

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

PUBLIC COMMENT – Accept public comment on off agenda items

CRITICAL AREAS ORDINANCE – Study Session

NEW/OLD BUSINESS

ADJOURN

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

Chair J. Mack Pearl called the meeting to order at 6:07 PM. Planning Commissioners in attendance were Maradel Gale, Jon Quitslund, William Chester, Michael Killion and Lisa Macchio. Michael Lewars was absent and excused. City Staff present were Planning Director Gary Christensen, Senior City Planner Christy Carr and Administrative Specialist Jane Rasely who monitored recording and prepared minutes. City Consultant Dave McCormack from Aspect Consulting provided professional geotechnical information.

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

PUBLIC COMMENT – Accept public comment on off agenda items

None.

CRITICAL AREAS ORDINANCE – Study Session

Chair Pearl spoke about feeling rushed to get through the material of the Critical Areas Ordinance and asked about pushing their recommendation to City Council out to mid-July asking Ms. Carr and the other Commissioners whether they felt it would be a bad thing to forward something they didn't feel had been reviewed adequately. Conversation proceeded from there to adding additional verbiage to require post-development infiltration to remain the same as pre-development infiltration.

Ms. Carr introduced Dave McCormack, the City's Geotechnical Consultant who helped the Commissioners review the geologically hazardous areas of the ordinance. Factors of safety, setbacks and buffers (with a recommended 75-foot largest setback) and the effects of climate change on the standard being set.

Mike Juneau, Arborist – Had a list of questions for Mr. McCormack about dealing with trees and vegetation management on slopes.

Ms. Carr pointed out changes to the Winslow Ravine section of the ordinance. Coppicing was briefly reviewed again with a consensus that it should be allowed every three years as opposed to every five years. Tree replacement was also discussed.

Mike Juneau, Arborist – Asked that a certified arborist be present when a hired crew is working on a slope. Ms. Carr stated there was not any way to enforce that.

NEW/OLD BUSINESS

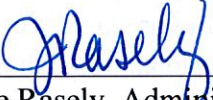
None.

ADJOURN

The meeting was adjourned at 9:05 PM.

Approved by:


J. Mack Pearl, Chair


Jane Rasely, Administrative Specialist



**CITY OF
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PLANNING COMMISSION REGULAR MEETING**

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June 22, 2017

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**CITY OF BAINBRIDGE ISLAND
PLANNING COMMISSION REGULAR MEETING**

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MEMORANDUM

Project No.: 170233

June 22, 2017

To: Christy Carr, City of Bainbridge Island

From:

Alison J. Dennison, LG

Andrew J. Holmson, PE

David H. McCormack, LEG

Re: DRAFT Geotechnical Engineering Services for Critical Areas Ordinance Update

The City of Bainbridge Island (City) is conducting updates to the Bainbridge Island Municipal Code (BIMC) Chapter 16.20 and 16.12.060—Critical Areas. Aspect Consulting, LLC (Aspect) is providing geotechnical engineering professional services associated with this update. The City Council members have provided comments related to five topics that the commissioners have discussed over the last several months with regards to the BIMC updates. This memorandum presents our responses and comments for the City's consideration and incorporation into the BIMC updates.

Topic 1: Vegetation Removal Activities

City Comment

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.** *The Commission would like to allow for invasive and weedy vegetation removal on slopes but agrees there needs to be geo review in some cases. Coppicing was discussed—there is an interest in allowing management of weeding shade-tolerant species (e.g., holly and laurel) with this method. Is there a threshold of removal that could be done without geo review? There was agreement that the regulations need to be crafted so as to not discourage management of these invasive and weedy species.*

Aspect Response

Some vegetation alteration/removal activities do not significantly increase risk in geologically hazardous areas and we recommend permitting avenue(s) to allow for minimal professional review, other significant activities need to be evaluated individually by professionals (arborist/geotech). To differentiate between vegetation alteration/removal activities, we recommend a Checklist that



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applicants can fill out. We recommend that this form be called a Checklist as to reduce confusion with the geotechnical Step forms used with building permit applications. The Checklist would flow through the process of determining what level of assessment would be needed using a list of Yes/No questions and could be submitted as part of the permit package. Restrictions on activities during the wetter, winter months should be implemented.

