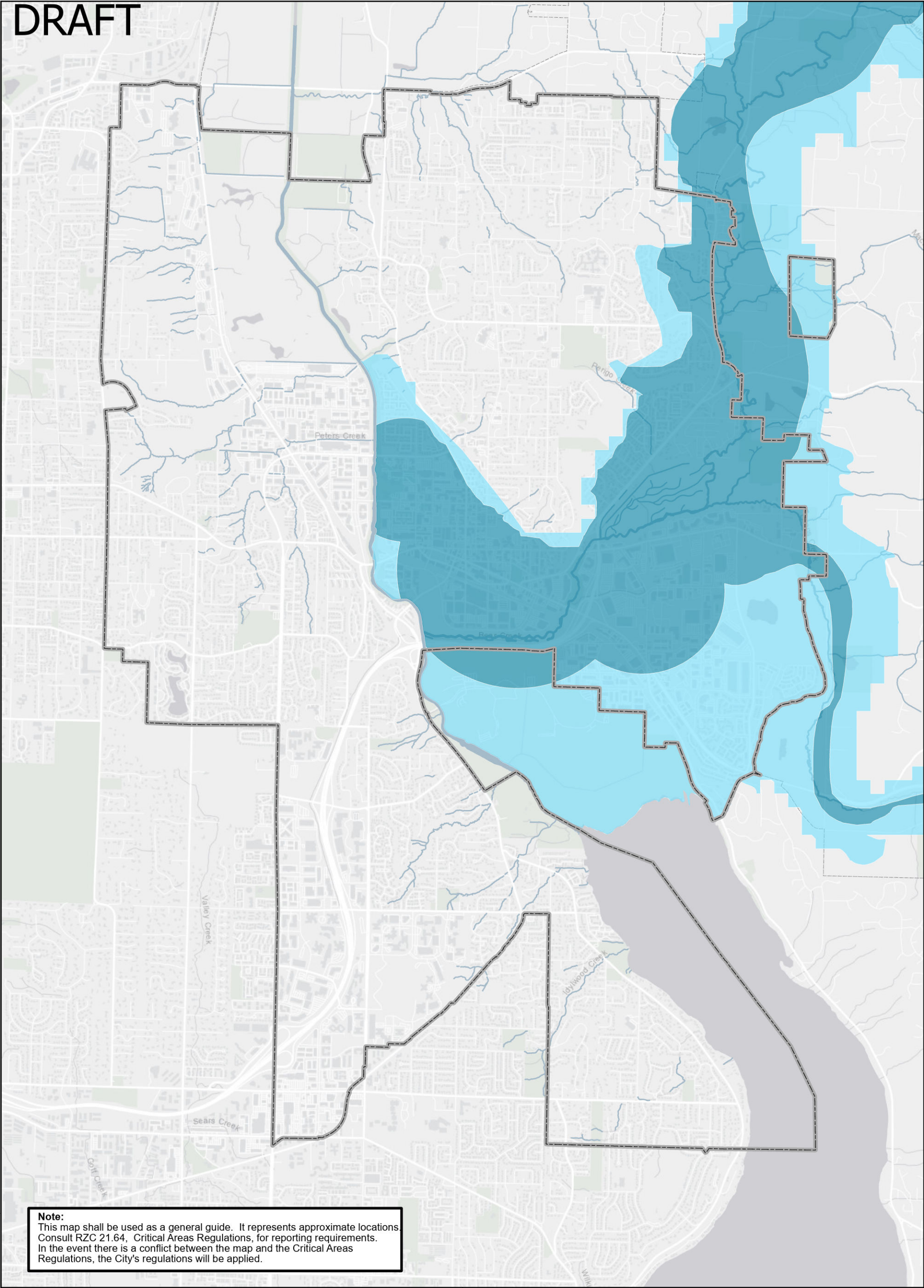
-  FEMA Floodplain
-  100 Year Floodway
-  City Limit
-  Park and Open Space

Data Sources:
City of Redmond GIS Services, City of Redmond EUSD

Note:
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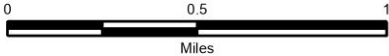
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Critical Aquifer Recharge Areas

City of Redmond, Washington
Effective on: ?????

