STREAMS

Why are streams being protected?

Streams and riparian areas are crucial habitats for plants and animals, sustaining endangered species, connecting aquatic and terrestrial wildlife, protecting fish habitat, and recharging groundwater. They are also classified as fish and wildlife habitat conservation areas (Habitat Conservation Areas), which are one of five types of important areas mandated to be protected by the Growth Management Act (GMA).[1]

What is protected within streams, stream buffers, and setbacks?

Streams are used by fish and other aquatic life for habitat and spawning. Streams are currently protected by vegetated buffers that vary in size based on the type of stream. These buffers help provide habitat corridors for terrestrial species, shade stream channels, and provide filtration to prevent contaminants and pollutants from entering streams directly.

How are streams defined?

Streams are defined as areas within a city where surface waters produce a defined channel or bed, excluding artificial watercourses such as canals or irrigation ditches; these beds and channels, which can be defined channel swales, gravel beds, sand and silt beds, or bedrock channels, show clear evidence of water passage. The streams are further classified into four different types, as listed below:

- **Type S stream** - Referred to as *shorelines of the state*, these are the largest streams that provide the most aquatic habitat.
- **Type F Stream** - Used by salmon and other fish for habitat and spawning or has the potential to.
- **Type Np Stream** - Flowing water year-round during normal rainfall but does not have any fish living or spawning in it.
- **Type Ns Stream** - Flowing water during the rainy/wet season, but likely dry during the summer months.

Water types are further defined in the Washington Administrative Code (WAC) under Water Typing System[2].

How are streams currently protected?

Streams are currently protected by requiring a buffer width that varies based on the type of stream. These buffers range from 150 feet to 50 feet, based on the type of stream, and protect the riparian habitats along the stream. Additionally, a 15-foot building setback is also required from the edge of the buffer. This setback allows for the maintenance of homes and other developments without impacting the stream buffer.

[1] RCW 36.70A.030(11)
[2] WAC 222-16-030

Using Best Available Science (BAS), how should streams be protected?

The Department of Fish & Wildlife's current guidance[3] for protection of riparian areas emphasizes a shift in terminology from the concept of "stream buffers" to "riparian management zones" (RMZs). The Department of Fish & Wildlife defines riparian management zones as the bounds of the riparian ecosystem; the area that has potential to provide full riparian functions (Rentz et al. 2020). This differs from the use of "buffer(s)," as a riparian management zone is wide enough to potentially provide full riparian function and may be considered as a critical area itself.

The Department of Fish & Wildlife also recommends that riparian management zone widths be established based on a Site Potential Tree Height framework. The Site Potential Tree Height is defined as "…*the average maximum height of the tallest dominant trees for a given site class*" (Rentz et al. 2020). Exceptions may occur where it would be less than 100 feet, in which case assigning a width of 100 feet at a minimum based primarily on what is needed to provide adequate biofiltration and infiltration of runoff for water quality protection, but also in consideration of other habitat-related factors including shade and wood recruitment (Rentz, 2020). However, the current buffer requirements in the Critical Area Ordinance results in a similar area of protection as the Site Potential Tree Height framework.

Regardless of method to calculate stream buffer/riparian area, effective regulations should include:

- Limiting development and impervious surfaces
- Limiting tree removal and vegetation clearing
- Encourage low impact development
- Maintain densely vegetated areas with native trees, shrubs, and ground covers

How are streams currently identified in the field, as well as on a map?

Not all the critical areas in the City of Sammamish are fully mapped. Field verification and, if appropriate, site-specific survey to map streams and associated buffers is required. The locations of streams within the City of Sammamish are displayed on the City's GIS database[4]. The type of streams and required buffers are field verified by a qualified professional and classified using the water typing system.

Using Best Available Science, how should streams be identified in the field and on a map?

The WDFW guidance suggests that RMZ widths be based on the SPTH framework. This approach would eliminate stream typing and would rely on the soil type to determine what the site potential tree height would be at 200 years. This value would determine what the RMZ width would be to achieve full function of the riparian ecosystem. This approach also recommends measuring RMZ widths from the outer edge of the Channel Migration Zone (CMZ), where present, or from the Ordinary High Water Mark (OHWM) where a CMZ is not present.

[3] Rentz, R., A. Windrope, K. Folkerts, and J. Azerrad. (2020). *Riparian Ecosystems, Volume 2: Management Recommendations.* Habitat Program, Washington Department of Fish and Wildlife, Olympia. Riparian Ecosystems, Volume 2: Management Recommendations (wa.gov)

[4] Sammamish Property Tool can be viewed at: ArcGIS Web Application

How would a stream map be updated?
A site-specific stream map would be updated based on the field verification of the presence and boundary of a regulated stream by a qualified professional through a report. The identification of any streams as part of a development proposal should be included in the City's advisory wetland map.
Who would be responsible for updating the map for streams?
The City should ultimately be responsible for the updating of any city maps regarding streams. However, updates should be made as critical area reports are provided to the City as part of development proposal applications. Applicants should provide mapping data (shapefiles), in order for the City to update the maps accordingly.

Summary of Streams Changes Being Considered

CATEGORY 1 – No Action Needed; Changes Integrated into Draft Code Amendments
Changes required by the Growth Management Act, clarifications, and other minor changes.

- Review and update the definition of a fish-bearing stream (Type F) and unregulated water bodies.
- Define "riparian area"
- Require demonstration of mitigation sequencing for any development impacts.
- Review and revise exemptions for consistency with BAS.
- Remove references to ponds and the Lake Sammamish buffer sections, as these sections have been repealed and have no content.

CATEGORY 2 - Requires Planning Commission & City Council Direction for Code Amendment Integration
Changes don't impact the project timeline, require additional budget, or require further policy/impact analysis.

- Consider renaming "streams" critical areas to "riparian areas."
- Review regulations for piped watercourses and establish when restoration is required.
- Consider incorporating the WDFW Riparian Management Zone Guidance
- Review and provide additional standards for best management practices within riparian protection areas to improve conditions or activities that adversely impact critical areas.
- Consider providing incentives to encourage buffer restoration.
- Reviewed the buffer modification requirements in conjunction with the updates to the buffer width requirements. Depending on the buffer approach chosen, some modifications may not be applicable or be compliant with BAS.

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CATEGORY 2 - Requires Direction for Code Amendment Integration **(continued from the previous page)**

Changes don't impact the project timeline, require additional budget, or require further policy/impact analysis.

- Review and revise the buffer averaging requirements, particularly related to requirements for degraded areas, to improve the application of these provisions.
- Review and revise mitigation requirements to improve clarity of application and consistency with BAS.
- Provide additional development standards for existing conditions where a property has a legally non-conforming development.
- Review Reasonable Use Exception criteria and consider including a prioritization for retaining resources that cannot be replaced.
- If not in tract or easement, provide additional stream standards for existing conditions.
- Consider approaches to buffer management that align with land use in Sammamish and limit increases in nonconformances.

CATEGORY 3 - Requires Planning Commission & City Council Direction for Future Workplans

Changes may impact stakeholders, and/or require additional budget and staff time.

- Consider developing a process to resolve discrepancies for stream types and riparian areas.
- Provide additional clarity on the process and determination to increase buffer widths in alignment with BAS. (This may be required for Agency review.)
- Conduct GIS analysis to support BAS review and stream buffering approach.