Vegetation activities in/near geotechnically hazardous areas would be defined as activities on a steep slope (40 percent or greater slope) or within a 25-foot vegetation buffer of the top of the steep slope.

The updated municipal code could reference the Checklist and discuss what we proposed as three levels of permitting requirements related to vegetation removal/alteration activities in/near geologically hazardous areas: minimal potential impact (no arborist, no geotech requirement), moderate potential impact (arborist evaluation, no geotech), and major potential impact (arborist and geotech evaluation). With a little more detail, the levels could include:

1. **Minimal Potential Impact**: Examples may include, but are not limited to: simple invasive/noxious vegetation removal and replacement with native species (limited to work with hand-held tools) with disturbance under a particular square footage; removal of vines from tree trunks; pruning of woody plants (mature hedges); canopy reduction under a particular percent; coppicing and recoppicing of trees under a particular size; removal of dead branches and dead top of trees; pruning of live branches under certain circumstances (near driveway or overhead utility); tree preservation of older trees (including thinning end-weight large limbs, heading secondary tops, etc.); removal of small trees under 4 inches in diameter; and vegetation removal activities at the toe of a steep slope.
2. **Moderate Potential Impact**: Examples include, but are not limited to: hazard tree determination/removal to stump; structural pruning of trees; creation of wildlife snags limited by amount; exceeds other thresholds listed as a Minimal Potential Impact.
3. **Major Potential Impact**: Examples include, but are not limited to: exceeds other thresholds listed as a Minimal Potential Impact or Moderate Potential Impact; areas where landslides or severe erosion has occurred within the last 50 years; construction activities within the vegetation buffer (25 feet from top of steep slope) or on steep slopes or landslide hazard areas. Requires certified arborist letter to plan and review proposed activities. Requires evaluation and letter from a licensed, geotechnical professional (PE, LG, LEG).

It is our understanding that the City will prepare a draft Checklist and provide it to Aspect for review and input.

If a geotechnical assessment is required for vegetation removal activities, the assessment should include a review of the arborist report, a site reconnaissance to evaluate existing site conditions, and a letter summarizing the conditions observed along with conclusions and recommendations section. The observations should include: site conditions, drainage (natural and human-installed) patterns, vegetation patterns, geology, geologically hazardous area characteristics, and landslide history, as applicable.

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Topic 2: Buffers**City Comment**

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). *The Commission agrees that there should be no standard buffer (50 feet or height of slope) but that there should always be a minimum buffer of at least 10 feet. They like the idea of the buffer being determined by the geological assessment instead of having a standard buffer, and calling the “buffer” a “setback.”*

Aspect Response

Aspect agrees that the steep slope terminology should be Setback. The term Setback implies a life and safety connotation. Aspect recommends that the Setback for habitable structures (residence, additional dwelling unit [ADU]) be the height of the slope up to 75 feet unless a geotechnical assessment is completed, but with a minimum Setback of 20 feet. The current limited exception for slopes less than 20 feet in height will remain.

Topic 3: Structure Setback**City Comment**

Specify what can be in structure setback, above and below ground, or consider eliminating a separate setback postconstruction and include in either the minimum buffer or the buffer specified in the geological assessment. *There was not consensus on whether or not to require a structure setback without knowing its actual function for slope stability postconstruction. There was some agreement that it may make sense to have the structure setback included in the overall setback as determined by the geological assessment.*

Aspect Response

We recommend that the code define Setbacks for different uses:

- habitable structures (residence, ADU);
- high-risk nonhabitable structures (decks, patios, pools, driveways, trams, cable lifts);
- lower-risk nonhabitable structures (intended for short-term use: storage sheds under 200 square feet, access stairs); and
- other elements (drainfields, drainage systems, drainage outfalls, bulkhead, landscape walls, utilities).

Activities on a steep slope and within the Setback should be evaluated in accordance with the terminology above.

