

CALL TO ORDER – Call to Order, Agenda Review, Conflict Disclosure

PUBLIC COMMENT – Accept public comment on off agenda items

NEW/OLD BUSINESS

ADJOURN

CALL TO ORDER – Call to Order, Agenda Review, Conflict Disclosure

Vice Chair William Chester called the meeting to order at 6:04 PM. Commissioners in attendance were Maradel Gale, Jon Quitslund and Michael Killion. J. Mack Pearl, Michael Lewars and Lisa Macchio were absent and excused. City Staff present were Planning Director Gary Christensen, Water Resources Specialist Cami Apfelbeck, Senior City Planner Christy Carr and Administrative Specialist Jane Rasely who monitored recording and prepared minutes.

The agenda was reviewed. There were not any conflicts disclosed.

PUBLIC COMMENT – Accept public comment on off agenda items

None.

CRITICAL AREAS ORDINANCE

Senior City Planner Christy Carr introduced the agenda stating Water Resources Specialist Cami Apfelbeck would continue the discussion on aquifer recharge areas and the discussion would then move on to geologically hazardous areas with time for any questions the Commissioners may have on past topics.

Ms. Apfelbeck began reviewing the aquifer recharge portions of the Critical Areas Code prefacing her remarks by stating there were many jurisdictions with much more extensive aquifer recharge code in their critical areas ordinance than the City of Bainbridge Island. She also mentioned they did not want to make the permit process so onerous it was impossible to figure out the code. She also read new verbiage for Section 16.20 which was passed out to the Commissioners (see attached). Ms. Apfelbeck stated the changes Commissioners asked for would be incorporated and a new copy given to them at the next meeting.

Public Comment

Mike Juneau, Local Arborist – Stated he was passionate about getting smart regulations that worked in the field. He spoke about the vegetation code especially as concerned steep slopes as well as invasive non-native plants, specifically English ivy, English holly and both English and Portuguese laurel.

Ms. Carr spoke about the complexity of vegetation especially in critical areas and most especially on steep slopes. Commissioner Chester mentioned that staffing would have to be great in order to manage that level of detail. Discussion then moved on to geologically

hazardous areas with Ms. Carr stating many of the changes came from staff input. The difference between buffers and setbacks was commented upon. She asked the Commissioners if they wanted her to bring back options based upon what the code currently stated. They agreed to that. Fencing of buffers and whether or not setbacks were effective/necessary and factors of safety were discussed.

Commissioner Gale asked about the public comment in their packet so Ms. Carr led the Commission through a review of the comments. She also stated the plan was to have a public hearing on June 19, 2017.

Planning Director Gary Christensen went over the Planning Commission's schedule for the next five months.

NEW/OLD BUSINESS

Commissioner Gale asked about the Business/Industrial Zone so Mr. Christensen gave the Commission an update on what was occurring.

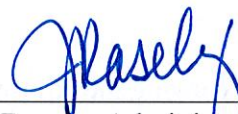
ADJOURN

The meeting was adjourned at 8:56 PM.

Approved by:



William Chester, Vice Chair



Jane Rasely, Administrative Specialist



CITY OF
BAINBRIDGE ISLAND

**CITY OF BAINBRIDGE ISLAND
PLANNING COMMISSION ~~PUBLIC HEARING~~
~~AND REGULAR MEETING~~**

SPECIAL June 1, 2017

PLEASE PRINT

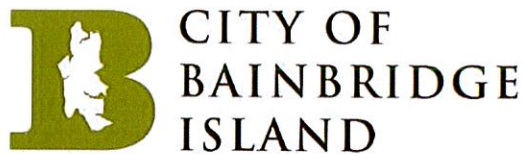
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Applicability. This section applies to any development or re-development proposing activities with the potential to generate a pollutant identified by the U.S. EPA as a potential source of drinking water contamination (Appendix A - Washington State Critical Aquifer Recharge Area Guidance Document) or known to be deleterious to the environment or human health. This section also applies to any development or re-development exceeding regulated activity thresholds established under Chapter 15.20.040.A BIMC.

This section does not apply to areas located within the city's shoreline jurisdiction, which are regulated by the city's shoreline master program (BIMC 16.12)

**PLANNING COMMISSION REVIEW PACKAGE
JUNE 1, 2017**

- Staff memo re: geologically hazardous areas
- BIMC 16.20.150 Geologically Hazardous Areas
- Proposed BIMC 16.20.090 Critical Aquifer Recharge Areas
- BIMC 15.20 Surface Water and Stormwater Management
- Public comments



DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

MEMORANDUM

Date: June 1, 2017
To: Planning Commission
From: Christy Carr, AICP
Senior Planner
Subject: Critical Areas Ordinance Update
Geologically Hazardous Areas

There is little new best available science (BAS) that will result in required revisions to regulatory language in the geologically hazardous areas section. The Department of Commerce *State Resources for the Growth Management Act Update of Comprehensive Plans and Development Regulations* (updated in September 2016) directs local jurisdictions to a number of mapping resources from various state and federal agencies. RCW 36.70A.030(9) provides an updated definition (2012) of geologically hazardous areas and WAC 365-190-120 describes the different types of hazardous areas (2010). Geologically hazardous areas include seismic hazards, tsunami hazards, landslide hazards, and areas prone to erosion hazards. The City currently has all of these hazards mapped with the exception of tsunami hazards. Any new data or mapping techniques will be incorporated into the City's geologically hazardous mapping data layers. Any revisions to descriptions or definitions from the updated RCW/WAC sections will also be addressed. Revisions will also include the recommendation in WAC 365-190-120 that critical facilities, such as hospitals and emergency response centers, should be restricted in hazard zones.

The majority of proposed revisions to the geologically hazardous areas section will be to improve clarity and organization of the section based on staff input (see below). Technical changes will be reviewed by the consultant retained by the City for that purpose, Aspect Consulting LLC. Proposed revisions will also address any policies from the 2017 Comprehensive Plan not already addressed in the current CAO (see below).

The proposed revisions will be largely "housekeeping" in nature. **Decision points for the Planning Commission on more policy-oriented potential changes include:**

- Buffers – Keep minimum buffer (50 feet or height of slope) or defer to geological assessment? Use term "setback" instead of "buffer" to differentiate between other critical area buffers (providing ecological protection) and geologically hazardous buffer (providing life safety and property/site protection).
- Structure setback – Specify what can be in structure setback, above and below ground, or consider eliminating a separate setback post-construction and include in either the minimum buffer or the buffer specified in the geological assessment.

- Factors of safety – Consider different factors of safety for different types of structures (e.g.; habitable vs. non-habitable structures, minor structures such as stairs).
- Vegetation removal activities – What requires geotechnical review in geologically hazardous areas? What can be removed from steep slopes (invasives, “weedy” trees at young age)? **Vegetation removal activities continue to be a significant issue for staff and the community. The code needs to be clarified and streamlined with the goal of increasing compliance without discouraging invasive species removal or healthy forest management.**
- Standards for existing development – What should be allowed in – or on – a geologically hazardous area? Same as all other critical areas (in buffer only, no expansion of footprint toward critical area)? Address “footprint” when upgrades needed for structural/seismic safety (may expand footing/foundation – is this the “footprint”?).

The technical implications (i.e.; life safety and property/site protection) of any proposed changes will be reviewed by the City’s consultant and presented at the June 19, 2017 Planning Commission meeting, prior to the public hearing.

Staff Input

- Review third party review requirement; make consistent with SMP
- Clarify development standards for historic landslide areas
- Include language addressing complexes – when buffers of hazards overlap, single hazard
- Clarify when erosion control plan is required
- Remove “information specified by the City Engineer”
- Remove review by Technical Review Committee – City does not use one
- Consider different factors of safety requirements for non-habitable structures
- Require assessments to include all modes of failure
- Review definition of “reasonable alternative” specific to geohazards
- Clarify what is allowed in building setback (below and at grade structures)
- Provide examples of LID required in zone of influence
- Requirement for exemptions need to be clarified (which standards need to be met)
- Clarify that meeting factors of safety means not decreasing hazard anymore that current conditions
- Consider “minor development” exemptions similar to SMP
- Need to differentiate new development vs. redevelopment/alteration
- Consider allowing septic systems in buffer
- Need thresholds for vegetation removal
- Hazard tree replacement tree language needs correction
- Vegetation removal needs to assess impacts on neighboring properties
- Need threshold on trimming and limbing; what requires geotech review?
- Add wet weather restrictions requirement

Comprehensive Plan Goals and Policies

Goal EN-8 Protect landslide hazard areas and erosion hazard areas from the impacts of use and development for the protection of public safety, property and the environment.

Policy EN 8.1 Avoid land uses on landslide hazard and erosion hazard areas. If the hazard caused by development can be mitigated, then design land use to prevent damage to persons or property and

environmental degradation and to preserve and enhance existing vegetation to the maximum extent possible.

Policy EN 8.2 As the degree of slope increases, decrease development intensity, site coverage, and vegetation removal to mitigate problems of drainage, erosion, siltation and landslides.

Policy EN 8.3 In order to protect landslide and erosion hazard areas from damage during construction and from intrusion following construction, an analysis by a geotechnical engineer and a certified arborist may be required.

Policy EN 8.4 Construct roads, driveways and utility corridors to preserve the integrity of the existing land forms, drainage ways, and natural systems minimizing impact to the landslide and erosion hazard areas. Utilize common access drives and utility corridors where feasible.

Policy EN 8.5 Allow clearing, grading or filling on sloped areas containing landslide hazard and erosion hazard areas only when other alternatives are not feasible and when it will not destabilize those areas. Such activity is limited to the dry period of the year.

Policy EN 8.6 Any alteration of a landslide hazard area or erosion hazard area may not increase the rate of surface water discharge or sedimentation and may not decrease slope stability on adjacent property. Landscape the altered area to provide erosion control.

Goal EN-9 Identify and map areas that are at risk due to seismic activity and regulate activities in these areas for public safety and property protection.

Policy EN 9.1 Consider the best available science in mapping these high-risk areas and in regulating and permitting land use activities in areas that have a heightened risk from earthquakes such as liquefaction areas and fault rupture zones, tsunami or other geological hazards.

Policy EN 9.2 Consider tsunami hazards in regulating land use activities on Bainbridge Island.

Policy EN 9.3 Consider seismic activity and the potential for earthquake-induced landslides in the determination of geologically hazardous areas. Areas that are stable under normal conditions can become landslides during earthquake events.

Policy EN 9.4 Provide information and educational opportunities to the citizens of Bainbridge Island on the hazards posed by seismic events.

16.20.150 Geologically hazardous areas.

A. General. Geologically hazardous areas include erosion hazard areas, landslide hazard areas, and seismic hazard areas. Zone of influence areas are not considered geologically hazardous areas.

B. Purpose. The intent of this section is to prevent the potential for personal injury or loss of life or property due to flooding, erosion, landslides, seismic events, or soil subsidence. Development must not increase slope instability, and must avoid on-site and off-site impacts, as well as potential risk to structures. Preserving the existing vegetation may be an important part of minimizing those risks.

C. Classification. Geologically hazardous areas shall be classified based upon landslide history and the presence of unstable soils, steepness of slopes, erosion potential, and seismic hazards. Areas in this category are a potential threat to public health, safety, and welfare when construction is allowed. While some potential risk due to construction can be reduced through structural engineering design, construction in these areas should be avoided when the potential risk cannot be reduced to a level comparable to the risk if the site were initially stable prior to construction. Classification and rating shall be based upon the risk to the environment and to development in geologically hazardous areas.

D. Minimum Submittal Requirements.

1. All geologically hazardous areas and buffers.

a. Indemnification. An indemnification or hold harmless agreement shall be required for all projects in geologically hazardous areas and buffers except erosion hazard areas and tsunami hazard areas. The form of the agreement shall be approved by the City and executed prior to the commencement of construction or site alteration.

b. Notice. A notice of intent to construct on a landslide hazard area or reduce the minimum buffer in a landslide hazard area shall be given pursuant to BIMC 2.16.085.C.2. The notice of intent shall be issued within 14 days of a completed application pursuant to BIMC 2.16.055. The notice shall include a 21-day comment period and no permits or approval of reduced buffers shall be issued before the end of the comment period.

c. All reports or analyses required or prepared pursuant to this Section shall be prepared pursuant to BIMC 16.20.090, 16.20.150, and/or any other applicable provisions of this chapter, and shall meet the satisfaction of, and be approved by, the City Engineer prior to the commencement of any development activity.

d. To protect public health, safety and welfare, the City Engineer may call for a third party review of any geotechnical report in cases where there may be potential for substantial damage to life, property or the environment should the proposed engineering solution fail. When a third party review is required, costs incurred for

a qualified third party geotechnical engineer to perform the review shall be borne by the applicant.

e. Geological Hazards Assessment. A Critical Area report is required for all projects in geologically hazardous areas and buffers and shall contain an assessment of geological hazards including the following site- and proposal-related information at a minimum:

i. Site and Construction Plans. The report shall include a copy of the site plans for the proposal showing:

- A. The type and extent of geologic hazard areas, any other Critical Areas, and buffers on, adjacent to, or within a zone or distance of potential significant influence as determined by a professional engineer/ geologist;
- B. Proposed development, including the location of existing and proposed structures, fill, storage of materials, and drainage facilities, with dimensions indicating distances to the floodplain, if available;
- C. The topography, as determined by a professional engineer or geologist, of the project area and all hazard areas addressed in the report; and
- D. Clearing limits.

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

- A. A description of the surface and subsurface geology, hydrology, soils, and vegetation found in the project area and in all hazard areas addressed in the report;
- B. A detailed overview of the field investigations, published data, and references; data and conclusions from past assessments of the site; and site specific measurements, test, investigations, or studies that support the identification of geologically hazardous areas; and
- C. A description of the vulnerability of the site to seismic and other geologic events.

iii. Analysis of Proposal. The report shall contain a hazards analysis including a detailed description of the project, its relationship to the geologic hazard(s), and its potential impact upon the hazard area, the subject property, and affected adjacent properties.

iv. Minimum Buffer and Building Setback. The report shall make a recommendation for the minimum no-disturbance buffer and minimum building setback from any geologic hazard based upon the geotechnical analysis. Where the recommended buffers are less than the standard buffers set forth in section 16.20.150(E) of BIMC, the rationale and basis for the reduced buffer shall be

clearly articulated and demonstrate that the protection standard set forth in that section has been met.

2. Landslide Hazard and Erosion Hazard Areas. In addition to the basic Critical Areas report, a Critical Area report for an erosion hazard or landslide hazard area shall include the following information at a minimum:

- a. Erosion Control. An erosion control plan prepared by a civil engineer shall be submitted to the City prior to the issuance of a clearing or grading permit.
- b. The applicant shall provide a geotechnical analysis containing the following information:

- i. Site Plan. The Critical Area report shall include a copy of the site plan for the proposal showing:

- A. The height of slope, slope gradient, and cross-section of the project area;
 - B. The location of springs, seeps, or other surface expressions of ground water on or a zone or distance of potential significant influence as determined by a professional engineer/ geologist; and
 - C. The location and description of surface water run-off features.

