

SECTION 600: FREQUENTLY FLOODED AREAS

16.20.605 Purpose.

The purpose of this article is to protect the public health, safety and welfare from harm caused by flooding. It is also the intent to prevent damage and/or loss to both public and private property. Pursuant to this purpose, the city uses floodplain management regulations contained in Chapter [15.24](#), adopted by reference, which designates special flood hazard areas and establishes requirements for these areas. Areas within the city's shoreline jurisdiction are regulated by floodway and floodplain regulations in the city's shoreline master program.

SECTION 700: SPECIAL REPORTS

16.20.705 Purpose.

The following special reports may be required to provide environmental information and to present proposed strategies for maintaining, protecting and/or mitigating **alterations or impacts to** critical areas:

- A. Wetland **assessment** report/wetland mitigation plan/**buffer enhancement plan/wetland monitoring report**;
- B. Habitat **assessment/habitat** management plan;
- C. Geotechnical report/geological report;
- D. Hydrogeological report.

16.20.710 When required.

Special reports shall be submitted by the applicant and approved by the director when required by this chapter for the protection of a critical area, **its buffer and building setback**. Refer to specific critical **area** protection standards for when special reports are required. The city shall retain a consulting specialist(s) who shall review all special **reports** studies for critical areas, and ensure their compliance with this chapter.

16.20.715 Responsibility for completion.

The applicant shall reimburse the city for the costs incurred in the preparation of special reports or tests and for the costs incurred by the city to engage technical consultants or staff for review and interpretation of data and findings submitted by or on behalf of the applicant.

16.20.720 Qualifications of professionals.

Any special report as described in this article prepared by a professional (as described in **Section 100 Article I** of this chapter) shall include his or her resume, or other list of qualifications, to aid the director in assessing these qualifications.

16.20.721 Time limitations.

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Special reports submitted in accordance with this article shall be valid for a period of five three years from the date of issue unless a longer or shorter period is specified by the city at the time the original report is prepared.

16.20.725 Wetland reports.

A. **Wetland Assessment Report.** A wetland assessment report shall include but not necessarily be limited to, the following:

- 1. Vicinity map.**
- 2. When available, a copy of a National Wetland Inventory Map (U.S. Fish and Wildlife Service).**
- 3. A site map setting forth all of the following:**
 - a. Site boundary property lines and roads;**
 - b. Approximate boundary of wetland(s) within 300 feet of the subject parcel or parcels;**
 - c. Approximate extent of buffer width based on the category of the wetland;**
 - d. An aerial photograph with overlays displaying the site boundaries and wetland delineation, may be required.**
- 4. Completed wetland rating forms and associated rating form maps.**
- 5. A report that describes the wetland(s) within 300 feet of the parcel or parcels, including the vegetation, communities, hydrologic support, habitat functions and connections/corridors, and other physical and biological attributes.**

B. Wetland Delineation Report. A wetland delineation report shall include, but not necessarily be limited to, the following:

1. Vicinity map.
2. When available, a copy of a National Wetland Inventory Map (U.S. Fish and Wildlife Service).
3. A site map setting forth all of the following:
 - a. Surveyed wetland boundaries based upon a delineation by a wetlands specialist or wetland boundaries recorded using a differential global positioning system, based upon a delineation by a wetlands specialist. In the event that a differential global positioning system is used, wetland boundary information, including position accuracies, shall be provided to the city in an electronic data format acceptable to the city;
 - b. Site boundary property lines and roads;
 - c. Internal property lines, rights-of-way, easements, etc.;
 - d. Existing physical conditions of the site, including buildings, fences and other structures, roads, parking lots, utilities, water bodies, etc.;
 - e. Contours at the smallest readily available intervals;