Topic 4: Factors of Safety**City Comment**

Consider different factors of safety for different types of structures (e.g.; habitable vs. nonhabitable structures, minor structures such as stairs). *The Commission agreed there should be different factors of safety for different types of structures.*

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Aspect Response

Aspect will provide recommendations for the static and seismic factors of safety and the minimum Setback for each of the structures defined above. This will be based on Best Available Science (BAS; reference to be included in listed BAS). This information will be forthcoming.

Structure or Activity Type	Static Factor of Safety	Seismic Factor of Safety	Minimum Setback
Habitable structure	1.5	1.1	Height of slope up to 75 feet; unless geotechnical assessment completed. Minimum 20-foot Setback. Limited exception for slopes less than 20 feet in height.
High-risk nonhabitable structures	To be determined, pending BAS review.	To be determined, pending BAS review.	Determined by geotechnical assessment.
Lower-risk nonhabitable structures	No factors of safety recommended, qualitative evaluation only.	No factors of safety recommended, qualitative evaluation only.	Height of slope up to 75 feet; unless geotechnical assessment completed. Allowed to be reduced to 0 feet.
Other elements	No factors of safety recommended, qualitative evaluation only.	No factors of safety recommended, qualitative evaluation only.	Height of slope up to 75 feet; unless geotechnical assessment completed. Allowed to be reduced to 0 feet.

Topic 5: Standards for Existing Development

City Comment

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 Commission does not want to allow any expansion on the face of a slope or on a historic landslide. The exception for existing development would be that upgrades needed for structural/seismic safety would be allowed even if it resulted in an expansion of the footing/foundation. Can “footprint” be defined to clarify this?*

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Aspect Response

Improvements to existing structures (or portions of existing structures) located within a geologically hazardous area or the Setback should be allowed with appropriate engineering considerations and design. Improvements should be limited to the structural footprint of existing habitable structures and existing high-risk nonhabitable structures located within the geologically hazardous area. Suggest a limited exemption list of safety improvements that are allowed to expand the existing footprints (piles, soil anchors, etc.).

Limitations

Work for this project was performed for the City of Bainbridge Island (Client), and this memorandum was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This memorandum does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

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16.20.130 Geologically hazardous areas.

Commented [CC1]: Also need to review report requirements.

A. Applicability.

1. This chapter applies to all geologically hazardous areas classified pursuant to BIMC 16.20.130.B except as specified in subsection (2) of this section.
2. This section does not apply to geologically hazardous areas located within the city's shoreline jurisdiction, which are regulated by the city's shoreline master program (BIMC 16.12).

B. Classification.

1. Geologically hazardous areas include erosion hazard areas, landslide hazard areas, and seismic hazard areas (including fault and liquefaction hazard areas). Zone of influence areas are not considered geologically hazardous areas.
2. 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.

Commented [CC2]: Verify definition.

Commented [CC3]: Added so applicants are aware.

Commented [CC4]: Verify this section is correct and necessary.

C. Permit and review procedures.

1. Any development, use or activity proposed on a site containing any geologically hazardous area or a landslide hazard area buffer shall require a critical area permit unless it qualifies as an exempt activity, as provided in BIMC 16.20.XX or is allowed without review pursuant to BIMC 16.20.090.
2. Critical area permits shall be reviewed pursuant to the criteria in BIMC 16.20.XX.
3. Applications for critical area permits for geologically hazardous areas shall include:
 - a. City of Bainbridge Island Master Land Use Application (hyperlink); and
 - b. Indemnification. An indemnification or hold harmless agreement shall be required for all projects in geologically hazardous areas, except erosion hazard areas and tsunami hazard areas, and landslide hazard area buffers. The form of the agreement shall be approved by the City and executed prior to the commencement of construction or site alteration.
 - c. 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 complete

Commented [CC5]: General exemptions at beginning of critical areas section.

Commented [CC6]: New tree and vegetation section that specifies when geotech review is required.

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.