- ii. Hazards Analysis. The hazards analysis component of the Critical Areas report shall specifically include:

- A. A description of the extent and type of vegetative cover;
 - B. A description of subsurface conditions based on data from site-specific explorations;
 - C. Descriptions of surface and ground water conditions, public and private sewage disposal systems, fills and excavations, and all structural improvements;
 - D. An estimate of slope stability and the effect construction and placement of structures will have on the slope over the estimated life of the structure;
 - E.. An estimate of the bluff retreat rate that recognizes and reflects potential catastrophic events such as seismic activity or a one hundred-year storm event;
 - F. Consideration of the run-out hazard of landslide debris and/or the impacts of landslide run-out on down slope properties;
 - G. A study of slope stability including an analysis of proposed cuts, fills, and other site grading;
 - H. Recommendations for building siting limitations; and
 - I. An analysis of proposed surface and subsurface drainage, and the vulnerability of the site to erosion.

- iii. Geotechnical Engineering Report. The technical information for a project within a landslide hazard area shall include a geotechnical engineering report prepared by a licensed engineer that presents engineering recommendations for the following:

- A. Parameters for design of site improvements including appropriate foundations and retaining structures. These should include allowable load and

resistance capacities for bearing and lateral loads, installation considerations, and estimates of settlement performance;

B. Recommendations for drainage and subdrainage improvements;

C. Earthwork recommendations including clearing and site preparation criteria, fill placement and compaction criteria, temporary and permanent slope inclinations and protection, and temporary excavation support, if necessary; and

D. Mitigation of adverse site conditions including slope stabilization measures for seismically unstable soils, surface water management, location and methods of erosion control, a vegetation management and/or replanting plan, and/or other means for maintaining long-term soil stability if appropriate.

3. Seismic Hazards Areas. In addition to the basic report requirements, a Critical Area report for a seismic hazard area shall also meet the following requirements:

a. Fault Hazard. The applicant shall provide a geologic/geotechnical analysis containing information specified by the City Engineer that documents the presence or absence of any surface deformation on the site in areas mapped by the City. If deformation is located, the applicant shall provide a geotechnical analysis containing information specified by the City Engineer, which concludes that the development proposal as mitigated meets the standards of this section.

b. Liquefaction Hazard. The applicant shall provide a geotechnical analysis containing information specified by the City Engineer that meets the standards of this section (as mitigated).

c. Seismic Landslide Hazard. The applicant shall provide the same analysis and plan as required for landslide hazard areas, pursuant to BIMC 16.20.150(D)(1)(h)(1).

4. Tsunami Hazards. The City shall provide applicants for development in low lying shoreline areas and other areas where flood elevation is controlled by tide level with information on tsunami hazards.

5. Zone of Influence Areas beyond the established buffer. The applicant shall have the surface and storm water management plan for the project reviewed by a geotechnical engineer to determine if there is any potentially adverse impacts to the landslide hazardous area. If the geotechnical engineer or the City Engineer determines that there are potential adverse impacts, the applicant shall provide a geotechnical analysis containing information specified by the City Engineer which analyzes the potential impacts to the geological hazard from the proposed development in the zone of influence and meets the standards of this section. The report shall contain recommendations to avoid adverse impacts to the geologically hazardous area. Concentrated discharge of stormwater shall only be allowed where specially recommended in the report and authorized by the City Engineer."

E. Development Standards.

1. General Requirements. The City Engineer shall establish administrative procedures to implement BIMC 16.20.150. These procedures shall include review by an administrative Technical Review Committee if the development is proposed in a landslide hazard area and/or its buffer. The Technical Review Committee shall include a civil engineer, a geologist or geotechnical engineer and hydrologist. Where landslide areas are associated with other critical areas in shall also include an experienced biologist, ecologist or wetland

specialist. The City Engineer must document in the file those involved in the Technical Review Committee and their expertise. The applicant shall meet the following standards for all activities permitted in geologically hazardous areas or associated buffers:

- a. The proposed activity shall not create a net increase in geological instability, either on- or off-site, which is defined as follows:
 - i. The subject parcel shall not be less stable after the planned development than before; and
 - ii. The adjacent parcels shall not have greater risk or be less stable after the planned development than before.
- b. The proposed activity shall not increase the risk of life safety due to geological hazards above professionally acceptable levels.
- c. The proposed activity shall not increase the risk due to geological hazards above professionally acceptable levels for:
 - i. Property loss of any habitable structures or their necessary supporting infrastructure on-site or;
 - ii. Risk to any off-site structures or property of any kind; and
- d. Proposed buildings shall be constructed using appropriate engineering methods that respond to the geologic characteristics specific to the site in order to achieve the highest standard of safety feasible.
- e. The proposed development shall not decrease the factor of safety for landslide occurrences below the limits of 1.5 for static conditions and ± 1.0 for dynamic conditions. Analysis of dynamic conditions shall be based on the minimum horizontal acceleration for the probabilistic maximum considered earthquake as established by the currently adopted version of the International Building Code.
- f. The proposed activity shall not further degrade the values and functions of the associated critical areas.

2. Development Design and Location.

The following requirements shall apply to any land or vegetation modification or construction within a landslide hazard area and/or its buffer as described herein:

a. Buffer Requirement: A buffer equal to the height of the slope or fifty (50) feet, whichever is greater, shall be established from all edges of a landslide hazard area except where no other reasonable alternative exists, reduction may be allowed as follows:

i. Buffer Reduction.

A. Buffer reductions may be allowed provided a critical areas report, pursuant to BIMC 16.20.150(D)(1)(2) and any other related section of BIMC 16.20, demonstrates to the Director that the buffer reduction will not reduce the level of protection to the proposed development, adjacent properties, and other associated critical areas as required by BIMC 16.20.150(E)(1).

B. For slopes forty (40) percent or greater the buffer may in no case be reduced to less than ten (10) feet. A decision by the Director to reduce the buffer shall be based on a critical areas report pursuant to BIMC 16.20.150(D)(1)(2) that includes a third-party independent review by a qualified geotechnical engineer pursuant to BIMC 16.20.150(D)(1)(d);

ii. Increased Buffer. The buffer may be increased beyond that specified in subsection (a) above if the Director determines a larger buffer is necessary to prevent risk of damage to proposed development, adjacent development, and uses and the associated critical areas;

iii. Building Setback. All building and structures shall have a minimum setback of (15) feet from the outer edge of the buffer around landslide hazard areas to allow for construction activity; and

iv. Vegetation Retention. 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.

b. All development proposals shall be designed to avoid impacts to the geologically hazardous areas. The development shall be designed to minimize the footprint of building in other disturbed areas, minimize removal of vegetation, minimize topographic change, and retain open space to the maximum extent practicable;

c. Development design shall utilize clustering, under-structure parking, multi-level construction, and tiered foundations to the extent feasible to minimize impervious lot coverage, slope disturbance, and changes to the natural topography;

d. Access shall be in the least sensitive part of the site, and common access drives and utility corridors are required to the extent feasible;

e. Roads, walkways and parking areas shall be designed to parallel the natural contours to the extent feasible;

f. All proposed clearing and tree removal shall be marked in the field for inspection and approval prior to alteration of the site;

g. Cut and fill slopes shall be prepared and maintained to control against erosion and instability; and

h. Drainage and stormwater designs in zones of influence shall incorporate elements of low impact design, to the extent feasible, and shall be designed in such a manner that stormwater outlet discharges do not create additional impacts.

i. Landslide hazard areas on slopes forty (40) percent or greater shall only be altered as allowed by the exemptions listed in 16.20.150(F). A landslide or erosion hazard area, located on a slopes less than forty (40) percent, may only be altered pursuant to the standards of BIMC 16.20.150(E)(1).

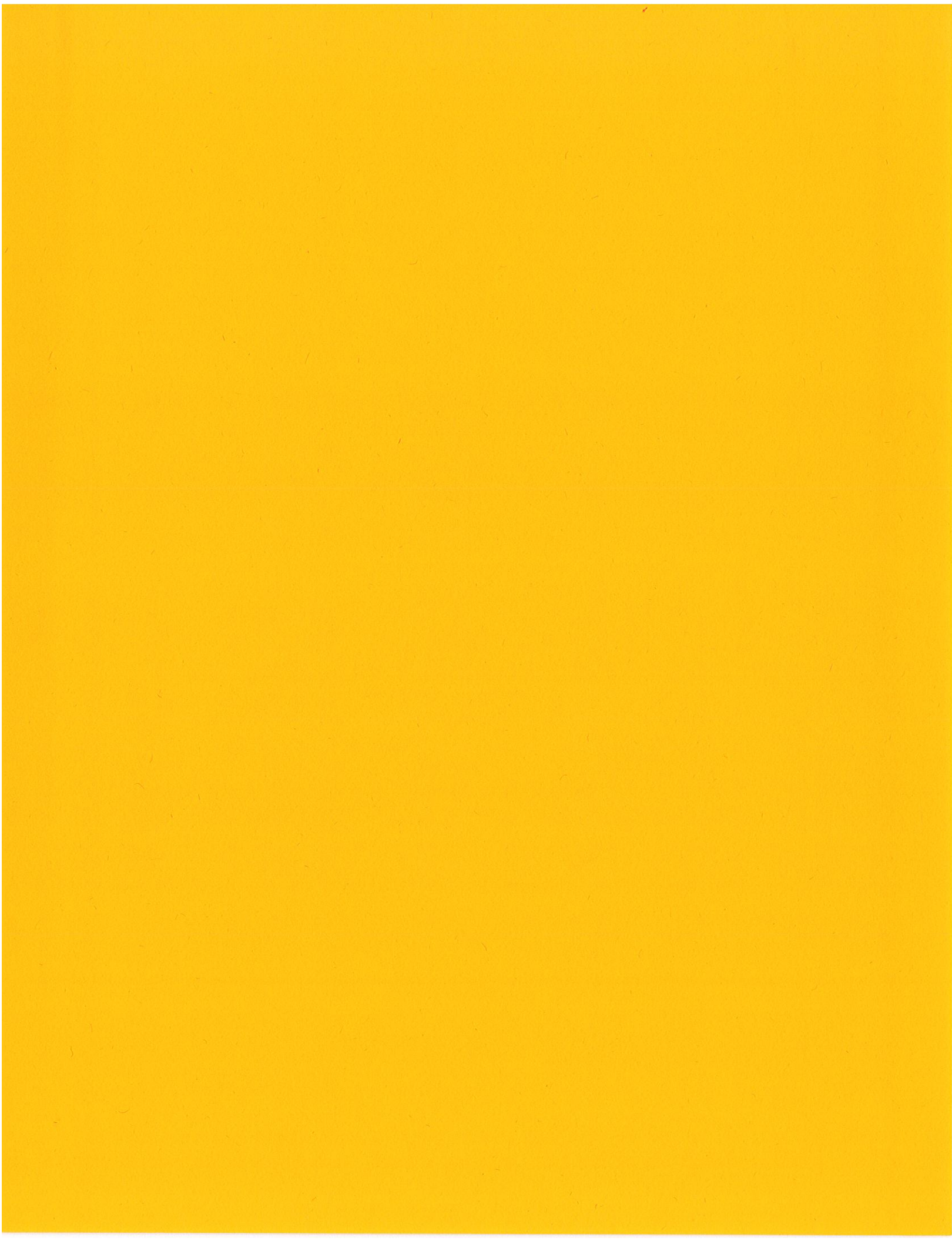
F. Exemptions. The following activities are permitted in geologically hazardous areas or associated buffers; provided, that the applicant can demonstrate that applicable standards in Subsection 16.20.150(E)(1) can be met, or where the applicant has demonstrated through

a Critical Areas report prepared by a geotechnical engineer in accordance with the specifications of the City Engineer that no adverse impact will result from the proposal and where approved surface water drainage will result in minimum slope and vegetation disturbance:

1. Structural alteration to an existing legally constructed structure that does not increase the structural footprint and are determined by the City Engineer as having a minimal potential for increasing landslide hazard;
2. Surface Water Management: Slopes or buffers may be used for approved surface water conveyance if no other reasonable alternative route is available. Installation techniques shall minimize disturbance to the slope and vegetation.
3. The construction of approved public or private trails; provided, they are constructed of material, for example cable lift access, which will not contribute to surface water runoff;
4. The construction of public or private utility corridors or streets; provided, it has been demonstrated that such alterations will not increase landslide or erosion risks through required analysis pursuant to 16.20.150(D)(1) and the City determines that no other feasible alternative exists;
5. Select Vegetation Removal Activities. The following vegetation removal activities are allowed, provided that no vegetation shall be removed from a geologically hazardous area or its buffer without approval from the Director;
 - a. Removal of noxious weeds using non-motorized equipment or light equipment if approved by the Director. If herbicides are used to control these weeds, a licensed applicator is required, unless otherwise authorized by the Director. Bare areas remaining after weed removal shall be re-vegetated with native plant species pursuant to an enhancement plan approved by the City.
 - b. Removal and pruning of hazard trees as defined ISA (International Society of Arboriculture) standards by provided that a ISA certified arborist documents the hazard and provides a report to the Director for review and approval. The landowner shall replace any cut tree with three replacement trees (3:1 replacement ratio) six months prior to tree removal with trees at six feet in height and 4 inches in diameter, in accordance with an approved replacement plan. The Director may require a second opinion from a certified ISA arborist in cases of removal of hazard trees. Replacement trees shall be native species indigenous to the vicinity and approved by the Director. Size of trees shall be approved by the Director. The landowner shall ensure 100% survival of replacement trees
6. The trimming and limbing of vegetation for the creation and maintenance of view corridors in accordance with the pruning standards of the International Society of Arboriculture; provided, that the soils are not disturbed and activity will not increase the risk of landslide or erosion. All vegetation removal must be based on

a plan developed by a certified arborist and reviewed by a geotechnical engineer to determine if it will impact slope stability.

7. Limited Exemption - For landslide areas 40% or greater with a vertical elevation change of up to twenty (20) feet may be exempted from 16.20.150(E)(2)(i) based on the City review and acceptance of a Critical Areas report from a geologist or licensed geotechnical engineer in accordance with 16.20.150(D) when no adverse impact will result from the exemption.



Chapter 16.20

CRITICAL AREAS

16.20.120090 Aquifer recharge areas.

A. Applicability. This section applies to all critical aquifer recharge areas as classified in BIMC 16.20.090.B except those located within the city's shoreline jurisdiction, which are regulated by the city's shoreline master program (BIMC 16.12).

AB. Classification. The entirety of Bainbridge Island is classified as critical aquifer recharge area for the Island's aquifer system. The entirety of Bainbridge Island is the recharge area for the island aquifers. Certain uses must be carefully evaluated before being approved, and others must be prohibited, in order to protect the city's aquifers, due to the following:

1. Bainbridge Island is dependent upon its aquifers as the sole and essential source for drinking water. Critical recharge areas have the potential to affect potable water where an essential source of drinking water is vulnerable to contamination.
2. The island aquifers are vulnerable to pollution that has the potential to create a significant public health hazard. High vulnerability is indicative of land uses which produce contaminants that may degrade groundwater and low vulnerability is indicative of land uses which will not.
3. Susceptibility to pollution is a function of depth of groundwater, permeability of soils, soil types, presence of potential sources of contamination and any other relevant factors.
4. Soil types that transfer water to the aquifer are rated in terms of infiltration rate. Soil types with the high infiltration rates are associated with areas of high aquifer recharge. The rates and soil types are defined by the U.S. Department of Agriculture, Soil Conservation Service, in the Soil Survey of Kitsap County.
5. The island aquifers are vulnerable to a reduction in recharge from activities that reduce the infiltration rate on a site.

C. Permit review and procedures

1. Any development, use or activity shall require a critical area permit unless it qualifies as an exempt activity, as provided in BIMC 16.20.XX.
2. Critical area permits shall be reviewed pursuant to the criteria in BIMC 16.20.XX.