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- f. Hydrologic mapping showing patterns of surface water movement and known subsurface water movement into, through, and out of the site area;
 - g. Location of all test holes and vegetation sample sites, number to correspond with flagging in the field and field data sheets; and
 - h. An aerial photograph with overlays displaying the site boundaries and wetland delineation may be required.
4. A report which includes the following:
 - a. Location information (legal description, parcel number and address);
 - b. Delineation Report. The wetland boundaries on the site established by the delineation shall be staked and flagged in the field. If the wetland extends outside the site, the delineation report shall discuss all wetland areas within ~~one~~ three⁶² hundred fifty feet of the site, but need only delineate those wetland boundaries within the site;
 - c. General site conditions including topography, acreage, and surface areas of all wetlands identified and water bodies within one-quarter mile of the subject wetland(s);
 - d. Hydrological analysis, including topography, of existing surface and known significant subsurface flows into and out of the subject wetland(s); and
 - e. Analysis of functional values of existing wetlands, including vegetation, fauna, and hydrologic conditions.
 5. A summary of proposed activity and potential impacts to the wetland(s).
 6. Recommended wetland category, ~~including rationale for the recommendation based on results from the Washington State Department of Ecology's Wetland Rating System for Western Washington – Revised (2014) or as amended. Copies of the rating forms and maps must be appended to the report.~~
 7. Recommended Buffer boundaries, ~~as determined by Table 16.20.230.~~ including rationale for boundary locations.
 8. Site plan of proposed activity, including location of all parcels, tracts, easements, roads, structures, and other modifications to the existing site. The location of all wetlands and buffers shall be identified on the site plan.
 9. Complete U.S. Army Corps of Engineers wetland determination data forms from the applicable regional supplement.
- C. Wetland Mitigation Plan Report. Whenever the director has determined that impacts to losses of regulated wetlands or buffers are necessary and unavoidable, or a review of a regulated wetland or its buffer is proposed, or a reasonable use exception is applied, a mitigation plan shall be prepared ~~in the following order of preference:~~

⁶² 300 feet is consistent with Section 16.20.115.

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1. The applicant shall demonstrate that mitigation sequencing was applied to the project, in the following order:
 - a. Avoiding the impact altogether by not taking a certain action or parts of actions. This may be accomplished by selecting a reasonable **practicable** alternative that does not involve wetlands or wetland **buffer** impacts. **The applicant must describe practicable alternatives to the project that avoid environmental impacts, and provide valid reasoning why those alternatives would not fulfill the purpose and need of the project.** applying reasonable mitigation measures, such as drainage and erosion control, alternative site planning, and/or using best available technology.
 - b. Minimizing impacts by limiting the degree of magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts. This may be accomplished by selecting a reasonable **design** alternative that avoids most wetland **environmental** impacts, **and minimizes others to the greatest extent possible.** applying reasonable mitigation measures, such as drainage and erosion control, alternative site planning, and/or using best available technology.
 - c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment. This may **be accomplished by restoring the environmental functions of an area temporarily affected by a project.** be done by reestablishing wetland and wetland buffer characteristics on a site which have been lost by alterations or activities. Rectifying shall be accomplished in accordance with a mitigation plan, as prepared in accordance with the requirements below, and as approved by the director.
 - d. **Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. This may be done through operational constraints and/or modifications which result in the reduction or elimination of impacts over time. This typically done in conjunction with other mitigating actions.**
 - e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments. This may be done by intentionally creating wetlands and wetland buffers at another location where none currently exist, improving existing wetlands and wetland buffers at another location, or otherwise providing a substitute wetland resource at another location as compensation for any unavoidable adverse wetland impacts. **Compensating Compensation** shall be accomplished in accordance with a mitigation plan, as prepared in accordance with the requirements outlined below, and as approved by the director.
 - f. **Monitoring the impact and taking appropriate corrective measures.**
 - g. **Mitigating for individual actions may include a combination of the above measures.**
2. The overall goal of any mitigation plan shall be no net loss of regulated wetland functions and acreage.
3. Those persons proposing wetland compensatory projects shall show that the compensation project is associated with an activity or development otherwise permitted and that the restored, created, or enhanced wetland will be as persistent as the wetland it replaces by accomplishing the following:

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- a. Demonstrate sufficient scientific expertise, supervisory capability, and financial resources to carry out the project;
 - b. Demonstrate the capability for monitoring the site and for making corrections during this period, if the project fails to meet ~~projected~~ the stated goals and objectives; and
 - c. Protect and manage or provide for the protection and management of the compensation area to avoid further development or degradation.
4. 7. Wetland mitigation plans shall be implemented by the project applicant, and include the following components:
- a. Baseline Information. A written assessment and accompanying maps of the impacted wetland shall be produced by the applicant or applicant's consultant and shall include, at a minimum: existing wetland acreage; vegetative, faunal and hydrologic characteristics; soil and substrate conditions; and topographic elevations.
 - b. If the compensation site is off site from the impacted wetland site, baseline information about it, in addition to the above information about the impacted wetland, shall be provided by the applicant and shall include those items listed in subsection (B)(7)(a) of this section and: the relationship of the compensation site within the watershed and to existing water bodies; detailed description of the site selection process and valid rationale for the selected site; existing and proposed compensation site conditions; buffers; and ownership.
 - c. Environmental Goals and Objectives. The report shall identify goals and objectives and include:
 - i. The purposes of the compensation measures including ~~a description of site selection criteria~~, identification of compensation goals, identification of target evaluation species and resource functions, dates for beginning and completion of compensation measures, and a complete description of structure and functional relationships sought in the new wetland. The goals and objectives shall be related to the functions of the original wetland or, if out-of-kind, the type of wetland to be emulated; and
 - ii. A review of the available literature and/or experience to date in restoring or creating the type of wetland proposed shall be provided. An analysis of the likelihood of success of the compensation project at duplicating the original wetland shall be provided based on the experiences of comparable projects, if any. An analysis of the likelihood of persistence of the created or restored wetland shall be provided based on such factors as: surface and groundwater supply and flow patterns; dynamics of the wetland ecosystem; sediment or pollutant influx and/or erosion; periodic flooding and drought, etc.; presence of invasive flora and fauna; potential human or animal disturbance; and previous comparable projects, if any.
 - d. Performance Standards. Specific criteria shall be provided for evaluating whether or not the goals and objectives of the mitigation plan are being achieved at various stages in the project and for beginning adaptive management ~~remedial action~~ or contingency measures. Such criteria may include water quality standards, survival rates of planted vegetation, species abundance and diversity targets, habitat diversity indices, or other ecological, geological or hydrological criteria.