- d. Geological Hazards Assessment. A geological hazards assessment is required for all projects in geologically hazardous areas and landslide hazard area buffers in accordance with BIMC 16.20.180, Critical area reports. To protect public health, safety and welfare, the director may require third party review of any geological hazards assessment or 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.

D. **Development Standards – General.** The following development standards apply to all activities within any geologically hazardous area or associated landslide hazard area buffer:

Commented [CC7]: These have not changed; factors of safety moved to landslide hazard areas.

1. The proposed activity shall not create a net increase in geological instability, either on- or off-site, which is defined as follows:
 - a. The subject parcel shall not be less stable after the planned development than before; and
 - b. The adjacent parcels shall not have greater risk or be less stable after the planned development than before.
2. The proposed activity shall not increase the risk of life safety due to geological hazards above professionally acceptable levels.
3. The proposed activity shall not increase the risk due to geological hazards above professionally acceptable levels for:
 - a. Property loss of any habitable structures or their necessary supporting infrastructure on-site or;
 - b. Risk to any off-site structures or property of any kind; and
4. 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.
5. The proposed activity shall not further degrade the values and functions of the associated critical areas.
6. Unless allowed pursuant to BIMC 16.20.090 or as part of an approved building permit, removal of vegetation from an erosion or landslide hazard area or buffer is prohibited.

Commented [CC8]: This was added to capture vegetation removal that is part of a building permit – allowed clearing limits – and to emphasize that no other veg removal is allowed.

E. **Development Standards -- Landslide Hazard Areas.** The following requirements shall apply to any land disturbing activity or construction within a landslide hazard area or its buffer as described herein:

Commented [CC9]: This section is new to separate the standards that only apply to landslide hazard areas.

1. Allowed activities. All development, uses and activities in landslide hazard areas on slopes forty (40) percent or greater is prohibited except as allowed by **BIMC 16.20.130.F**;
2. Any land disturbing activity or construction within a landslide hazard area or its buffer shall meet the following requirements:
 - a. All development proposals shall be designed to avoid impacts to 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;
 - b. 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;
 - c. Access shall be in the least sensitive part of the site, and common access drives and utility corridors are required to the extent feasible;
 - d. Roads, walkways and parking areas shall be designed to parallel the natural contours to the extent feasible;
 - e. Cut and fill slopes shall be prepared and maintained to control against erosion and instability; and
 - f. Drainage and stormwater designs in zones of influence shall incorporate elements of low impact design, add examples to the extent feasible, and shall be designed in such a manner that stormwater outlet discharges do not create additional impacts.
3. **Factors of safety.** 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.
4. Buffer requirement.
 - a. 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.
 - b. No buffer is required for slopes forty (40) percent or greater with a vertical elevation change of up to twenty (20) feet, if compliance with development standards in **BIMC 16.20.130.XX** is documented by a geotechnical engineer licensed in the State of Washington.
 - c. The buffer may be increased beyond that specified in subsection (i) 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.
5. Buffer reduction. Where no reasonable alternative exists, reduction to the buffer may be allowed as follows:

Commented [CC10]: This is minor development, described below.

Commented [CC11]: These have not changed.

Commented [CC12]: Dynamic may increase. Different factors of safety to be established for different types of structures/uses. Would be lower for non-habitable structures.

Commented [CC13]: This may change.

Commented [CC14]: Need to reference appropriate standards, including factors of safety.

Commented [CC15]: Do we want to keep this language? "Reasonable alternative" means an activity that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation.

Who decides what is reasonable? This definition does not real apply to geohazards.

- i. A critical areas report, pursuant to BIMC 16.20.180 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.D.
- ii. A buffer reduction shall not result in a buffer less than (10) feet for slopes forty (40) percent or greater.

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

Commented [CC16]: This may change based on if buffer is changed.

7. **Zone of influence.** A zone of influence is required 300 feet upslope from slopes greater than 40 percent and 200 feet upslope from slopes greater than 15 percent but less than 40 percent that are determined to be geologically hazardous areas. The applicant shall have the stormwater pollution prevention plan (erosion control 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.

Commented [CC17]: This was revised to include distance of zone (currently only in definitions section) and clarify what needs to be reviewed.