3. Applications for critical area permits for aquifer recharge areas shall include:

a. City of Bainbridge Island Master Land Use Application (hyperlink); and

b. Site Assessment meeting the requirements of BIMC 16.20.170, Critical area reports.

i. All proposed new and re-development shall require a site assessment identifying all potential impacts of the proposed land use or activity to groundwater or surface water quality and quantity as described in 16.20.170.X. If the applicant has completed a Site Assessment Review (SAR) in accordance with Chapter 15.19 BIMC that includes those elements listed in 16.20.170.X, the SAR will suffice to fulfill this requirement. Additional in-depth site assessment elements as detailed in 16.20.170.X may be required upon review of the site assessment.

ii. All site assessments must be prepared and stamped by a professional hydrogeologist licensed in Washington State in accordance with RCW 18.220 and WAC 308-15. Affected public water purveyors (Group A & B), affected Tribes, and the Kitsap Public Health District will be notified and invited to comment on all site assessments. The City will consider all recommendations submitted by these entities when considering permit conditions.

iii. The City may require third-party independent review by a professional hydrogeologist of any required application materials.

c. Aquifer recharge mitigation plan, meeting the requirements of BIMC 16.20.170, Critical area reports, if aquifer recharge impacts are identified in the site assessment.

D. Prohibited Activities and Uses. The following activities and uses are prohibited due to the probability or potential magnitude of their adverse effects on groundwater:

1. Landfills. Landfills, including hazardous or dangerous waste, municipal solid waste, special waste, wood waste, and inert and demolition waste landfills;

2. Underground Injection Wells. Class I, III, and IV wells and subclasses 5F01, 5D03, 5F04, 5W09, 5W10, 5W11, 5W31, 5X13, 5X14, 5X15, 5W20, 5X28, and 5N24 of Class V wells;

3. Chemical wood preservation and/or treatment facilities;

4. Storage, Processing, or Disposal of Radioactive Substances. Facilities that store (other than minor sources such as medicinal uses or industrial testing devices), process, or dispose of radioactive substances;

5. Hazardous liquid transmission pipelines;

6. Commercial mining and washing of metals, hard rock, sand, and gravel;

7. Hydrocarbon extraction, reprocessing, refinement, and storage;

8. Electroplating/metal finishing;

9. Facilities that treat, store, process, or dispose of hazardous waste; and

10. Other Prohibited Uses or Activities.

a. Activities that would significantly reduce the recharge to aquifers currently or potentially used as a potable water source; and

b. Activities that would significantly reduce the recharge to aquifers that are a source of significant baseflow to a stream.

E. Aquifer recharge areas impact mitigation.

1. No development, use or activity may cause exceedance of the water or sediment quality standards or otherwise violate the anti-degradation requirements specified in WAC Chapters 173-200, 173-201A, and 173-204.

2. Where determined to be necessary through the site assessment process, critical area permit approvals shall include conditions designed to prevent significant degradation of groundwater and surface water quality and quantity.

3. For proposals requiring aquifer recharge area impact mitigations, the applicant shall submit a mitigation plan meeting the requirements of 16.20.170, Critical area reports.

These two sections will be in 16.20.170, Critical area reports

Aquifer recharge areas site assessment requirements.

The site assessment shall include:

- a. A site map drawn to scale which indicates the location of known or geologically representative wells (abandoned and active), springs, and surface water features within 1,000 feet of the project property;
- b. A description of the site-specific hydrogeological characteristics. At a minimum this will include a description of the lithology, depth and static water level of known underlying aquifer(s), and depiction of groundwater flow direction and patterns on the site map;
- c. A description of the proposed land use and activities specifically detailing water consumption; an inventory of all chemical use, storage, transportation, production (including process wastewater), and disposal; and any potential pollutant identified by the U.S. EPA as a potential source of drinking water contamination (Appendix A of the Washington State Critical Aquifer Recharge Area Guidance Document) or known to be deleterious to the environment or human health; and
- d. A general discussion of surface and groundwater quality and quantity in the area and the identification of the potential adverse quality and quantity impacts to groundwater and surface water features within 1,000 feet of the project.

2. In-depth Site Assessment Elements. The required elements of the in-depth site assessment for a given development or re-development will be based on the initial site assessment review by City Planning and Community Services, the Kitsap Public Health District, affected Tribes, and affected public water purveyors.

One or more of the elements listed below may be required based upon the proposed project activity, complexity of underlying hydrogeological conditions, and the perceived potential to adversely impact groundwater or surface water quality or quantity. One or more of these elements may also be required if the applicant chooses to demonstrate that mitigation

measures are not necessary to protect the quantity or quality of groundwater or surface water or that the project does not pose a detrimental risk to groundwater or surface water.

Additional in-depth site assessment elements include:

- a. Lithologic characteristics and stratigraphic relationships of the affected aquifer(s) and overlying geologic units and soil types including thickness, horizontal and vertical extent, permeability, and infiltration rates of surface soils.
- b. Delineation of identified structural features such as faults, fractures, and fissures.
- c. Aquifer characteristics including determination of recharge and discharge areas, transmissivity, storage coefficient, hydraulic conductivity, porosity, and estimate of groundwater flow direction, velocity and patterns for the affected aquifer(s).
- d. Estimate of precipitation and evapotranspiration rates for the project area.
- e. Preparation of appropriate hydrogeological cross sections depicting underlying lithology and stratigraphy, aquifer(s), and potential or probable contaminant pathways to both surface and groundwater from a chemical release.
- f. Determination of background or existing groundwater quality underlying the project area and water quality of surface water bodies.
- g. Contaminant fate and transport including probable migration pathways and travel time of potential contaminant release(s) from the site through the unsaturated zone to the aquifer(s) and through the aquifer(s), and how the contaminant(s) may be attenuated within the unsaturated zone and the aquifer(s) with consideration to advection, dispersion, and diffusion of contaminants in the groundwater.
- h. Delineation of areas potentially affected by contaminant migration on the ground surface and/or through potentially affected aquifer(s).
- i. Determination of the degree of continuity between groundwater and nearby surface water including potential impacts to baseflow in streams from proposed groundwater withdrawals, and potential impacts to surface water quality from site runoff or contaminated groundwater discharge.
- j. Assessment of the potential for pumping-induced seawater intrusion.

k. Nitrate Loading Assessment. For projects that have the potential to adversely impact groundwater quality by nitrate loading, the applicant shall test existing wells and/or required test wells for nitrate as nitrogen and calculate the current and projected future groundwater nitrate concentrations at full project build-out, at appropriate point(s) of compliance, as determined by project characteristics, and in a methodology approved by the City. If the calculated nitrate loading in the intended water supply equals or exceeds 5 milligrams per liter nitrate as nitrogen, the applicant shall develop a mitigation plan with the point(s) of compliance determined based on project characteristics.

l. Multiple-stage (or phased) development must consider impacts of the total build-out of the project in terms of critical aquifer recharge areas protection to allow for an assessment of the cumulative impacts of the entire development.

Mitigation Plan Elements.

For proposals requiring aquifer recharge area impact mitigations, the applicant shall develop for approval by the City a mitigation plan for the proposed development. Affected public water purveyors (Group A & B), affected Tribes, and the Kitsap Public Health District will be notified and invited to comment on all mitigation plans. The City will consider all recommendations submitted by these entities when developing appropriate permit conditions.

The City may, based on performance criteria and monitoring results, require additional amendments to the plan. The City reserves the right to submit mitigation plans for a third-party review at the applicant's expense and to reject any proposed land use or activity that poses significant risk to groundwater or surface water quality or quantity that cannot be satisfactorily mitigated.

The mitigation plan shall contain the project's permit conditions and, as applicable:

- a. A description of the mitigation measures to be taken, how they will be implemented, and performance criteria.
- b. A groundwater and surface water monitoring program to measure potential impacts of the development to underlying aquifer(s) and surface water. The monitoring plan will describe monitoring, maintenance, and reporting requirements.

c. A contingency plan describing spill response and corrective actions to be taken if a release occurs or monitoring results indicate that mitigation measures are not effectively protecting groundwater and surface water resources and human health. The City shall have the authority to impose additional required corrective actions where such measures are necessary to protect groundwater and surface water resources or human health. Where appropriate contingencies are not feasible and result in an activity posing unacceptable risk to groundwater or surface water resources or human health, the City shall deny the proposal.

d. Multiple-stage (or phased) development must consider mitigation for each phase of development as well as the total build-out of the project in terms of critical aquifer recharge areas protection to allow for an assessment of the cumulative impacts of the entire development.

e. Conditions that would precipitate ceasing the project operation altogether.

f. Wellhead Protection Mitigation. Where a wellhead protection plan addressing the project area exists, the City shall use the recommendations contained in the wellhead protection plan as a basis for formulating required mitigation measures. In the absence of such a mitigation plan, the City shall contact the owner of the public water system (Group A and B) impacted by the proposed project and jointly develop mitigation measures, a summary of which shall be signed by the applicant and recorded with the applicant's property title.

g. Nitrate Loading Mitigation.

i. General Requirements. If a calculated nitrate loading concentration for a project at the designated point(s) of compliance per 16.20 120.C.2.k is equal to or greater than 5 milligrams per liter nitrate as nitrogen, then the applicant shall be required to place a notification on the documents of title for the property affected and a monitoring plan shall be developed to monitor the nitrate level and include a contingency plan to be implemented if the nitrate level exceeds 10 milligrams per liter nitrate as nitrogen.

ii. Land Divisions. If the calculated nitrate loading concentration for a land division at the designated point(s) of compliance per 16.20 120.C.2.k is equal to or greater than 5 milligrams per liter nitrate as nitrogen, then the applicant shall:

(A) Develop a mitigation plan to minimize the nitrate loading rate; and

(B) Develop a contingency plan to be implemented if the nitrate concentration exceeds 10 milligrams per liter nitrate as nitrogen; and

(C) Place notification on the plat stating that mitigation and contingency plans exist.

iii. Mitigation of nitrate in groundwater from on-site septic systems may include decreasing the density of septic system drainfields.

2. Recording of Mitigation Plan Summaries.

a. General Requirements. The City may require that the applicant record a City-approved summary of the mitigation plan on the property title. A copy of the recorded summary shall be provided to the City in hard copy and electronic format. If a property owner can demonstrate, to the satisfaction of the City, that mitigation measures are no longer necessary, the City shall approve the addition of language on the title for the property nullifying the mitigation requirements.

b. Land Divisions. The City shall require the applicant for a land division to record the mitigation plan as part of the plat notes. If the mitigation plan is not recorded as or referenced by a plat note, the applicant shall record the mitigation plan on the affected property title(s).

~~B. Hydrogeologic Assessment. The following proposed activities will require the preparation of a hydrogeologic assessment:~~

~~1. The use of hazardous substances, other than household chemicals used according to the directions specified on the packaging for domestic applications;~~

~~2. The use of injection wells, including on-site septic systems, except those domestic septic systems releasing less than 14,500 gallons of effluent per day; or~~

~~3. Any other activity determined by the director likely to have an adverse impact on groundwater quality or quantity or on the recharge of the aquifer.~~

~~C. Hydrogeologic Assessment Requirements. A hydrogeologic assessment shall include, at a minimum, the following site and proposal-related information:~~

1. Available information regarding geologic and hydrogeologic characteristics of the site including the surface location of all critical aquifer recharge areas located on-site or immediately adjacent to the site, and permeability of the unsaturated zone;
2. Groundwater depth, flow direction, and gradient based on available information;
3. Currently available data on wells and springs within 1,300 feet of the project area;
4. Location of other critical areas, including surface waters, within 1,300 feet of the project area;
5. Available historic water quality data for the area to be affected by the proposed activity;
6. Best management practices proposed to be utilized to protect groundwater quality; and
7. Low impact development practices designed to maintain infiltration rates to the underlying aquifers.

D. Performance Standards—Specific Uses:

1. Storage Tanks. All storage tanks proposed in a critical aquifer recharge area must comply with local building code requirements and must conform to the following requirements:

a. Underground Tanks. All new underground storage facilities proposed for the storage of hazardous substances or hazardous wastes shall be designed and constructed so as to:

- i. Prevent releases due to corrosion or structural failure for the operational life of the tank;
- ii. Be protected against corrosion, constructed of noncorrosive material, steel clad with a noncorrosive material, or designed to include a secondary containment system to prevent the release or threatened release of any stored substances; and
- iii. Use material in the construction or lining of the tank that is compatible with the substance to be stored.

b. Above Ground Tanks. All new above-ground storage facilities proposed for the storage of hazardous substances or hazardous wastes shall be designed and constructed so as to:

- i. Not allow the release of a hazardous substance to the ground, groundwaters, or surface waters;
- ii. Have a primary containment area enclosing or underlying the tank or part thereof; and

iii. ~~A secondary containment system either built into the tank structure or a dike system built outside the tank for all tanks.~~

~~2. Vehicle Repair and Servicing.~~

a. ~~Vehicle repair and servicing must be conducted over impermeable pads and within a covered structure capable of withstanding normally expected weather conditions. Chemicals used in the process of vehicle repair and servicing must be stored in a manner that protects them from weather and provides containment should leaks occur.~~

b. ~~No dry wells shall be allowed on sites used for vehicle repair and servicing. Dry wells existing on the site prior to facility establishment must be abandoned using techniques approved by the State Department of Ecology prior to commencement of the proposed activity.~~

3. ~~Residential Use of Pesticides and Nutrients. Application of household pesticides, herbicides, and fertilizers shall not exceed times and rates specified on the packaging.~~

4. ~~Use of Reclaimed Water for Surface Percolation or Direct Recharge. Water reuse projects for reclaimed water must be in accordance with the adopted water or sewer comprehensive plans that have been approved by the State Departments of Ecology and Health.~~

a. ~~Use of reclaimed water for surface percolation must meet the groundwater recharge criteria given in RCW 90.46.080(1) and 90.46.010(10). The State Department of Ecology may establish additional discharge limits in accordance with RCW 90.46.080(2).~~

b. ~~Direct injection must be in accordance with the standards developed by authority of RCW 90.46.042.~~

5. ~~State and Federal Regulations. The uses listed below shall be conditioned as necessary to protect critical aquifer recharge areas in accordance with the applicable state and federal regulations.~~

~~Table 1: Statutes, Regulations, and Guidance Pertaining to Groundwater Impacting Activities~~

Activity	Statute—Regulation—Guidance
Above-Ground Storage Tanks	WAC <u>173-303-640</u>

Table 1: Statutes, Regulations, and Guidance Pertaining to Groundwater Impacting Activities

Activity	Statute—Regulation—Guidance
Animal Feedlots	Chapters <u>173-216</u> , <u>173-220</u> WAC
Automobile Washers	Chapter <u>173-216</u> WAC, Best Management Practices for Vehicle and Equipment Discharges (Washington Department of Ecology WQ-R-95-56)
Below Ground Storage Tanks	Chapter <u>173-360</u> WAC
Chemical Treatment Storage and Disposal Facilities	WAC <u>173-303-182</u>
Hazardous Waste Generator (<i>Boat Repair Shops, Biological Research Facility, Dry Cleaners, Furniture Stripping, Motor Vehicle Service Garages, Photographic Processing, Printing and Publishing Shops, etc.</i>)	Chapter <u>173-303</u> WAC
Injection Wells	Federal <u>40</u> CFR Parts <u>144</u> and <u>146</u> , Chapter <u>173-218</u> WAC
Junk Yards and Salvage Yards	Chapter <u>173-304</u> WAC, Best Management Practices to Prevent Storm Water Pollution at Vehicles Recycler Facilities (Washington State Department of Ecology No. 94-146)
Oil and Gas Drilling	WAC <u>332-12-450</u> , Chapter <u>173-218</u> WAC
On-Site Sewage Systems (Large Scale)	Chapter <u>173-240</u> WAC