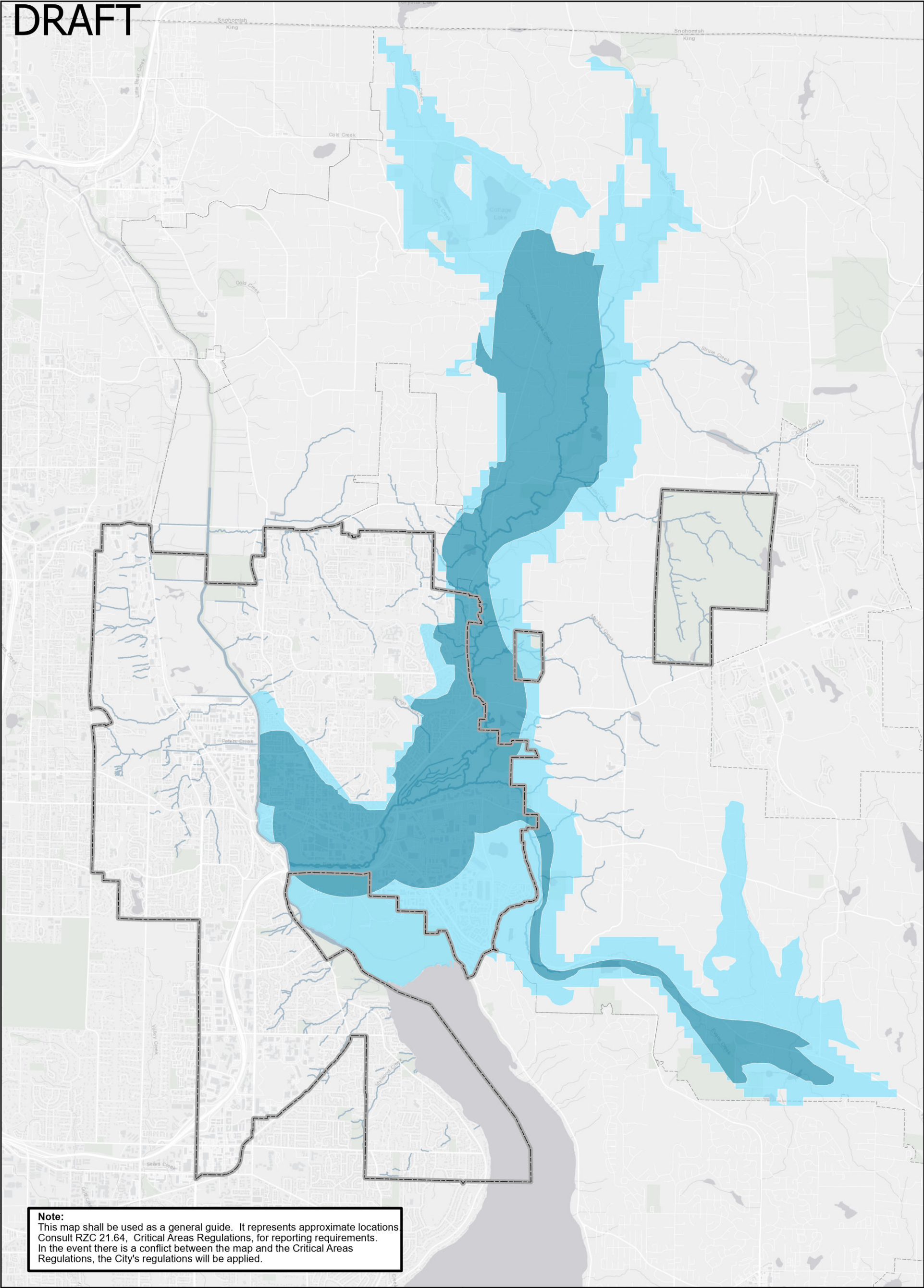


-  CARA I
-  CARA II
-  City Limit
-  Stream

Data Source:
City of Redmond
King County
University of Washington
United States Geological Survey

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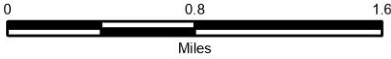
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Critical Aquifer Recharge Areas

City of Redmond, Washington
Effective on: ?????