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- e. Detailed Construction and Planting Plans. Written specifications and descriptions of compensation techniques shall be provided including the proposed construction sequence, grading and excavation details, erosion, sediment and stormwater recharge control features needed for wetland construction and long-term survival; a planting plan specifying plant species, quantities, locations, size, spacing and density; the source of plant materials, propagules, or seeds; water and nutrient requirements for planting; where appropriate, measures to protect plants from predation; specification of substrate stockpiling techniques and plating instructions; descriptions of water control structures and water-level maintenance practices needed to achieve the necessary hydrocycle/hydroperiod characteristics; etc. These written specifications shall be accompanied by detailed site diagrams, scaled cross-sectional drawings, topographic maps showing slope percentage and final grade elevations, and any other drawings appropriate to show construction techniques of anticipated final outcome. The plan shall provide for elevations which are appropriate for the desired habitat type(s) and which provide sufficient tidal prism and circulation data.
- f. Monitoring Program. A program outlining the approach for monitoring construction of the compensation project and for assessing a completed project shall be provided. Monitoring must include sufficient information to adequately assess the progress of a project. Monitoring may include, but is not limited to: (i) establishing vegetation plots to track changes in plant species composition and density over time; (ii) using photo stations to evaluate vegetation community response; (iii) sampling surface and subsurface waters to determine pollutant loading and changes from the natural variability of background conditions (pH, nutrients, heavy metals); (iv) measuring base flow rates and stormwater runoff to model and evaluate water quantity predictions by a licensed engineer in the state of Washington, where required; (v) measuring sedimentation rates, if applicable; and (vi) sampling fish and wildlife populations to determine habitat utilization, species abundance and diversity. A protocol shall be included outlining how the monitoring data will be evaluated to ~~by~~ agencies that are tracking the progress of the compensation project. A monitoring report shall be submitted annually, and at a minimum, document milestones, successes, problems, maintenance and contingency actions of the compensation project. The compensation project shall be monitored for a period necessary to establish that performance standards have been met, but not for a period of less than five ~~three~~ years.
- g. Contingency Plan. Identification of potential courses of action, and any corrective measures to be taken, when monitoring or evaluating indicates project performance standards are not being met.
- h. Performance Conditions. Any compensation project prepared pursuant to this section and approved by the department shall become part of the application for the permit.
- i. Performance Bonds and Demonstration of Competence. A demonstration of financial resources, administrative, supervisory, and technical competence and specific expertise of sufficient standing to successfully execute the compensation project shall be provided. A compensation project manager shall be named, and the qualifications of each team member involved in preparing the mitigation plan and implementing and supervising the project shall be provided, including educational background and areas of expertise, training and experience with comparable projects. In addition, bonds insuring fulfillment of the compensation project, monitoring program, and any contingency measure shall be posted in the amount of one hundred fifty percent of the expected

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cost of compensation and shall be effective for a period of no less than three years and no greater than ten years after completion of the mitigation plan.

j. ~~Waiver. The director may waive portions of this report if, in his or her opinion, there is adequate information available on the site to determine its impacts and appropriate measures.~~

k. ~~List of Qualified Consultants. The department shall establish a list of qualified consultants to prepare mitigation plans.~~

D. Buffer Enhancement Plan⁶³. ~~When required, the applicant shall submit a buffer enhancement plan prepared by a wetland specialist. The report shall assess the habitat, water quality, storm water detention, ground water recharge, shoreline protection, and erosion protection functions of the buffer; assess the effects of the proposed modification on those functions; and address the six criteria in subsection 16.20.230.F.3. The buffer enhancement plan shall also provide the following.~~