Table 1: Statutes, Regulations, and Guidance Pertaining to Groundwater-Impacting Activities

Activity	Statute—Regulation—Guidance
On-Site Sewage Systems (<14,500 gal./day)	Chapter 246-272 WAC, Local Health Ordinances
Pesticide Storage and Use	Chapters 15.54 , 17.21 RCW
Sawmills	Chapters 173-303 , 173-304 WAC, Best Management Practices to Prevent Storm Water Pollution at Log Yards (Washington State Department of Ecology, No. 95-53)
Solid Waste Handling and Recycling Facilities	Chapter 173-304 WAC
Surface Mining	WAC 332-18-015
Wastewater Application to Land Surface	Chapters 173-216 , 173-200 WAC, Washington State Department of Ecology Land Application Guidelines, Best Management Practices for Irrigated Agriculture

~~E. Prohibited Uses—Uses Prohibited in Aquifer Recharge Areas. The following activities and uses are prohibited in aquifer recharge areas:~~

- ~~1. Landfills. Landfills, including hazardous or dangerous waste, municipal solid waste, special waste, wood waste, and inert and demolition waste landfills;~~
- ~~2. Underground Injection Wells. Class I, III, and IV wells and subclasses 5F01, 5D03, 5F04, 5W09, 5W10, 5W11, 5W31, 5X13, 5X14, 5X15, 5W20, 5X28, and 5N24 of Class V wells;~~
- ~~3. Wood Treatment Facilities. Wood treatment facilities that allow any portion of the treatment process to occur over permeable surfaces (both natural and manmade);~~

~~4. Storage, Processing, or Disposal of Radioactive Substances. Facilities that store (other than minor sources such as medicinal uses or industrial testing devices), process, or dispose of radioactive substances; and~~

~~5. Other Prohibited Uses or Activities.~~

~~a. Activities that would significantly reduce the recharge to aquifers currently or potentially used as a potable water source; and~~

~~b. Activities that would significantly reduce the recharge to aquifers that are a source of significant baseflow to a regulated stream. (Ord. 2005-03 § 2, 2005)~~

Chapter 15.20 SURFACE WATER AND STORMWATER MANAGEMENT¹

Sections:

- 15.20.010 Purpose.**
- 15.20.020 Definitions.**
- 15.20.030 General provisions.**
- 15.20.040 Regulated activities and allowed activities.**
- 15.20.050 General requirements.**
- 15.20.060 Approval standards.**
- 15.20.070 Administration.**
- 15.20.080 Enforcement.**
- 15.20.090 *Repealed.***
- 15.20.100 *Repealed.***

15.20.010 Purpose.

The provisions of this chapter are intended to establish regulation for all new development, redevelopment or construction activities within the city that will or may impact surface water, groundwater or stormwater. The provisions of this chapter establish the minimum requirements that must be met to permit a property to be developed, redeveloped or proceed with construction activities within the city. The purpose of this chapter is to:

- A. Preserve and enhance the suitability of waters for contact recreation, fishing, and other beneficial uses;
- B. Minimize water quality degradation and sedimentation in streams, ponds, lakes, wetlands and other water bodies;
- C. Minimize the impact of increased runoff, erosion and sedimentation caused by land development and poor maintenance practices;
- D. Maintain and protect groundwater resources;
- E. Minimize adverse impacts from projects on ground and surface water quantities, locations and flow patterns;
- F. Decrease potential landslide, flood and erosion damage to public and private property;
- G. Establish site planning and construction practices that are consistent with natural topographical, vegetational and hydrological conditions and that limit the extent of land disturbing activities;
- H. Maintain and protect the city stormwater management infrastructure and downstream systems and properties. (Ord. 2016-28 § 8 (Exh. C), 2016: Ord. 2009-13 § 1, 2009: Ord. 98-31 § 1, 1999)

15.20.020 Definitions.

1. "Approval" means the proposed work or completed work conforms to this chapter in the opinion of the director.
2. "Best management practice (BMP)" means physical, structural, and/or managerial practices that, when used singly or in combination, prevent and reduce the release of pollutants and other adverse impacts to waters of Washington State.
3. "City" means the city of Bainbridge Island.
4. "Clearing" means the destruction and removal of vegetation by manual, mechanical, or chemical methods.
5. "Compaction" means densification, settlement, or packing of soil in such a way that permeability of the soil is reduced.
6. "Detention" means the release of stormwater runoff from a specific site at a slower rate than it is collected by the stormwater facility system, the difference being held in temporary storage.
7. "Detention facility" means an above or below ground facility, such as a pond or tank, that temporarily stores stormwater runoff and subsequently releases it at a slower rate than it is collected by the drainage facility system. There may be little or no infiltration of stored stormwater.
8. "Development" means new development, redevelopment, or both.
9. "Earth material" means any rock, natural soil or fill and/or any combination thereof.
10. "Erosion" means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep, or the detachment and movement of soil or rock fragments by water, wind, ice, or gravity.
11. "Excavation" means the mechanical removal of earth material.
12. "Exotic species" means an introduced or nonindigenous species living outside its native distributional range which has arrived there by human activity, either deliberate or unintentional.
13. "Fill" means a deposit of earth material placed by artificial means.
14. "Forest practice" means any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber, as defined by RCW [76.09.050](#).
15. "Geologically hazardous areas" means areas susceptible to significant erosion, sliding, earthquake, or other geological events. They pose a threat to public health and safety when used as sites for incompatible commercial, residential or industrial development. Geologically hazardous areas include erosion hazard areas, landslide hazard areas, and seismic hazard areas. Refer to Chapter [16.20](#) BIMC.
16. "Groundwater" means water in a saturated zone or stratum beneath the surface of land or a surface water body.
17. "Hard surface" means an impervious surface, a permeable pavement, or a vegetated roof.
18. "Illegal discharge" and "illegal connections" are as defined in BIMC [15.22.020](#).

19. "Impervious surface" means a nonvegetated surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development and/or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether the thresholds for application of minimum requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling.

20. "Interflow" means that portion of rainfall that infiltrates into the soil and moves laterally through the upper soil horizons until intercepted by a stream channel or until it returns to the surface; for example, in a wetland, spring or seep.

21. "Invasive plant species" means opportunistic plant species (either native or nonnative) that colonize disturbed ecosystems and come to dominate the plant community in ways that are seen by us as reducing the values provided by the previous plant community.

22. "Land disturbing activity" means any activity that results in a change in the existing soil cover (both vegetative and nonvegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to, clearing, grading, filling and excavation. Compaction that is associated with stabilization of structures and road construction shall also be considered a land disturbing activity. Vegetation maintenance practices are not considered land disturbing activity. Stormwater facility maintenance is not considered land disturbing activity if conducted according to established standards and procedures.

23. "List No. 1" means on-site stormwater management BMPs for lawn and landscaped areas, roofs, and other hard surfaces included in the stormwater manual adopted in BIMC [15.20.050](#) for projects triggering Minimum Requirements No. 1 through 5.

24. "List No. 2" means on-site stormwater management BMPs for lawn and landscaped areas, roofs, and other hard surfaces included in the stormwater manual adopted in BIMC [15.20.050](#) for projects triggering Minimum Requirements No. 1 through 9.

25. "Low impact development (LID)" means a stormwater and land use management strategy that strives to mimic predisturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design.

26. "Low impact development best management practices (LID BMPs)" mean distributed stormwater management practices, integrated into a project design, that emphasize predisturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration. LID BMPs include, but are not limited to: bioretention, rain gardens, permeable pavements, roof downspout controls, dispersion, soil quality and depth, minimal excavation foundations, vegetated roofs, and water reuse.

27. "LID performance standard" means matching developed discharge durations to predeveloped durations for the range of predeveloped discharge rates from eight percent of the two-year peak flow to 50 percent of the two-year peak flow.

28. "LID principles" are land use management strategies that emphasize conservation, use of on-site natural features, and site planning to minimize impervious surfaces, native vegetation loss, and stormwater runoff.

29. "Minimum requirement" means one of nine minimum requirements for stormwater management that are applicable to new development and redevelopment projects as defined in the stormwater manual adopted in BIMC [15.20.050](#).

30. "Mitigation" means, in the following order of preference:

- a. Avoiding the impact altogether by not taking a certain action or part of an action;
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
- c. Rectifying the impact by repairing, rehabilitating or restoring the affected environment;
- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

31. "Native vegetation" means plant species that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site. Invasive species and exotic species are not considered to be native species.

32. "New development" means land disturbing activities, including Class IV – general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of hard surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter [58.17](#) RCW. Projects meeting the definition of redevelopment shall not be considered new development.

33. "Pervious surface" means any surface material that allows stormwater to infiltrate into the ground. Examples include lawn, landscape, pasture, native vegetation areas, and permeable pavement.

34. "Pollution" means such contamination or other alteration of the physical, chemical, or biological properties of waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquids, gaseous, solid, radioactive or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life; as defined in RCW [90.48.020](#) as now existing or hereafter amended.

35. "Pollution-generating hard surface (PGHS)" means hard surfaces considered to be a significant source of pollutants in stormwater runoff. See the listing of surfaces under "pollution-generating impervious surface (PGIS)."

36. "Pollution-generating impervious surface (PGIS)" means impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to vehicular use; industrial activities (as further defined in the glossary of the stormwater manual adopted in BIMC [15.20.050](#)); storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall; metal roofs unless they are coated with an inert, nonleachable material (e.g., baked-on enamel coating); or roofs that are subject to venting significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities.

37. "Pollution-generating pervious surfaces (PGPS)" means any pervious surface subject to vehicular use; industrial activities (as further defined in the glossary of the stormwater manual adopted in BIMC [15.20.050](#)); storage of erodible or leachable materials, wastes, or chemicals, and that receive direct rainfall or run-on or blow-in of rainfall; use of pesticides and fertilizers; or loss of soil. Typical PGPS include permeable pavement subject to vehicular use, lawns, and landscaped areas including golf courses, parks, cemeteries, and sports fields (natural and artificial turf).

38. "Redevelopment" means, on a site that is already substantially developed (i.e., has 35 percent or more of existing impervious surface coverage), the creation or addition of impervious surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities.

39. "Replaced hard surface" means, for structures, the removal and replacement of hard surfaces down to the foundation. For other hard surfaces, the removal down to bare soil or base course and replacement.

40. "Replaced impervious surface" means, for structures, the removal and replacement of impervious surfaces down to the foundation. For other impervious surfaces, the removal down to bare soil or base course and replacement.

41. "Site" means the area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site.

42. "Stormwater" means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland, interflow, channels or pipes into a defined surface water channel, or a constructed infiltration facility.

43. "Stormwater drainage system" means constructed and natural features which function together as a system to collect, convey, channel, hold, inhibit, retain, detain, infiltrate, divert, treat or filter stormwater.

44. "Stormwater facility" means a constructed component of a stormwater drainage system, designed or constructed to perform a particular function, or multiple functions, including but not limited to pipes, swales, ditches, culverts, street gutters, detention basins, retention basins, constructed wetlands, infiltration devices, catch basins, oil/water separators, sediment basins and modular pavement.

45. "Stormwater manual" means the Stormwater Management Manual for Western Washington adopted by reference in BIMC [15.20.050](#).

46. "Vegetation" means any plant life growing on the Island's surfaces, including ponds, wetlands, and marshes.

47. "Waters of the state" includes those waters as defined as "waters of the United States" in [40](#) CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the state" as defined in Chapter [90.48](#) RCW which includes lakes, rivers, ponds, streams, inland waters, groundwater, salt waters and all other surface waters and water courses within the jurisdiction of the state of Washington.

48. "Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support (and under normal circumstances do support) a prevalence of vegetation typically adapted for life in saturated soil conditions, such as swamps, marshes, bogs, and other similar areas. This definition includes wetlands created, restored or enhanced as part of a mitigation procedure; it does not include constructed wetlands or the following surface waters of the state intentionally constructed from sites that are not wetlands: irrigation and drainage ditches, grass-lined swales, canals, agricultural detention facilities, farm ponds, and landscape amenities. Refer to Chapter [16.20](#) BIMC. (Ord. 2016-28 § 8 (Exh. C), 2016; Ord. 2009-13 § 2, 2009; Ord. 2005-10 § 1, 2005; Ord. 2003-22 § 22, 2003; Ord. 2001-49 § 1, 2001; Ord. 98-31 § 1, 1999)

15.20.030 General provisions.

A. Procedures. The department of public works/engineering department is authorized to adopt written procedures for the purpose of carrying out the provisions of this chapter. Prior to fulfilling the requirements of this chapter, the administrator or assigns shall not grant any approval or permission to conduct a regulated activity, including but not limited to the following:

1. Building permits, commercial or residential;
2. Comprehensive plan amendments;
3. Conditional use permits;
4. Final plats (short/long/large lot);
5. Forest practices;
6. Grading or clearing permits;
7. Planned unit developments;
8. Plats;
 - a. Subdivide, preliminary and final (short/long/large lot);
9. Preliminary plats (short, long, large lot);
10. Reasonable use exceptions;

11. Right-of-way permits;
12. Shoreline substantial development permits;
13. Shoreline variance/shoreline conditional use permits;
14. Site plan reviews;
15. Variances;
16. Zone reclassification (rezones); or
17. Any subsequently adopted permit or required approval not expressly exempted by this chapter.

B. The following agencies may also require a drainage review to assess the impact of development on a site. Any requirements imposed by these agencies are separate from the city mandates. It is the applicant's sole responsibility to resolve any conflicting issues that may arise from submittal reviews.

1. U.S. Army Corps of Engineers;
2. Washington State Department of Natural Resources;
3. Bremerton-Kitsap County Health District;
4. Washington State Department of Ecology: general permit is required for development that disturbs one acre or more;
5. Washington State Department of Fish and Wildlife;
6. Washington State Department of Transportation. (Ord. 2016-28 § 8 (Exh. C), 2016: Ord. 2005-10 § 2, 2005: Ord. 98-31 § 1, 1999)

15.20.040 Regulated activities and allowed activities.

A. Regulated Activities. Consistent with the minimum requirements contained in the stormwater manual, the administrator shall approve or disapprove the following activities and may require the following permits:

1. New development may require a site assessment and development permit, building permit, land use permit, and/or zoning permit for the following:
 - a. Land disturbing activities;
 - b. Structural development, including construction, installation or expansion of an existing building or other structure;
 - c. Creation of 800 square feet or more of new hard surfaces;
 - d. Class IV general forest practices that are conversions from timber land to other uses; and
 - e. Subdivision, short subdivision and binding site plans, as defined in RCW [58.17.020](#).