8. **Field marking requirements.** Proposed clearing and work limit lines and landslide hazard buffers shall be marked in the field for inspection and approval by the city prior to start of any land disturbing activity. Field marking shall remain in place until construction is completed and final inspection is completed by the city.

Commented [CC18]: This is new.

F. Development standards for specific development, uses and activities. The following development, uses and activities may be allowed within geologically hazardous areas and their required buffers. Any proposal for the following development, uses and activities requires a critical area permit pursuant to BIMC 16.20.130.X and shall comply with the standards of this section and other applicable state, federal and local regulations.

Commented [CC19]: Standards will basically be different (lower) factors of safety, if needed.

Commented [CC20]: Need to clarify which standards – not all standards will apply.

1. Stormwater facilities
2. Septic facilities
3. Trails
4. Cable lift or tram
5. Other private or public utilities or streets
6. Seismic/safety upgrades
7. Critical facilities

16.20.050 Standards for existing development

Option A:

A. Existing structures and related improvements. Structures and related improvements that were legally built or vested prior to the effective date of Ordinance No. 2017-17 that do not meet the requirements of this chapter may continue to exist in their present form, and may be altered, including remodeled, reconstructed, or expanded, if such alteration complies with the provisions of this Section.

B. Existing structures, that were legally built or vested prior to the effective date of Ordinance No. 2017-17 may be altered if:

1. There is no change in the footprint of the structure;
2. Any interior work is entirely inside the existing structure; and
3. Any expansion of the footprint is outside the critical area and its required buffer.

C. Existing property improvements other than structures, including driveways, parking areas, yards and landscaped areas, play areas, storage areas, and similar improvements that were legally established or vested prior to the effective date of Ordinance No. 2017-XX may be altered if:

1. There is no change in the location of the improvement;
2. Any alteration of the improvement is entirely inside of the existing boundaries of the improvement;
3. Any expansion of the footprint is outside the critical area and its required buffer.

D. Alterations permitted by this Section must comply with other applicable city code or land use review requirements and will be reviewed with the underlying building permit, if required. A critical areas permit is not required.

Option B:

A. Existing structures and related improvements. Structures and related improvements that were legally built or vested prior to the effective date of Ordinance No. 2017-17 that do not meet the requirements of this chapter may continue to exist in their present form, and may be altered, including remodeled, reconstructed, or expanded, if such alteration complies with the provisions of this Section and all other applicable sections of this Chapter.

Commented [CC21]: Trying to capture geohazard areas here – no separate section.

Commented [CC22]: Clarify reconstruction – total rebuild in same footprint allowed? Could refer to BIMC 18.30 – Nonconforming structures zoning code.

B. Existing structures that were legally built or vested prior to the effective date of Ordinance No. 2017-17 may be altered if only one alteration is allowed within the lifetime of the development and:

1. The expansion of the footprint at ground level does not exceed 500 square feet;
2. Any expansion of the footprint is used only as indoor living space or to accommodate accessibility;
3. Any expansion of the footprint is located only within the required buffer. No expansion of the footprint is allowed within the critical area itself; and
4. Any expansion of the footprint is no closer to the critical area than the existing footprint.

C. Existing property improvements other than structures, including driveways, parking areas, yards and landscaped areas, play areas, storage areas, and similar improvements that were legally established or vested prior to the effective date of Ordinance No. 2017-XX may be altered if:

1. There is no change in the location of the improvement;
2. Any expansion of the footprint is located only within the required buffer. No expansion of the footprint is allowed within the critical area itself; and
3. Any expansion of the footprint is no closer to the critical area than the existing footprint.

D. Alterations permitted by this Section must comply with other applicable city code or land use review requirements and require submittal of a critical areas permit application in accordance with the permit and review procedures required for the affected critical area(s).

Commented [CC23]: Revisit re: historic landslide hazard areas (e.g.; Crystal Springs). Approximately 125 houses are currently located on a critical area – historic landslide.

Commented [CC24]: This is supposed to mean they would need a geotech report for these types of alterations.