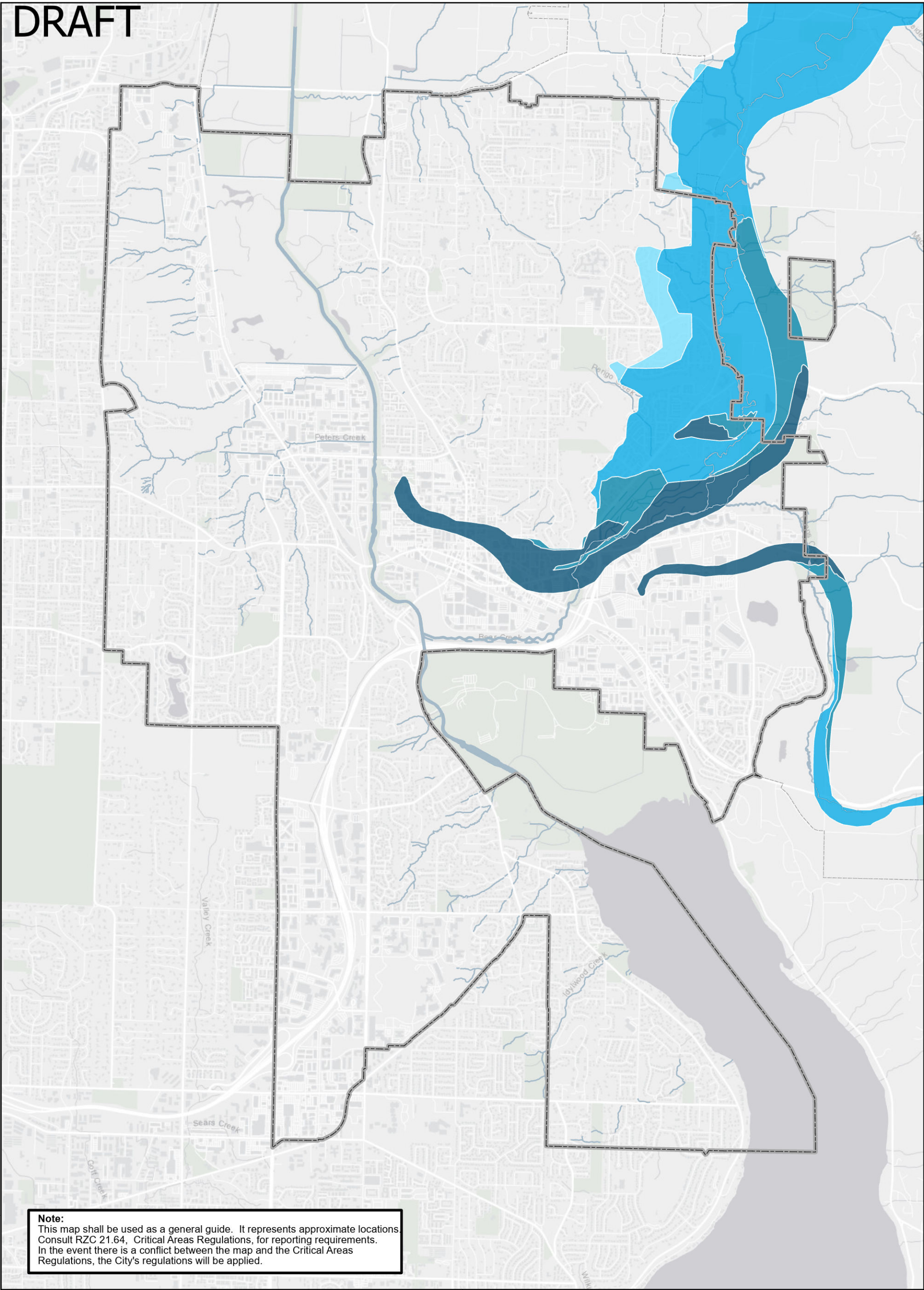


- CARA I
- CARA II
- City Limit
- Stream

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Data Source:
City of Redmond
King County
University of Washington
United States Geological Survey

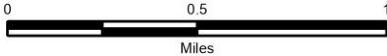
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Note:
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Groundwater Time of Travel

City of Redmond, Washington
Effective on: ?????