2. Redevelopment may require a site assessment and development permit, building permit, land use permit, and/or zoning permit. On an already developed site, the creation or addition of 800 square feet or more of hard surfaces; structural development including construction, installation or expansion of a building or other structure; any land disturbing activity, and/or replacement of hard surface (that is not part of a routine maintenance activity); and land disturbing activities associated with structural or hard surface redevelopment. (Ord. 2016-28 § 8 (Exh. C), 2016: Ord. 2009-13 § 3, 2009: Ord. 2005-10 § 3, 2005: Ord. 98-31 § 1, 1999)

15.20.050 General requirements.

A. Stormwater Management Manual Adopted. The Washington State Department of Ecology's 2012 Stormwater Management Manual for Western Washington, as amended in 2014, is hereby adopted by reference and is hereinafter referred to as the stormwater manual; provided, that certain provisions of the stormwater manual are amended as stated in BIMC [15.20.060](#).

B. Illegal discharges and illegal connections to the stormwater drainage system are prohibited by Chapter [15.22](#) BIMC.

C. Low Impact Development Manual Adopted. The 2012 Low Impact Development (LID) Technical Guidance Manual for Puget Sound is hereby adopted by reference and is hereinafter referred to as the LID manual. (Ord. 2016-28 § 8 (Exh. C), 2016: Ord. 2009-13 § 4, 2009: Ord. 2005-10 § 4, 2005: Ord. 98-31 § 1, 1999)

15.20.060 Approval standards.

A. City-Specific Standards. The city amends the standards adopted as part of the stormwater manual (summarized in subsection B of this section) as follows:

1. Instead of following the Better Site Design BMP (BMP T5.41) in Volume V, Section 5.3.2 of the stormwater manual, conduct a site assessment following the guidance in the LID manual adopted in BIMC [15.20.050](#). Comply with the city of Bainbridge Island design and construction standards for streets and roadways unless an exception is granted in writing by the administrator.
2. The hard surface threshold for triggering Minimum Requirements No. 1 through 5 for new development and redevelopment is 800 square feet or greater of new plus replaced hard surface area.
3. Projects that discharge directly, or indirectly through a stormwater drainage system, to Puget Sound are required to implement the full list of on-site stormwater management BMPs on List No. 1 or List No. 2 (see subsection B.2 of this section).
4. Optional Guidance No. 1, Financial Liability, is not adopted.
5. Optional Guidance No. 2, Off Site Analysis and Mitigation, and Volume I, Section 3.1.3, Perform an Offsite Analysis, is required for new development and redevelopment projects creating 5,000 square feet or more of hard surface area.
6. In Volume I, Section 2.7 of the stormwater manual, Adjustments, is not adopted.
7. The use of threshold discharge areas, as defined by the stormwater manual, is not adopted.

8. In Volume III, Section 3.2 of the stormwater manual, Figure 3.2.4, Example of Permanent Surface Water Control Pond Sign, is amended to include the following language:

Signage for constructed ponds is required to be provided by the developer as a part of the project. Contact the City to determine the pond name, pond number, and telephone number to include on the sign.

9. In Volume V, Section 4.3.1, Setbacks, is amended to delete the current text and replace with the following language:

A Geotechnical Engineer is required to evaluate all stormwater facilities and infiltration systems proposed within 200 feet of a geologically hazardous area.

10. The 2013 Rain Garden Handbook for Western Washington supplements the Rain Garden (BMP T5.14A) design guidelines in the stormwater manual for projects triggering Minimum Requirements No. 1 through 5. Use the "Good (80%)" performance level for Rainfall Region 3 in the Rain Garden Sizing Chart in the Rain Garden Handbook for Western Washington at a minimum. "Better (95%)" performance level is preferred.

B. Stormwater Manual Standards. The stormwater manual adopted in BIMC [15.20.050](#) includes the following nine minimum requirements:

1. Minimum Requirement No. 1 – Preparation of Stormwater Site Plans.
2. Minimum Requirement No. 2 – Construction Stormwater Pollution Prevention.
3. Minimum Requirement No. 3 – Source Control of Pollution.
4. Minimum Requirement No. 4 – Preservation of Natural Drainage Systems and Outfalls.
5. Minimum Requirement No. 5 – On-Site Stormwater Management.
6. Minimum Requirement No. 6 – Runoff Treatment.
7. Minimum Requirement No. 7 – Flow Control.
8. Minimum Requirement No. 8 – Wetlands Protection.
9. Minimum Requirement No. 9 – Operations and Maintenance.

The following is a summary of the general thresholds included in the stormwater manual with modifications based on the city-specific standards provided in subsection A of this section. Specific thresholds are also summarized for Minimum Requirements No. 5, 6, and 7. The stormwater manual includes additional comprehensive guidance regarding implementation of these thresholds.

1. Overall project thresholds include the following:

Applicable Requirements	New Development	Redevelopment
Minimum Requirement No. 2 (Construction Stormwater Pollution Prevention)	All projects	All projects

Applicable Requirements	New Development	Redevelopment
Minimum Requirements No. 1 – 5	≥ 800 sf new plus replaced hard surface area ¹ , or ≥ 7,000 sf land disturbing activity	≥ 800 sf new plus replaced hard surface area ¹ , or ≥ 7,000 sf land disturbing activity
Minimum Requirements No. 1 – 9	≥ 5,000 sf new plus replaced hard surface area, or ≥ 3/4 acre of vegetation converted to lawn or landscaped areas, or ≥ 2.5 acres of native vegetation converted to pasture	≥ 5,000 sf new hard surface area, or ≥ 3/4 acre of vegetation converted to lawn or landscaped areas, or ≥ 2.5 acres of native vegetation converted to pasture AND New hard surface is ≥ 50% of the existing hard surface within the project limits (road-related projects), or Proposed improvements are > 50% of the assessed value of the existing site improvements
Optional Guidance No. 2: Off Site Analysis and Mitigation	≥ 5,000 sf of hard surface area ²	≥ 5,000 sf of hard surface area ²

1 – City-specific threshold for new development and redevelopment.

2 – City-specific threshold for off-site analysis and mitigation.

2. Thresholds related to Minimum Requirement No. 5 (Volume I, Section 2.5.5 of the stormwater manual) include the following:

Applicable Requirements	New Development and Redevelopment
List No. 1	Thresholds for Minimum Requirements No. 1 – 5 summarized in BIMC 15.20.060.B.1
List No. 2	Thresholds for Minimum Requirements No. 1 – 9 summarized in BIMC 15.20.060.B.1
LID Performance Standard	Optional, but can be used instead of List No. 1 or List No. 2 as specified above
BMP T5.13 (Post Construction Soil Quality and Depth)	Required for disturbed pervious areas
Direct Discharge to Puget Sound	Projects discharging directly to, or indirectly through a stormwater drainage system, to Puget Sound are required to evaluate the full list of on-site stormwater management BMPs on List No. 1 or List No. 2 ¹

1 – City-specific requirement for direct discharges.

3. Thresholds related to Minimum Requirement No. 6 (Volume I, Section 2.5.6 of the stormwater manual) include the following:

Applicable Requirements	New Development and Redevelopment
Stormwater Treatment Facility	≥ 5,000 sf pollution-generating hard surfaces (PGHS), or ≥ 3/4 acre of pollution-generating pervious surfaces (PGPS)
Oil Control	High-use sites
Phosphorus Treatment	Not applicable at this time
Enhanced Treatment	Industrial project sites, commercial project sites, multifamily project sites, and high AADT roads ¹ that: 1) Discharge directly to fresh waters or conveyance systems tributary to fresh waters designated for aquatic life use or that have an existing aquatic life use; or 2) Use infiltration strictly for flow control – not treatment – and the discharge is within 1/4 mile of a fresh water designated for aquatic life use or that has an existing aquatic life use
Basic Treatment	All sites meeting the stormwater treatment facility thresholds listed above for PGHS or PGPS

1 – High AADT roads are designated as ≥ 15,000 (fully controlled and partially controlled limited access highways) and ≥ 7,500 (all other roads).

4. Thresholds related to Minimum Requirement No. 7 (Volume I, Section 2.5.7 of the stormwater manual) include the following:

Applicable Requirements	New Development and Redevelopment
Flow Control Facility	≥ 10,000 sf effective impervious surface, or ≥ 3/4 acre of vegetation converted to lawn or landscaped areas, or ≥ 2.5 acres of native vegetation converted to pasture, or ≥ 0.15 cfs increase in the 100-year flow frequency (using a 15-minute time step)
Direct Discharge Exemption	Flow control facilities are not required for direct discharges, or indirect discharges through a stormwater drainage system, to Puget Sound

(Ord. 2016-28 § 8 (Exh. C), 2016; Ord. 2009-13 § 5, 2009; Ord. 2005-10 § 5, 2005; Ord. 2001-49 § 2, 2001; Ord. 98-31 § 1, 1999)

15.20.070 Administration.

A. Administrator. The public works director or a designee shall administer this chapter and shall be referred to as the administrator. The administrator shall have the authority to develop and implement administrative procedures to administer and enforce this chapter.

B. Review and Approval. The administrator may approve, conditionally approve or deny an application for activities regulated by this chapter.

C. Enforcement Authority. The administrator shall enforce this chapter.

D. Inspection. All activities regulated by this chapter shall be inspected by the administrator. The administrator shall inspect projects at various stages of the work requiring approval to determine that adequate control is being exercised. Stages of work requiring inspection include, but are not limited to:

1. Prior to clearing and construction (preconstruction) to ensure that clearing limits, sensitive areas and their buffers, and trees that are to be preserved have been clearly marked;
2. During construction to verify proper installation and maintenance of erosion and sediment control BMPs, maintenance of clearing limits, and protection of trees that are to be preserved;
3. Every six months during construction for new residential development until 90 percent of the lots are constructed (or when construction has stopped and the site is fully stabilized) to identify maintenance needs for permanent stormwater facilities;
4. Upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities; and
5. Ongoing annual inspections of permanent stormwater facilities designed to meet Minimum Requirement No. 6 (Runoff Treatment) and/or Minimum Requirement No. 7 (Flow Control) per Chapter [15.21](#) BIMC.

When required by the administrator, a special inspection and/or testing shall be performed. (Ord. 2016-28 § 8 (Exh. C), 2016: Ord. 2009-13 § 6, 2009: Ord. 2005-10 § 6, 2005: Ord. 98-31 § 1, 1999)

15.20.080 Enforcement.

A. Failure to Comply. It is unlawful for any person to violate any provision or fail to comply with any of the requirements of this chapter.

B. Emergency Access and Reparation. In the event the violation constitutes an immediate danger to public health or safety, the administrator is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the property. Any expense related to such remediation undertaken by the city shall be fully reimbursed by the property owner and/or responsible party. Any relief obtained under this section shall not prevent the city from seeking further relief or applying other penalties as provided in this chapter.

C. Civil Infraction. Except as provided in subsection D of this section, conduct made unlawful by this chapter shall constitute a civil infraction and is subject to enforcement and fines as provided in BIMC [1.26.035](#). A civil infraction under this section shall be processed in the manner set forth in Chapter [1.26](#) BIMC.

D. Misdemeanor. Any person who, having been found in violation of this chapter, fails once again to abide by its regulations, commits a misdemeanor and is subject to the penalties provided in BIMC [1.24.010](#).A.

E. Civil Penalty. In addition to any civil infraction fine, criminal penalty, and/or other available sanction or remedial procedure, any person engaging in conduct made unlawful by this chapter

shall be subject to a cumulative civil penalty in the amount of \$1,000 per day for each violation from the date set for compliance until the date of compliance. Any such civil penalty shall be collected in accordance with BIMC [1.26.090](#).

F. Additional Remedies.

1. In addition to any other remedy provided by this chapter or under the Bainbridge Island Municipal Code, the city may initiate injunction or abatement proceedings or any other appropriate action in courts against any person who violates or fails to comply with any provision of this chapter to prevent, enjoin, abate, and/or terminate violations of this chapter and/or to restore a condition which existed prior to the violation. In any such proceeding, the person violating and/or failing to comply with any provisions of this chapter shall be liable for the costs and reasonable attorneys' fees incurred by the city in bringing, maintaining and/or prosecuting such action.
2. Any person who violates any provision of this chapter may also be in violation of the Federal Clean Water Act, NPDES Phase II permit, and/or Chapter [90.48](#) RCW and may be subject to sanctions including civil and criminal penalties. Any enforcement action authorized under this chapter shall also include written notice to the violator of such potential liability. (Ord. 2016-28 § 8 (Exh. C), 2016: Ord. 2009-13 § 7, 2009: Ord. 2005-10 § 7, 2005: Ord. 98-31 § 1, 1999)

15.20.090 Exceptions and appeals.

Repealed by Ord. 2009-13. (Ord. 2005-10 § 8, 2005: Ord. 2003-25 § 6, 2003; Ord. 98-31 § 1, 1999)

15.20.100 Severability.

Repealed by Ord. 2003-24. (Ord. 98-31 § 1, 1999)

¹Prior legislation: Ords. 85-13, 86-02, 88-16 and 94-29.

Christy Carr

From: Gordon, Brittany N (DFW) <Brittany.Gordon@dfw.wa.gov>
Sent: Thursday, May 25, 2017 11:49 AM
To: Christy Carr
Cc: Blanton, Michael L (DFW); Waldbillig, Chris M (DFW)
Subject: RE: FWHCA CAO Update

Hi Christy,

Thanks for sending. I do have a couple comments/suggestions. I like the focus on providing bigger buffers for anadromous fish streams, but am still a bit conflicted on how this could actually be implemented/enforced. Anyway, comments below. Let me know if you need clarification or would like to chat more about this.

1. I saw Urban Natural Open Space is listed in the definitions. Is this used anywhere else in the Code? A few years ago, PHS took all the Urban and Rural Natural Open Space polygons and combined them all into "biodiversity areas and corridors" (BACs). We don't have any BACs mapped in Kitsap yet but are working on it. I think you and I talked a bit about what that might look like and how the City could start identifying areas that meet the BAC definition, even if they aren't mapped in PHS yet. I see you did include BACs in the FWHCA section too.
2. I suggest that the definition of non-anadromous fish-bearing streams specify *natural* barriers to fish passage. State laws regarding water crossings do not consider man-made barriers as significant because the RCW and WAC require man-made barriers to be corrected eventually. When those barriers to anadromous fish get corrected, we would want the habitat upstream to have been buffered for anadromous fish. Also, not sure if this needs to be in Code or not but we typically refer to the Forest Practices Board Manual (FPBM) for guidance on identifying natural fish passage barriers; anyone attempting to identify a natural fish passage barrier should really consult with WDFW and the Tribe for concurrence. And beaver dams are not barriers. Also, I suggest removing part d about needing language for if anadromous fish presence is documented due to changes in conditions and rather just add the language about natural barriers. The FPBM is pretty specific about natural barriers being bedrock chutes and waterfalls or similar barriers that are unlikely to change over time.

Thanks for sending and for the opportunity to comment!

Brittany N. Gordon
WDFW Area Habitat Biologist
Region 6: Port Orchard Office
Mobile: (360) 620-3601



Washington
Department of
**FISH and
WILDLIFE**

Christy Carr

From: Robert Cousins <rob@coastalsolns.com>
Sent: Thursday, June 01, 2017 11:56 AM
To: PCD
Cc: Christy Carr
Subject: Vegetation Management Revision to CAO

To whom it may concern:

I am an engineering geologist and attorney on Bainbridge Island with extensive experience with all aspects of the Critical Areas Ordinance regarding interpretation and application. I have completed hundreds of projects that all deal with vegetation management on slopes in one way or another.

I support making revisions to the CAO that would actually reduce the work I do for residents of Bainbridge Island when it comes to managing vegetation on slopes and within buffers.