1. ~~A map detailing the specific area of enhancement that shows the elevation contours of the site;~~
2. ~~A planting plan that uses native plant species indigenous to this region including groundcover, shrubs and trees;~~
3. ~~Provisions for monitoring and maintenance over the monitoring period as required under PMC 16.20.725.~~

E. Monitoring Report.⁶⁴ ~~Monitoring reports shall be prepared according to the approved monitoring schedule and submitted to the City of Poulsbo by December 31st of each monitoring year. A monitoring schedule shall be for a minimum of five years and a maximum of ten growing seasons, depending on the complexity of the compensation project. The director may approve modifications to this schedule as appropriate. Monitoring shall be conducted on the following schedule:~~

1. ~~At the end of construction (as-built);~~
2. ~~Early in the growing season of the first year;~~
3. ~~Late in the growing season of the first year;~~
4. ~~Annually.~~

16.20.728 Habitat assessment report.⁶⁵

~~For all regulated activity proposed on a site which contains or is within 300 feet of a fish and wildlife habitat conservation area, a habitat assessment shall be prepared by a qualified wildlife biologist. The habitat assessment shall include, at a minimum, the following:~~

1. ~~Identify the type of stream and its prescribed buffer.~~

⁶³ Recommended by Grette Associates.

⁶⁴ Recommended by Grette Associates.

⁶⁵ Recommended by Grette Associates

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2. **An analysis and discussion of species or habitats known or suspected to be located within 300 feet of the site.**
3. **Assessment of project impact or effect on habitat and water quality.**
4. **A site plan which clearly delineates the fish and wildlife habitat conservation area found on or within 300 feet of the site.**

16.20.730 Habitat management plan.⁶⁶

A. **When intrusions, reductions, alterations or impacts to a fish and wildlife habitat conservation area is proposed, or when otherwise required, a habitat management plan shall be prepared. The Habitat Management Plan** This report shall identify how the development impacts from the proposed project will be mitigated. The Washington Department of Fish and Wildlife Priority Habitat and Species Management Recommendations, dated May 1991, or bald eagle protection rules outlined in WAC 232-12-292, as now or hereafter amended, may serve as guidance for this report. The recommendations in Washington Department of Fish and Wildlife Priority Habitat and Species Management Recommendations, dated May 1991, shall not serve as mandatory standards or policy of this chapter until such time as the Department of Fish and Wildlife holds public hearings on the recommendations and the State Wildlife Commission endorses the recommendations following the public hearings. The recommendations in the Washington Department of Fish and Wildlife (WDFW) Aquatic Habitat Guidelines may serve as guidance for habitat management plans created to regulate the design, construction, and operation of projects that affect fish and wildlife conservation areas.

- B. The habitat management plan shall contain a map prepared at an easily readable scale, showing:
1. The location of the proposed development site;
 2. The relationship of the site to surrounding topography, water features, and cultural features;
 3. Proposed building locations and arrangements; and
 4. A legend which includes a complete legal description, acreage of the parcel, scale, north arrow, and date of map revision.
- C. The habitat management plan shall also contain a report which describes:
1. The nature and intensity of the proposed development;
 2. An analysis of the effect of the proposed development, activity or land use change upon the wildlife species and habitat identified for protection, **including impacts on buffer and building setbacks. and**
 3. **An analysis of any special management recommendations that will be implemented to ensure protection of the species and/or habitat.**

⁶⁶ Revisions recommended by Grette Associates.

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4. A plan which identifies how the applicant proposes to mitigate any adverse impacts to wildlife habitats created by the proposed development. **Mitigation measures are required where buffer reduction or intrusions into building setbacks are proposed, and shall include buffer enhancement.**

5. Assessment and evaluation of the effectiveness of the mitigation measures proposed.

6. Assessment and evaluation of ongoing management practices which will protect fish and wildlife habitat conservation areas after development of the project site, including monitoring and maintenance programs, and operation constraints.

7. Assessment of project impact or effect on water quality upon SF Dogfish Creek or any regulated stream, and any proposed methods or practices to avoid degradation of water quality.

D. ~~Possible mitigation measures to be included in the report, or required by the department, could include, but are not limited to:~~

1. Establishment of buffer zones;
2. Preservation of critically important plants and trees;
3. Limitation of access to habitat areas;
4. Seasonal restriction of construction activities; and
5. Establishment of phased development requirements and/or a timetable for periodic review of the plan.