Groundwater Time of Travel

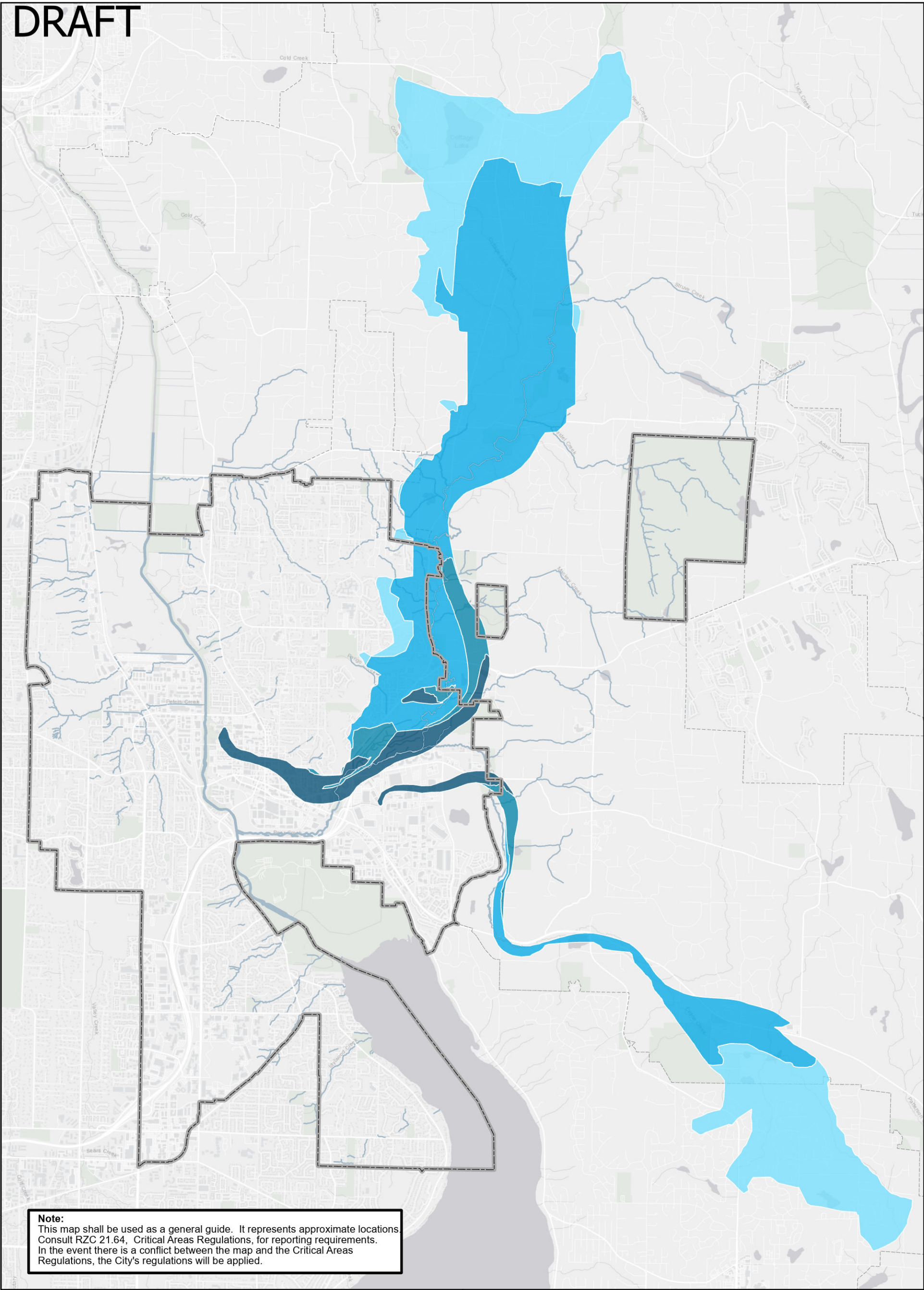
- 6 Month
- 1 Year
- 5 Year
- 10 Year

- City Limit
- Stream

Data Source:
City of Redmond
King County
University of Washington
United States Geological Survey

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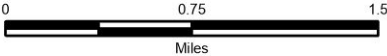


Note:
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Groundwater Time of Travel

City of Redmond, Washington

Effective on: ??????



Groundwater Time of Travel

- 6 Month
- 1 Year
- 5 Year
- 10 Year



City Limit



Stream

Data Source:
City of Redmond
King County
University of Washington
United States Geological Survey

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