Detailed comments have been submitted by Mike Juneau, consulting arborist, which include my opinions and recommendations regarding how future steep slope vegetation management could be improved.

In general terms, I support reducing the need for a geotechnical investigation when a project only involves reasonable pruning, no ground disturbance and the health of the trees/plants are maintained. Removing large trees or ground disturbance on steep slopes would still require geotechnical investigation to assess slope stability but in 27 years of practice I have never seen maintenance and/or reasonable pruning on slopes cause adverse stability conditions.

I understand proposed language has not been prepared yet but I anticipate providing more specific comments once the first code revision draft is complete.

Robert F. Cousins
11027 Manitou Beach Drive NE.

Christy Carr

From: Jamie Glasgow <jamie@wildfishconservancy.org>
Sent: Friday, May 26, 2017 2:07 PM
To: Christy Carr
Subject: Re: CAO update

Ah - I see. I'm in favor of losing the distinction so long as the resultant F gets 200' buffers ;)

If you can't give all fish habitat 200' buffers, consider limiting 'non-anadromous fish habitat' (150') to those reaches that have resident fish (or if above a barrier culvert, meet default physical criteria) but are upstream from permanent natural barriers.

Thanks again for the invite to comment - let me know if you'd like to discuss any of this.

Jamie

Wild Fish Conservancy
www.wildfishconservancy.org
206.310.9302 (mobile)

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On Fri, May 26, 2017 at 1:32 PM, Christy Carr <ccarr@bainbridgewa.gov> wrote:

Thanks very much.

Here is the WAC directive for addressing anadromous fisheries in CAOs:

ANADROMOUS FISHERIES

Policies and regulations for protecting critical areas give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. RCW 36.70A.172(1) is the requirement and WAC 365-195-925 (updated in 2000) lists criteria involved. This requirement applies to all five types of critical areas.

WAC 365-190-130(4)(i) recommends sources and methods for protecting fish and wildlife habitat conservation areas, including salmonid habitat. Counties and cities may use information prepared by the United States Department of the Interior Fish and Wildlife Service, National Marine Fisheries Service, the Washington State Department of Fish and Wildlife, the State Recreation and Conservation Office, and the Puget Sound Partnership to designate, protect and restore salmonid habitat. Counties and cities should consider recommendations found in the regional and watershed specific salmon recovery plans (see the Governor's Salmon Recovery Office webpage and the Puget Sound Partnership's Salmon Recovery webpage).

Land Use Planning for Salmon, Steelhead and Trout: A land use planner's guide to salmonid habitat protection and recovery (October 2009) is an excellent resource.

The Washington State Recreation and Conservation Office (RCO) website includes information on salmon recovery efforts.

The WDFW AHB I've been working with didn't support separating anadromous fish, either, so I'll reconsider.

Thanks again for taking the time to comment.

christy

From: Jamie Glasgow [mailto:jamie@wildfishconservancy.org]
Sent: Friday, May 26, 2017 12:34 PM
To: Christy Carr <ccarr@bainbridgewa.gov>
Cc: Deborah Rudnick <debrudnick@gmail.com>
Subject: Re: CAO update

Hi Christy,

I've made a few comments on the attached pdfs. Let me know if you can't see them - I used the comment bubble and highlight tool.

On the Review Package my comments are on adobe pages: 100, 105, 111, 153-5, 158-9, 161.

I focused on the stream sections.

Glad to discuss - let me know if you have any questions.

Jamie

Wild Fish Conservancy
www.wildfishconservancy.org
[206.310.9302](tel:206.310.9302) (mobile)

Rob Cousins Geotech Review of Mike Juneau Notes 07/12/16,
with Mike commentary on Rob replies 5/30/17 (EXCERPTED
TEXT from

Black: original text Mike's SMP Revision Geotech Handout dated 7/04/16
where Rob commented:

Red: Rob Cousin replies.

Blue: Mike commentary on Rob replies.

**LEVEL A. NO PERMIT. FOLLOWING WORK CAN BE DONE BY ANYONE - WITHOUT COBI
OR CONSULTANT REVIEW - ANYWHERE IN SJ OR GHA OR GHA BUFFER PER ANSI
A300 STANDARD:**

1. MAINTENANCE PRUNING WOODY PLANTS that have historically been managed as
hedge/screen (or planted for purpose of screen) should be included in SMP 4.1.3.5.3
(Maintenance trimming of Existing Landscaping) **EVEN IF IN A GEOLOGICALLY HAZARDOUS
AREA OR GHA BUFFER.**

(NOTE: If pruning exceeds existing regs (3-inch rule, 25% over 3 yrs rule, etc. then must move to
next "Level B" and which requires arborist prescription & sketch + COBI Certified contractor or
homeowner).

EXAMPLES: Native or exotic species such as Leyland Cypress, laurel, red-cedar, etc.

Reasoning:

1. Many Trees / Shrubs planted as hedge / screen develop unbalanced canopy from overcrowding
if left unpruned, shade out lower branches for loss of screening, shade out native vegetation,
overgrow houses, tend to fall over, and may soon require removal resulting in habitat loss or
reduced slope stability.
2. Many hedges are planted and maintained to protect top of slope and serve as living fence.
Regulation of hedge maintenance promotes damage to top of slopes.

RFC: Agree provided no soil disturbance in critical area and no clearing in buffers.

2. REMOVAL OF VINES (English ivy, poison oak, wisteria, clematis, etc) from trunks of
freestanding trees.

A. Vines damage trees by retain moisture for parasitic fungi, shade damage/smothering
tree foliage, some cause strangulation. Overburdens and topples trees. English ivy
eventually creates monoculture "ivy desert"

B. Most vines are exotic and invasive and spread by fruits produced on adult-phase
growth that occurs mostly when vines growing on trees (English ivy).

C. Vine removal is frequently necessary to allow an arborist to perform health or risk
inspection of trees.

D. Regulation of this activity will promote neglect on many properties, resulting in very
high damage to shoreline trees and loss of native habitat.

EXAMPLE: English ivy on Bigleaf maple.

Reasoning: There is no disturbance of soil or roots. Trees are relieved of heavy burden of
competing foliage that has no structural benefit. Ivy frequently CAUSES tree failure during wind or
snow events. Fruiting and spread of noxious weeds is greatly reduced or eliminated. Voluntary
compliance with Washington State Noxious Weed Control requirements would be greatly
facilitated and encouraged by this provision (instead of strongly discouraged by current code).

To prevent smothering vegetation below if vines excessive, climbers can either of following:

1. Immediately scatter vine pruning debris on slope, or (if excessive volume foliage),
2. Cut vines from base tree trunks "nose to toes" and then wait until vine leaves have fallen and
then remove remaining vines from trees and scatter on slope. **RFC: Agree even if ivy and**

invasive removal includes clearing or soil disturbance. No grading. Removal of invasives should be followed by replanting. Not necessarily regulated but a Publication by the City with guidance on what to do would work.

3. **COPPICING OR RE-COPPICING INVASIVE TREES AND SHRUBS** like holly, laurel, hawthorn, and butterfly bush for good control of size and seed production **WHILE maintaining strong root systems** intact on slope. Should be allowed **WITHOUT 3-inch rule restriction (but under "significant tree" 10 to 12 inch size?)**

Reasoning: this is a best way to limit spread of these invasive species on slopes - including wetland slopes and ravines - without loss of stabilizing roots. Allows native vegetation to extend coverage.

RFC AGREE

4. **Maintenance pruning to remove DEAD BRANCHES AND DEAD TOPS** from trees on critical slopes/buffers **where there is ANY risk of personal or property damage.**

Examples: dead tops in red alders / rotten limbs in bigleaf maple overhanging house or deck.

Reasoning: Dead tree parts have no positive benefit to the tree or to tree function in stabilizing slope. Removal of dead wood allows tree to seal off wounds and slow down decay. Removing dead wood reduces non-structural "dead weight" of tree and can reduce risk of failure. Dead wood rots quickly in soil contact and reduces erosion and promotes healthier vegetation on slope.

RFC AGREE

5. **Maintenance pruning of live branches** to allow up to **14 foot limb CLEARANCE FROM STRUCTURES AND CHIMNEYS** (no tree removal).

Example: Pruning evergreen limbs overhanging a fireplace chimney to reduce fire risk.

Reasoning: Trees grow quickly, and may require pruning each year to maintain reasonable clearance from structures to prevent damage and reduce fire risk. Proper clearance also necessary to reduce pest entry and damage to structures from rats, squirrels, raccoons, or wood destroying organisms such as carpenter ants. Good air flow and light around a structure is important to reduce moisture damage and slow the growth of mosses, molds, and wood decay fungus.

RFC No Geotech comment on distance to houses but same analysis. Provided the health of the roots are maintained limbing can be done anywhere.

6. **Maintenance pruning LIVE LIMBS OVERHANGING DRIVEWAYS** for at least **15-foot limb clearance** above driveway surface and **3-foot side clearance** as well for truck access, using "nearest appropriate proper cut per ANSI A300" (**cuts may be made higher in tree than 15 ft per ANSI A300 standards so not a hack job / eyesore and damaging to tree!**).

Reasoning: BIMC specifies pruning for emergency vehicle clearance is 12 wide x 13.5 high minimum per BIMC 503.2.1 exception 1. We should be able to trim driveways for 15-ft clearance to allow some grow-out before pruning again in next year or two.

Pruning cuts MAY EXCEED THREE-INCH RULE.

RFC SEE ABOVE

7. Maintenance pruning LIVE LIMBS AND SMALL TREES for at least 5-foot clearance from above-ground UTILITY LINES (electric, phone, TV, etc) per ANSI A300 Section 9 (Utility Pruning). Heading cuts allowed on trees directly under utilities as needed to achieve specified clearance without 3-inch rule (no tree removal).

Reasoning: PSE policy is that homeowners provide vegetation clearance 220 volt wires (with weather-resistant plastic coating and support wire) that typically extend from transformer to meter. Trees and limbs frequently grow up and over wires, pulling down on utility wires and straining connections at pole and mast. Rubbing branches can short out wires by damaging protective coating resulting in dimming and loss of power or phone service. Under most circumstances five (5) foot clearance is reasonable distance to maintain clearance on 2 or 3 year pruning cycle. Elderly residents especially dependent on electric and telephone service as frequently depend on home health services such as oxygen or need call for assistance.

RFC No Geotech issues see above comments

[Regarding "Level B. Pruning and limited tree removal permit. Work permitted with arborist letter + performed by COBI certified contractor"…no geotech required…or email review of arborist proposal by geotech]:

No email review. Any geotech involvement will require a site visit, unacceptable liability for geotech.

Not surprised by this, makes sense.

7. Preventative care STRUCTURAL PRUNING OF TREES should be allowed ANYWHERE in SJ and Critical area slopes without Bluff Management Plan or 3-inch rule restriction, per ANSI A300 Part 1 section 6 "Pruning objectives" which states (6.2) "Structural pruning shall consist of selective pruning to improve tree and branch architecture primarily on young and medium-age trees."

This is clearly illustrated and defined in Dr. Ed Gillman book "Structural Pruning: A Guide For The Green Industry."

OK Provided it promotes healthy root systems

I can't think of any reason health of roots could be negatively impacted by structural pruning. Structural pruning young trees prevents most failures large limbs and secondary trunks as trees mature, and helps maintain balanced canopy. By preventing large canopy failures later in life, structural pruning helps maintain an even load on root system, (no sudden changes) and provides a more steady flow of carbohydrate to help build a stronger trunk and root system.

9. TREE PRESERVATION OLDER TREES, including thinning endweight large limbs, heading secondary tops, etc. without 3-inch rule restriction in SJ and slopes.

Reasoning: Many BI residents have great interest in preserving older trees. Many old trees serious structural defects require intervention to restore low risk. May require "heading" cut(s) > 3 inches to reduce risk failure (looks like topping). Often tree would otherwise be removed as hazard tree.

Same as above regarding health root systems

Similar to structural pruning commentary above. Preservation pruning older trees can reduce load on roots in short term (without the sudden impact of larger failures that can shorten the tree lifespan significantly). By extending lifespan of tree, this pruning helps maintain presence of live roots in long term.

10. **DEAD HAZARD TREES** can be shortened without geotech IF threat to high use areas and structures or slope

EXAMPLE: Dead tree within 1X to 2X striking distance of house at bottom of slope.

Reasoning: shortening a dead tree with a shrinking root system is only positively-affecting the slope.

OK but needs replanting to replace faster rotting root systems.

Replanting replace dead tree certainly makes sense to me. Some sites with dead trees (especially root rot disease centers Douglas-fir) are already well-stocked with native sown new trees such as western red cedar, alder, and bigleaf maple.

11. **REMOVAL OF SMALL TREES** (trunks less than significant dbh - 10 to 12 inches diameter) WITHIN TEN (10) FEET OF A STRUCTURE without removing the stump. Example: Willow trunks growing (or re-growing) near back of house.

Reasoning: Again, trees grow quickly. Remove trees with poor structure overgrowing and shade-damaging trees with ideal long-term structure.

Would need replanting on slopes similar to dead tree removal.

Regenerative species shouldn't require replanting, as long as they are not killed. Stump sprouts may be removed up to 1x per year but only during the dormant season to sustain live stump unless replacement trees planted. Better to let sprouts grow for 2 or 3 years before re-coppicing during dormant season, to build up larger carbohydrate reserves.

12. Minor maintenance **PRUNING IN SLOPE AND BUFFER AREAS** to maintain view, tree stability, or good structure that does not include removal of more than 25% live canopy per any 3 year period, and no live tree removal.

Reasoning: Trees grow back into views quickly, and must be maintained. Often best to make smaller pruning cuts more frequently, in some cases annually (Currently requires new Clearing Permit every year? with Bluff Management Plan?)

OK provided strong root systems are maintained.

Good. As side note to Planning this is the most likely pruning to get out of control so should require a simple over the counter permit with simple pruning plan.

13. THINNING OF SMALL COMPETING TREES EVEN ON UNSTABLE SLOPES (alders, bigleaf maples, etc) to favor trees with best structure and location (maintain at least 75% canopy coverage and no net loss ecological function).

Reasoning: Healthiest trees retain some lower branches which are otherwise shaded out by competition from smaller nearby trees fighting for light resource. Thinning prevents spindly, weak, half-canopy, and leaning trees.

EXAMPLE: Headed trees (shortened) on unstable slopes usually spread branches wider. Since trying to control height we need to maintain sunlight to lower live canopy these trees so branches there stay alive for best health and stability / coverage on slope. "Low and stable vs. tall and fall!"

14. COPPICING OR RE-COPPICING REGENERATIVE SPECIES (including natives) that are either small or previously coppiced (bigleaf maple, madrone, cottonwood, willow species etc) usually on short relatively stable slopes - or upper half of tall slopes - to control size WHILE maintaining strong root systems intact on slope.

?Should we maintain 50% canopy coverage on slope at all times, evenly distributed across slope?
EXAMPLE: coppice 50% trunks each clump of trunks OR coppice every other clump at arborist discretion.

Reasoning: These are usually multiple trunks under 12 inch DBH (diameter at breast height - 4.5 feet) that have resprouted from old stumps. Pruning typically repeated every 2 to 10 years to retain vigor.

These are culturally modified trees. Many have been maintained this way for 50 to 75 years or more. Should be allowed WITHOUT 3-inch rule restriction since this is best way to manage these trees - without losing stabilizing roots. If unmaintained these trees fall down in all directions and can become big risk, especially if people downslope.