D. E. This plan shall be prepared by a person who has been educated in this field and has professional experience as a fish or wildlife biologist.

16.20.735 Geotechnical report and geological report.

A. A geotechnical report shall include a description of the site geology, conclusions and recommendations regarding the effect of geologic conditions of the proposed development, opinions and recommendations of the adequacy of the site to be developed, the effects of groundwater interception and infiltration, seepage, potential slip plans, and changes in soil-bearing strength, and the impacts of the proposed development and appropriate mitigating measures. A geotechnical report may contain information obtained with subsurface investigative measures such as test pit digging, soil boring, water well installation or Dutch Cone Penetrometer investigations. Reports containing engineering design recommendations, i.e., recommendations for foundations (loading, sizing, depth, or settlement estimates), pile or pier design, retaining structures, or recommendations for construction on slopes steeper than thirty percent, must be prepared by, or in conjunction with, a licensed geotechnical engineer as defined below.

Informational requirements:

1. A description of the geologic setting of the region, based upon readily available data, including:
 - a. Site location and topography;

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- b. Soils and geologic units underlying the site; and
 - c. The location and characteristics of springs within one thousand feet of the site.
2. A discussion and evaluation of the potential impact of the proposal upon existing geological hazards.
 3. Recommendations on appropriate protection mechanisms, if necessary, to minimize the risk of erosion or landslide.

A geological report shall include the above, with the exception of engineering design recommendations, and need not make use of subsurface investigative measures. As the report will not include engineering recommendations, a geological report may be prepared by a geologist or **geotechnical engineer** as defined in subsection B of this section.

B. A geotechnical report shall be prepared by a geotechnical engineer (a civil engineer licensed by the state of Washington who is knowledgeable in regional geologic conditions and who has at least four years of professional experience in landslide and/or seismic hazard evaluation). Geological reports may be prepared by a geologist, engineering geologist or geotechnical engineer knowledgeable in regional geologic conditions and having at least four years of professional experience in site evaluation and development studies, and landslide and/or seismic hazard evaluation.

C. Report recommendations for siting structures in high risk areas shall be based on existing site conditions rather than measures that have not been successfully approved, designed or constructed (e.g., slope recontouring, slope retaining walls, vegetation improvements, bulkheads, etc.).

16.20.740 Hydrogeological report.

A hydrogeological report shall be required for certain proposed operations based on a consultation with the appropriate local and state agencies. The report shall address the impact the proposed land use will have on both the quality and quantity of the water transmitted to the aquifer. The report shall also address the types of pesticides and herbicides and fertilizers that can safely be used for the care of landscaping proposed by the applicant.

A. The report shall be submitted to the reviewing authority and address, at a minimum, the following criteria:

1. Surficial soil type and geologic setting;
2. Location and identification of wells within one thousand feet of the site;
3. Location and identification of surface water bodies and springs within one thousand feet of the site with recharge potential;
4. Description of underlying aquifers and aquitards, including water level, gradients and flow direction;
5. Available surface water and groundwater quality data;
6. Effects of the proposed development on water quality;
7. Sampling schedules required to assure water quality;
8. Discussion of the effects of the proposed development on the groundwater resource;

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9. Recommendations on appropriate BMPs (best management practices) or mitigation to assure no significant degradation of groundwater quality; and
 10. Other information as required by the Bremerton-Kitsap County health district.
- B. The hydrogeological report shall be prepared by a professional geologist/hydrologist or by a soil scientist with a strong background in geology as demonstrated by course work from an accredited college or university and/or a minimum of five years of experience.
- C. Applications for development or operations with underground storage of petroleum products will be processed using the appropriate procedure as specified in existing city of Poulsbo ordinances.
- D. Analysis for a specific parcel(s), using the criteria outlined below, will be employed to determine if the soils present require a recharge area designation. Data collection will include, at a minimum: six soil logs to a depth of ten feet (or to a depth of four feet below the lowest proposed excavation point, whichever is greater) for each acre in the parcel(s) being evaluated. At least one well which is two hundred feet or greater in depth with an adequate drilling report must be available within one mile. The associated data shall be analyzed and included in the hydrogeological report to determine the presence of highly permeable soils with the recharge area designation.
- E. For development proposals within aquifer recharge areas of concern, the hydrogeological report may be based on quarter-quarter section basis locations where the number of wells within a half-mile radius is thirty-six or more, and are designated aquifer recharge areas. To facilitate computer analysis, the evaluation may be done on a quarter-quarter basis using the quarter-quarter section in which a parcel of interest is located and all the surrounding quarter-quarter sections, in place of the half-mile circle.