NOTE: red alders may not regenerate well especially if coppiced after lower branches have been shaded out. Instead of coppicing, alders should be crown-reduced, headed, or removed. Timing of cuts should avoid largest springtime flight of alder bark beetles.

15. Trimming for up to 5 foot clearance beach access lift trams and beach access stairs AND WATERFRONT DOCKS AND STRUCTURES (**does not include live tree removal or killing of vegetation**).

Reasoning: trimming is usually done annually or every couple years to allow access and normal maintenance.

[Regarding items 13, 14, and 15]:

OK provided root system are kept alive.

Determining what is stable and unstable is site specific. Trees in unstable area are not necessarily bad for stability. Removal/killing of smaller trees in unstable areas can increase instability. Should require a geotechnical review and site visit.

OK. Item 13 could have a short term effect on roots, but these are small crowded trees, and by the time some roots rot others will be crowding in filling any vacancy. Results in trees that are MUCH more stable even on unstable soil.

**LEVEL C. WORK REQUIRING LIMITED GEOTECH EVALUATION
(GEOTECH TO DETERMINE IF FULL REPORT AND BLUFF MANAGEMENT PLAN**

NECESSARY) + ARBORIST LETTER + PERFORMED BY COBI CERTIFIED CONTRACTOR.

ON SLOPES (OR WITHIN 15 FOOT BUFFER TOP OF SLOPE):

Removal of more than three (3) live non-significant and non-regenerating trees per 12-month period; or removal such trees that exceeds 10 percent net loss of canopy coverage? Replanting required if net loss will not be remediated within 3 years by natural growth to restore net loss, or if canopy coverage Zone 1 is below 65% after removal.

Removal of live significant trees (over 10 or 12 inches dbh) on slopes greater than 40 percent

Removal of live significant trees slopes with known history of instability within last 50(?) years..

Tree removal on slope or in buffer at top-of-slope for site development including clearing, grading, drainage, etc for new development.

Anything else?

This could be the checklist we talked about that could start with a site visit. Geotech determines level of risk based on scope of work. Checklist would determine if bluff management and what level of bluff management would be required.

This is a checklist supplied by the Planning Department to help applicant/geotech determine quickly if they will need a full geotech report. Since I wrote this, I have noted that Kitsap County requires buffer vegetation beginning from lower toe of slope to 25 feet beyond top of slope. The BI shorelines buffer on slopes requiring "height of slope" buffers on all sides is the most excessive buffer I have ever seen in any code I've looked at, including Seattle and other jurisdictions, especially when this is applied below the toe of the slope. A 150 foot geotech buffer for veg. pruning and limited removals is ridiculous and results in huge amount of non-compliance with code. This "bug" in the code favors contractors who disregard veg code in general.

[Section regarding views]:

SOLUTION: Limited use of "heading cuts" must be allowed in leu of some removals to retain canopy coverage on slopes and shorelines while protecting key views and vistas. These cuts should be limited to trees growing up into key views and vistas where a reduction cut cannot/should not be used to achieve similar result.

Reasoning: Use of this ANSI approved pruning technique avoids majority of tree removals for views, retaining canopy cover for hillsides. Trees look near normal from below.

Challenge: Must be maintained on 2 to 6+ year cycle ideally (consider growth rate, tree age, viewer distance from trees, etc), to avoid large cuts.

Pruning is allowed provided it results in the long term increase and strength of root system even if it takes a season to rebuild roots.

Also, heading must not be used extensively to establish large panoramic views on crown dominant conifers, but simply as an incentive to use a vista pruning style, which will minimize impacts on majority of trees on most sites.

However, trees in views that have been maintained this way historically should be allowed to be maintained so we don't compromise the trees or the slope.

Chapter 16.20

CRITICAL AREAS

16.20.100 Fish and wildlife habitat conservation areas

A. Purpose. This section applies to all Fish and Wildlife Habitat Conservation Areas, as categorized in Section 16.20.130(B) below. The intent of this Section is to:

1. Preserve natural flood control, stormwater storage, and drainage or stream flow patterns;
2. Control siltation, protect nutrient reserves, and maintain stream flows and stream quality for fish and marine shellfish;
3. Prevent turbidity and pollution of streams and fish or shellfish bearing waters;
4. Preserve and protect habitat adequate to support viable populations of native wildlife and fish on Bainbridge Island; and,
5. Encourage non-regulatory methods of habitat retention whenever practical, through education and the Open Space Tax Program.

A. Applicability

This section applies to all Fish and Wildlife Habitat Conservation Areas as classified in BIMC 16.20.130.XX except those located within the city's shoreline jurisdiction, which are regulated by the city's shoreline master program (BIMC 16.12).

B. Fish and Wildlife Habitat Conservation Areas Categories include:

1. Streams. Within the city of Bainbridge Island streams shall include those areas which meet the definitions in BIMC 16.20.XX. Streams shall be classified in accordance with the Washington Department of Natural Resources water typing system (WAC 222-16-030) hereby adopted in its entirety by reference and summarized as follows:

a. Type F: streams which contain fish habitat pursuant to BIMC 16.20.XX (Definitions):

i. Anadromous fish-bearing streams: streams in which anadromous fish are known to occur. As of 2017, anadromous fishbearing streams are known to include Springbrook Creek, Dripping Water Creek, Manzanita Creek, Murden Creek/Woodward Creek, Cooper Creek, The Ravine, Mac's Dam Creek, and two unnamed streams (Blakely Harbor and Schel Scheb/Pleasant Beach); and

ii. Non-anadromous fish-bearing streams: streams which do not support anadromous fish populations and do not have the potential for anadromous fish occurrence because of barriers to fish passage or lack of suitable habitat.

b. Type Np: perennial non-fish habitat streams; and

 Number: 1 Author: Jamie Subject: Sticky Note Date: 5/26/2017 12:24:04 PM
030 does not distinguish between anadromous v. resident stream habitats.

030 also requires use of 'presumed fish presence' (physical) criteria upstream from manmade barriers to fish passage, recognizing that the barriers are illegal and will be removed at some point.

Recommend: don't distinguish between resident and anadromy. Give the Island's geography, most fish habitats are or will be accessible to both.

Alternatively -

- i. stream reaches that provide fish habitat downstream from permanent natural barriers to anadromy.
 - ii. 'stream reaches that provide fish habitat upstream from permanent natural barriers.'
- [add definition for permanent natural barrier]

 Number: 2 Author: Jamie Subject: Sticky Note Date: 5/26/2017 11:49:56 AM
replacing 'bearing' with 'habitat'

 Number: 3 Author: Jamie Subject: Highlight Date: 5/26/2017 11:49:31 AM

 Number: 4 Author: Jamie Subject: Sticky Note Date: 5/26/2017 11:48:10 AM
what kind of barriers? This should be permanent natural barriers, as described in Forest Practices Board Manual Section 13.

Man-made barriers to fish passage should not provide justification for a 50' reduction in buffer width as they are illegal and will be removed in the coming years.

c. Type Ns: seasonal non-fish habitat streams.

d. Need language about if anadromous fish presence is documented in future due to change in conditions (e.g.; blockage removed)¹



2. Habitats recognized by federal or state agencies for federal- and/or state-listed endangered, threatened, sensitive and candidate/monitored species which presence is documented in maps or databases available to City of Bainbridge Island.

3. Areas that contain habitats and species of local importance.

4. Biodiversity areas and corridors are areas of habitat as defined in the 2008 Washington Department of Fish and Wildlife Priority Habitat and Species List, or as amended.

5. Areas targeted for preservation by federal, state and/or local government which provide fish and wildlife habitat benefits, such as important waterfowl areas identified by the U.S. Fish and Wildlife Service or Washington Department of Fish and Wildlife.

6. All areas within the city of Bainbridge Island meeting one or more of these criteria, regardless of any formal identification or mapping, are hereby designated critical areas and are subject to the provisions of this chapter and shall be managed consistent with the best available science, such as the Washington Department of Fish and Wildlife's most recent Management Recommendations for Priority Habitat and Species.

C. Mapping

The location and extent of all mapped critical areas shown on the city of Bainbridge Island critical area maps are approximate and shall be used as a general guide only. The type, extent and boundaries shall be determined in the field by a qualified professional according to the requirements of this chapter. The critical area maps (provide hyperlink) are adopted as part of this chapter and are incorporated herein by this reference. Washington Department of Natural Resource (DNR) and Washington Department of Fish and Wildlife maps are not the only source of data. Any request to change the city's existing map shall be accompanied by a report from a qualified professional that includes a description of the critical area and a summary of how it meets the definitions in BIMC 16.20.XX. The inventory and cited resources are to be used as a guide for the city, project applicants, and/or property owners, and may be continuously updated as new or altered critical areas are identified



D. Permit and review procedures

1. Any development, use or activity within any fish and wildlife habitat conservation area shall require a critical area permit unless it qualifies as an exempt activity, as provided in BIMC 16.20.160.XX.

 Number: 1 Author: Jamie Subject: Highlight Date: 5/26/2017 11:59:52 AM

 Number: 2 Author: Jamie Subject: Sticky Note Date: 5/26/2017 11:56:30 AM
Need to protect this habitat NOW so it is there when the barrier is removed.

 Number: 3 Author: Jamie Subject: Highlight Date: 5/26/2017 12:14:31 PM

 Number: 4 Author: Jamie Subject: Sticky Note Date: 5/26/2017 12:15:44 PM
which maps? Hopefully WFC. If DNR, need to re-emphasize disclaimer.

2. Critical area permits shall be reviewed pursuant to the criteria in BIMC 16.20.XX and any applicable state or federal management recommendations.

3. Applications for critical area permits for fish and wildlife habitat conservation areas shall include:

- a. City of Bainbridge Island Master Land Use Application (hyperlink); and
- b. Habitat Management Plan (HMP) prepared in accordance with BIMC 16.20.XX.

4. The City may request technical review of a HMP from other agencies to ensure consistency with state, federal or tribal management recommendations.

E. Development Standards – Streams

1. All designated streams require a buffer pursuant to Table X. Buffers shall remain as undisturbed native vegetation areas for the purpose of protecting the integrity, function, and value of stream resources. Any buffer modification proposed shall be through an approved Buffer Enhancement Plan. No uses or activities shall be allowed within the buffer unless allowed by this section. If the buffer has previously been disturbed, the director may require the disturbed buffer area be revegetated pursuant to an approved Buffer Enhancement Plan meeting the requirements of BIMC 16.20.160.XX. No refuse, including but not limited to household trash, yard waste and commercial/industrial refuse, shall be placed in the buffer.

2. The required minimum buffers listed in Table X are based on the assumption that the buffer is well vegetated with native species appropriate to the site. If the buffer does not consist of vegetation adequate to provide stream protection and buffer functions, the director may require that the buffer be planted to achieve such protection and function.

Table X. Stream Buffers

<u>Stream Type</u>	<u>Buffer Width</u>
<u>F (anadromous)</u>	<u>200</u>
<u>F (non-anadromous)</u>	<u>150</u>
<u>Np</u>	<u>100</u>
<u>Ns (connected to F or Np)</u>	<u>75</u>
<u>Ns (not connected to F, Np)</u>	<u>50</u>

3. Buffer distances shall be measured from the ordinary high water mark (OHWM) or from the top of the bank where the OHWM cannot be identified. Buffers shall be retained in their natural condition.



4. The buffer width shall be increased to include streamside wetlands which provide overflow storage for stormwater, feed water back to the stream during low flow, or

 Number: 1 Author: Jamie Subject: Highlight Date: 5/26/2017 12:20:59 PM

 Number: 2 Author: Jamie Subject: Sticky Note Date: 5/26/2017 12:19:42 PM
make it clear that it's measured off of each bank to avoid surprises...

provide shelter and food for fish. In braided channels, the ordinary high water mark or top of bank shall be defined so as to include the entire stream feature.

5. Streams in Ravines - Buffers. For streams in ravines outside the Mixed Use Town Center with ravine sides 10 feet or greater in height, the buffer width shall be the greater of:

- i. The buffer width required for the stream type; or
- ii. A buffer width which extends 25 feet beyond the top of the ravine.

6. Increased buffer provisions. The director may increase buffer widths, up to 50 percent greater than the applicable buffer set in this chapter for critical areas with known locations of endangered, threatened, or state monitor or priority species for which a habitat management plan indicates a larger buffer is necessary to protect habitat values for such species. Such determination shall be based on site-specific and project-related conditions.

7. Structure or hard surface setback. A structure or hard surface setback line of fifteen feet is required from the edge of any stream buffer. Minor structural or impervious surface intrusions into the areas of the setback, such as but not limited to fire escapes, open/uncovered porches, landing places, outside walkways, outside stairways, retaining walls, fences and patios, may be permitted if the department determines upon review of an analysis of buffer functions submitted by the applicant, that such intrusions will not adversely impact the stream. The functional analysis shall include a functional methodology supported by best available science. The setback shall be identified on a site plan and filed as an attachment to the notice on title as required by Section 16.20.XX (Notice on Title).

8. Buffer Modification. On each site, only one of the following modifications to buffer widths may be allowed provided the applicant demonstrates the need for modification through mitigation sequencing pursuant to BIMC 16.20.XX.

a. Buffer Width Averaging. The width of a required buffer may be averaged if the applicant can demonstrate that averaging can provide equal or greater functions and values as would be provided under the required buffer this will improve the protection of stream functions and all of the following conditions are met:

- i. The total area of buffer after averaging is equal to the area required without averaging.
- ii. The buffer at its narrowest point is never less than 75 percent of the required width.

b. Buffer Width Reduction. The width of a required buffer may be reduced if the applicant can demonstrate that the reduction will provide equal or greater functions and

values as would be provided under the required buffer this will improve the protection of stream functions and all of the following conditions are met:

- i. The buffer may not be reduced more than 25 percent of its required width.
- ii. Native vegetation on other portions of the site is retained in order to offset habitat loss from buffer reduction.

c. Any request for buffer modification outlined above (BIMC 16.20.160.XX-XX) shall be reviewed in conjunction with the underlying land use or construction permit. A critical area permit is not required. Requests for buffer averaging or buffer reduction shall include a buffer enhancement plan prepared by a qualified consultant that meets the requirements of BIMC 16.20.XX. Buffer enhancement plans shall be reviewed pursuant to the criteria in BIMC 16.20.XX.

d. The City may request technical review of a HMP from other agencies to ensure consistency with state, federal or tribal management recommendations.

e. Any other buffer modification, other than non-compensatory enhancement, requires a Reasonable Use Exception pursuant to BIMC 16.20.XX.

E. Development Standards – Fish and Wildlife Habitat Conservation Areas

1. All uses and activities within known fish and wildlife habitat conservation areas require submittal and approval of a Habitat Management Plan (HMP) as specified in BIMC 16.20.XX (Critical area reports). The HMP shall consider measures to retain and protect the wildlife habitat and shall consider the effects of land use intensity, buffers, setbacks, impervious surfaces, erosion control and retention of existing native vegetation.

2. In the case of bald eagles, the HMP shall comply with the federal Bald and Golden Eagle Protection Act (16 USC 668) to avoid impacting eagles and their habitat.

F. Development standards for specific development, uses and activities. The following development, uses and activities may be allowed within fish and wildlife habitat conservation areas and their buffers. Any proposal for the following development, uses and activities requires a critical area permit pursuant to BIMC 16.20.XX and shall comply with the standards of this section and other applicable state, federal and local regulations. The Director may waive the requirement for a HMP when project impacts are demonstrated to be de minimis through mitigation sequencing pursuant to BIMC 16.20.XX.

1. Stream Crossings. Any private or public road or driveway expansion or construction which is allowed and must cross streams classified within this chapter, shall comply with the following minimum development standards:

a. Bridges or bottomless culverts shall be required for all streams which have salmonid breeding habitat. Other alternatives may be allowed upon submittal of a Habitat Management Plan which demonstrates that other alternatives would not result in significant impacts to the Fish and Wildlife Conservation Area, as determined appropriate through the Washington State Department of Fish and Wildlife, Hydraulics Project Approval process. The plan must demonstrate that salmon habitat will be replaced on a 1:1 ratio not be reduced in area or function.



b. Crossings shall not occur in salmonid spawning areas unless no other feasible crossing site exists. For new development proposals, if existing crossings are determined to adversely impact salmon spawning or passage areas, new or upgraded crossings shall be located as determined necessary through coordination with the Washington State Department of Fish and Wildlife;



c. Bridge piers or abutments shall not be placed in either the floodway or between the ordinary, high water marks unless no other feasible alternative placement exists;

d. Crossings shall not diminish flood carrying capacity;

e. Crossings shall serve multiple properties whenever possible;

f. Where there is no reasonable alternative to providing a conventional culvert, the culvert shall be the minimum length necessary to accommodate the permitted activity.

2. Stream Relocations. Stream relocations for the purpose of flood protection and/or fisheries restoration shall only be permitted when adhering to the following minimum performance standards and when consistent with a Washington State Department of Fish and Wildlife Hydraulic Project Approval:

a. The channel, bank, and buffer areas should be replanted with native or equivalent vegetation that replicates a natural, undisturbed riparian condition;

b. For those shorelands and waters designated as Frequently Flooded Areas pursuant to BIMC 16.20.140, a professional engineer licensed in the State of Washington shall provide information demonstrating that the equivalent base flood storage volume and function will be maintained; and

c. Relocated stream channels shall be designed to meet or exceed the functions and values of the stream to be relocated.

3. Pesticides, Fertilizers and Herbicides. No pesticides, herbicides or fertilizers may be used in Fish and Wildlife Conservation Areas or their buffers, except those approved by the U.S. Environmental Protection Agency (EPA) and approved under a Washington Department of Ecology DOE Water Quality Modification Permit for use in Fish and Wildlife Habitat Conservation Area environments. Where approved, herbicides must be applied by a licensed applicator in accordance with the safe application practices on the label.

 Number: 1 Author: Jamie Subject: Sticky Note Date: 5/26/2017 12:22:24 PM
Don't specify 'breeding.'

 Number: 2 Author: Jamie Subject: Sticky Note Date: 5/26/2017 12:24:36 PM
replace salmon with fish. WDFW regs (design criteria, HPA, etc.) protect fish life, not just salmonid life.

4. Land Divisions and Land Use Permits. All land divisions and land uses proposed on a site that includes Fish and Wildlife Habitat Conservation Areas shall comply with the following procedures and development standards:

a. The open water area of lakes, streams, and tidal lands shall not be permitted for use in calculating minimum lot area.

b. Land division approvals shall be conditioned so that all required buffers are designated as an easement or covenant encumbering the buffer. Such easement or covenant shall be recorded together with the land division and represented on the final plat, short plat or binding site plan.

c. In order to avoid the creation of non-conforming lots, each new lot shall contain at least one building site that meets the requirements of this chapter, including buffer requirements for fish and wildlife habitat conservation areas. Each lot must also have access and a sewage disposal system location that are suitable for development which do not adversely impact the Fish and Wildlife Conservation Area.

d. After preliminary approval and prior to final land division approval, the Director may require that the common boundary between a required buffer and the adjacent lands be identified using permanent signs. In lieu of signs, alternative methods of buffer identification may be approved when such methods are determined by the Director to provide adequate protection to the aquatic buffer.

4. Agricultural Restrictions. ~~In all development proposals which would permit introduction of agriculture to Fish and Wildlife Habitat Conservation Areas, damage to the area shall be avoided by one of the following methods:~~ New agricultural activities and new structures accessory to agriculture use are prohibited in fish and wildlife habitat conservation areas and their buffers. Existing, ongoing agricultural shall utilize best management practices so as to not result in a net loss of the functions and values of wetlands. Existing, ongoing agriculture shall avoid impacts to wetlands by either: 

a. Implementation of a farm resource conservation and management plan agreed upon by the Kitsap Conservation District and agriculture operator to protect and enhance water quality; or

b. Installation of fencing no closer to the stream than the outer edge of its required buffer. 

~~a. Implementation of the farm conservation plan agreed upon by the Kitsap Conservation District and the applicant, to protect and enhance the water quality of the aquatic area; and/or,~~

~~b. Fencing located not closer than the outer buffer edge.~~

5. Trails and Trail-Related Facilities. Construction of public and private trails and trail-related facilities, such as benches, interpretive centers, and viewing platforms, may be allowed in Fish and Wildlife Habitat Conservation Areas or their buffers pursuant to the following standards:

a. Trails and related facilities shall, to the extent feasible, be placed on existing road grades, utility corridors, or other such previously disturbed areas;

 Number: 1 Author: Jamie Subject: Sticky Note Date: 5/26/2017 12:25:33 PM

 Number: 2 Author: Jamie Subject: Highlight Date: 5/26/2017 12:25:25 PM

 Number: 3 Author: Jamie Subject: Highlight Date: 5/26/2017 12:25:49 PM

 Number: 4 Author: Jamie Subject: Sticky Note Date: 5/26/2017 12:25:56 PM
or wetland

b. Trails and related facilities shall be planned to minimize removal of trees, shrubs, snags and important wildlife habitat;

c. Viewing platforms, interpretive centers, benches and access to them, shall be designed and located to minimize disturbance of wildlife habitat and/or critical characteristics of the affected conservation area;

d. Trails, in general, shall be set back from streams so that there will be no or minimal impact to the stream from trail use or maintenance. Trails shall be constructed with pervious surfaces when feasible.

6. Utilities. Placement of utilities within designated Fish and Wildlife Habitat Conservation Areas may be allowed pursuant to the following standards:

~~a. The minor utility maintenance authorized in BIMC 16.20.040(C) shall be allowed within designated Fish and Wildlife Habitat Conservation areas, subject to best management practices.~~

~~ab. Construction of utilities may be permitted in Fish and Wildlife Habitat Conservation Areas or their buffers, only when no practicable or reasonable alternative location is available and the utility corridor meets the requirements for installation, replacement of vegetation and maintenance outlined below, and as required pursuant to BIMC 16.20.160(G) (Special Use Review), which may be required by this Chapter.~~

~~be. Sewer or on-site Sewage Utility. Construction of sewer lines or on-site sewage systems may be permitted in Fish and Wildlife Habitat Conservation Areas or their buffers when the applicant demonstrates it is necessary to meet state and/or local health code requirements; there are no other practicable alternatives available; and construction meets the requirement of this section. Joint use of the sewer utility corridor by other utilities may be allowed.~~

~~cd. New utilities corridors shall not be allowed in Fish and Wildlife Habitat Conservation Areas with known locations of federal or state listed endangered, threatened or sensitive species, heron rookeries or nesting sites of raptors which are listed as state candidates except in those circumstances where an approved Habitat Management Plan indicates that the utility corridor will not significantly impact the conservation area;~~

~~de. New Utility Corridor Construction. Utility corridor construction and maintenance shall protect the environment of Fish and Wildlife Habitat Conservation Areas and their buffers.~~

~~i. New utilities corridors shall be aligned whenever possible to avoid cutting or root damage to trees greater than 12 inches in diameter at breast height (four and one-half feet) measured on the uphill side.~~

~~ii. New utility corridors Any area of disturbance shall be revegetated with appropriate native or equivalent vegetation at not less than pre-construction vegetation densities or greater, immediately upon completion of construction or as soon thereafter as possible due to seasonal growing constraints. The utility or landowner responsible for installation shall ensure that such vegetation survives.~~

~~iii. Any additional corridor access for maintenance shall be provided wherever possible at specific points rather than by parallel roads. If parallel roads are necessary, they shall be of a minimum width but no greater than 15 feet; and shall be~~

Comments on CAO update:

Christy, I ran through the May 18 packet to planning commission, so my comments address the sections that were provided in this packet.

First, a comment on the discussion at the planning committee meeting regarding allowed use review: I greatly appreciate the consideration of adding a review component for allowed uses. If they are included and actually go through review and monitoring mitigation actions, that is likely to lead to far better outcomes for compliance and no net loss.

16.20.130 wetlands

-Section G in the wetland chapter: Is there a reason that the list of prohibitions is only applicable to Category 1 and 2 wetlands? Is there a reason we would allow any of these uses in Category 3 or 4? Given that category 3 and 4 wetlands over half the rated wetlands on this Island, that seems like a very large number of wetlands to potentially expose to risks that could be severely impactful on these critical areas.

-Section H part 7, trails: I have some concerns about the wording in subsection d: trails shall, to the extent feasible, be located within the outer 25 percent of the buffer...trail locations closer to the wetland may be allowed if the primary purpose of the trail is wetland viewing or enjoyment..."; the protection of wetland function should take a higher priority than "wetland enjoyment" by people. The second part of this sentence, which addresses "if there are no reasonable alternatives..." seems sufficient to cover conditions when trails may need to infringe, and this wording that allows for enjoyment/viewing should be removed.

- part 8, utilities, subsection i: I suggest removing the phrase "when possible". Just align the utilities to avoid cutting large trees. I would also add that new utilities should be aligned to minimize tree removal to the greatest extent practicable.

-I Wetland Buffers Section 7b averaging: Could it be clarified what is meant by "no more than a 25% buffer reduction? Are we talking about the entire buffer width that adjoins a property? Are talking about the point of development as it infringes on the wetland? I am guessing the former as the latter probably invokes averaging. If the former, is there a way to look at this in a cumulative analysis framework- that is, you know there is a request for buffer reduction, can you look at it as a percentage of the total buffer of that wetland that is being impacted, or the potential total? Because it seems as though the cumulative impact of buffer reductions really depends on what other stressors are occurring or may be realized for that wetland.

P 40 wetland buffer mitigation: This brings up a larger question as to whether we really think that a mitigation scenario based solely on narrowly defined wetland replacement is achievable, or even desirable, with a small land area and highly variable topography such as ours. I am skeptical we can achieve no net loss goals this way- particularly if we restrict such sequencing to on-site mitigation. Also, putting the burden of finding an "appropriate" site to replace altered wetlands seems like a losing proposition. To my mind, in order for wetland mitigation to be successful, we need two things: we need a robust restoration plan for our Island which

identifies wetlands that have lost functionality or size and that are appropriate for remediation; and we need a mechanism for citizens and developers to contribute to the implementation plan that may not necessarily be the individuals conducting the replacement work themselves. In other words, we need a mitigation bank, as alluded to in Section 10 – but practically speaking do we have anything like this? – and, importantly, a funding mechanism, so that there is a clear avenue for permittees to actually contribute fruitfully to successful mitigation efforts. Lacking this, what we have is a recipe for confusion on the part of the permittee who may have no idea how to complete such mitigation; if they hire an individual expert to accomplish it, they are quite likely to get a fragmented, one-off postage stamp remediation project out of it. If we as a City committed to funding large-scale restoration of wetland function, I think we could get far more return on investment. It is a larger community conversation as to whether this would only be funded through mitigation requirements or through broader development fees, but I think this is an approach we need to seriously consider.

16.20.030 definitions:

-Currently the CAO defines “fish and wildlife habitat” as a unit, thusly:

“Fish and wildlife habitat” means 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 the long- term. These include areas of relative density or species richness, breeding habitat, winter range, and movement corridors. These also include habitats of limited availability or high vulnerability to alteration, such as cliffs, streams and wetlands.

It would be more appropriate to provide separate definitions for fish habitat and for wildlife habitat, and to use the definition [provided in the WAC](#) as follows: “**Fish habitat**” means habitat, which is used by fish at any life stage at any time of the year including potential habitat likely to be used by fish, which could be recovered by restoration or management and includes off-channel habitat.

16.20.040 exemptions

B3. Select vegetation removal: First, does anyone actually come to the planning department and ask for written authorization for removing small amounts of invasive vegetation on non-steep slopes? It seems to me that the likelihood of this is exceedingly low; and if it’s simply an over-the-counter exercise with zero ground truthing, what are we really gaining by asking for this? We should be using everything in our power to encourage folks to be removing invasive species off their property. If we’re requiring a relatively manageable sized area, not on steep slopes, my feeling is we can trust the homeowner’s judgement, and not insert a requirement here that has an exceedingly low probability of ever being given an opportunity for regulatory oversight.

It should not be a requirement that invasive weeds are always removed off site. If done properly, non-seeding invasives like ivy foliage or non-fruited holly can successfully be composted on site. Sometimes, the level of infestation of these plants makes it frankly

infeasible/prohibitively expensive to conduct removal of all materials off site, and if they can be safely composted on-site then it should be allowed.

Finally, I think it would be helpful for sections of the CAO addressing invasive plants to reference the [State's Noxious Weeds List](#) as well as reference our [County Noxious Weed Board](#) as a resource, particularly for class A listed weeds (landowners should be reporting these).

16.20.100 Fish and Wildlife Habitat Conservation Areas

For defining fish habitat: [WAC 22-16-031](#), Type 3 streams, may also be useful in helping define Type F waters, and in particular note that there is an allowance for stream gradients of up to 20% for watersheds of at least 50 acres in size, which describes and is appropriate to our watersheds.

B.1. Rather than naming streams that are known to be fish-bearing (because this list already misses several including Issei Creek, Coho Creek, Dripping Water Creek among others), wouldn't it be more appropriate to just refer to the City's most recent stream typing data? Especially since that gets you around subsection d, because stream typing already identifies potential fish habitat.

4. I have no idea what this means "biodiversity areas and corridors are areas of habitat as defined in..." is this a relevant description for our island? PHS lists have very little data for Bainbridge outside of a couple of T&E spp, and that isn't a corridor/biodiversity issue anyway.

5. Do we really have "important waterfowl areas identified by USFWS or WDFW"? Perhaps in our nearshore environment, addressed via the SMP, but for our critical areas?

E5. Streams in ravines: can I ask what the science is that supports a buffer width that is 25 feet beyond the top of the ravine? Because if either i. or ii. may be used, it would seem to me that a 25 ft buffer is substantively less protective than the prescribed buffer widths in Table X. I'll give you an example: a substantive portion of the upper reaches of Murden Creek is in a very deep ravine with banks >10 ft in height. Are we seriously saying it is ok to reduce the buffer width to within 25 feet of these banks, which have pretty minimal horizontal distance and therefore minimal riparian corridor within that ravine?

8b. I have the same question regarding buffer width averaging here as I do with wetlands- see my comments above.

2. Stream locations. I'd like to see this wording changed to "stream relocations ARE ONLY PERMITTED FOR THE PURPOSE OF flood protection or fisheries restoration and shall only be permitted when..."

6. When we are talking about utility placement in any critical area, is it not in the City's interest to have such construction projects bonded so that there is a financial commitment to remediation and revegetation? And would it be helpful to state a minimum standard for "survival" of vegetation so that there is criteria for judging success- eg, 80% survival over 3 years, similar to wetland mitigation requirements?

Thanks for the opportunity to comment,

Deb Rudnick