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June 23, 2023

MEMO

To: Alicia Hughes-Skandijs, Chair, Lands Housing & Economic Development Committee and Members

CC: Rorie Watt, City Manager

From: Jill Maclean, Director, AICI 

RE: An Ordinance Amending the Sensitive Areas Requirements of the Land Use Code Related to Landslide and Avalanche Areas

Helpful Tip

[Tetra Tech Technical Memo No. 4](#) provides a “*Guide to Avalanche and Landslide Hazard Designations*”. In other words, this memo provides the reader with a foundation towards understanding hazard mapping and its impacts. Staff strongly encourages all interested parties to read it prior to discussion. (Click link above and scroll down to Final Hazard Assessment to find Tech Memo No. 4)

Background

The downtown Juneau avalanche and landslide areas (also referred to as hazard areas) have been studied multiple times since the maps were first adopted in 1987. Over the decades, several attempts were undertaken to update the avalanche and landslide maps to no avail.

The adopted avalanche and landslide maps for downtown Juneau, dated September 9, 1987, are based on maps developed in the 1970s. These low-resolution maps combine landslide and avalanche areas into a single map, which identifies moderate and severe hazard areas. The avalanche and landslide areas cannot be distinguished, resulting in challenges for property owners to obtain property insurance. This lack of distinction also creates challenges for property owners seeking detailed safety information and mitigation options, because avalanche and landslide impacts are different. How and when to update the adopted landslide and hazard maps has been problematic for several decades, it is staff’s firm recommendation that the status quo should not be maintained.

With Assembly approval (Resolution Serial No. 2813), staff applied for FEMA grant funding to undertake an update and review of the adopted maps. During the FEMA grant application process, CDD consulted with CBJ Emergency Services, CBJ Lands Division, and the CBJ Engineering and Public Works to determine

the highest priority areas for updated hazard assessment based on known threats, critical infrastructure, housing density, and future development needs. Other priority areas not funded include the remaining stretch of Thane Road, Blackerby Ridge to Thunder Mountain, and the western side of Thunder Mountain. If the Assembly chooses, it may direct the City Manager to direct staff to apply for future grant funding for further hazard area assessments.

In 2018, CDD was awarded a grant from the Federal Emergency Management Agency (FEMA) to update these maps with current scientific analysis, and to evaluate avalanche and landslide areas separately. Following a competitive bid process, Tetra Tech Inc. was hired as the contractor.

The project area covered by Tetra Tech Inc. is larger than the currently adopted 1987 maps. Due to the increase in the scope area, approximately 42 properties have been evaluated for the first time, while the remaining properties have been updated. The following chart provides approximate figures on the changes between the adopted and proposed maps for severe areas.

	1987 Adopted Maps	2022 Proposed Maps
Number of properties within the mapped study area	1108	1150
Number of properties within high/severe landslide and avalanche zones	173	374
Number of properties within the 1987 adopted severe zone, but out of the 2021 proposed high/severe zone	16	N/A
Number of properties within the proposed 2021 high/severe zone, but out of the 1987 adopted severe zone	N/A	217

In August 2021, the Planning Commission (Commission) held a public hearing on the proposed Tetra Tech Inc. avalanche and landslide maps; a draft ordinance and regulations were not proposed at that time, as it was not part of the scope of the project and grant funding. At that time, the Commission forwarded the proposed map with a recommendation to the Assembly for direction on next steps for an appropriate community review and adoption process, including funding for steps which are deemed necessary. The Commission further recommended that new landslide and avalanche hazard mapping and study results should be held without adoption, pending development of associated hazard zone policies and regulations. The Commission also asked for preliminary direction from the Assembly.

In the fall and winter of 2021 to 2022, the Assembly reviewed the Commission’s Recommendation, and directed staff to further pursue FEMA grant funding to conduct public outreach, and to work with the contractor to develop additional technical memorandums to address public concerns and consult local avalanche experts.

CDD successfully procured additional FEMA grant funds which resulted in: updates to the avalanche maps; seven technical memorandums to address areas of concern and a user-friendly guide to the hazard designations; and website updates and a mailing to inform the public about the final report and memos. In December of 2022, the Manager presented a preliminary recommendation that was forwarded to the Planning Commission.

On May 23, 2023, the Commission held a public hearing on the proposed maps, and the revised draft ordinance that developed out of the Title 49 Subcommittee and was further reviewed by the Commission’s COW and forwarded to the full Commission for approval (Attachment A). At the hearing,

the Commission heard concerns from the public, and voiced its own concerns. In the Notice of Recommendation, the Commission recommended the following:

Do not adopt the director's analysis and findings, and do not adopt the proposed ordinance amending the code related to landslide and avalanche areas, and do not adopt the landslide and avalanche area maps. Consider a method of public notification based on the 2022 avalanche and landslide area maps for affected property owners.

The Assembly should note that this recommendation is rather different than what was contemplated at the COW December 19, 2022. Staff reports, minutes, and contractor presentations are available on the CDD Special Projects website at [CDD – Project – Landslide and Avalanche Assessment – City and Borough of Juneau](#). Links to the Commission hearings for August 21, 2021, and May 23, 2023, are available on the city website at: <https://juneau-ak.municodemeetings.com>. Meeting packets, including agendas, staff reports, and public comments; and a link to watch the meeting via Zoom are available via Municode.

Discussion

The Assembly has a difficult decision in determining how best to mitigate hazard areas in Juneau. Recognizing the difficulty in balancing the rights of property owners, the housing crisis, insurance challenges, and public health, safety, and welfare, staff has identified five potential options for the Assembly to consider. The Assembly should take time with this decision and strive to understand why the Commission made its recommendation and the abundant subtlety of the issues.

Option 1 maintains the status quo. Current, combined avalanche and landslide maps remain in effect, and the current land use code ordinance and regulations remain in effect. Insurance continues to be a challenge to property owners and interested buyers.

Option 2 is the adoption of the Planning Commission recommendation, stated above.

Option 3 repeals the current hazard maps and ordinance, and adopts the Tetra Tech maps and the CDD staff drafted ordinance that was presented to the Commission and not recommended by the Commission. The Commission and the public have voiced concern about this option.

Option 4 repeals the current hazard maps and ordinance, and adopts the Tetra Tech maps and studies as public information only (not adopted into the Land Use Code). No other requirements are included. (Note that this is a variant of the Commission's recommendation).

Option 5 adopts a path developed by staff in response to the concerns raised by the Commission and the public. This option repeals the current maps and current ordinance; and adopts the moderate and severe avalanche areas, and the moderate, severe and high landslide areas developed by Tetra Tech for public information purposes only. Additionally, the CBJ would annually notify the property owners in the moderate and severe avalanche areas and in the moderate, severe, and high landslide areas, and properties within 500 ft. of these mapped areas for awareness purposes; and requires property owners in the hazard areas to notify renters of the hazards (Attachment B). With the addition of a CUP requirement for development greater than a single dwelling unit, this option would be similar to the COW discussion from 12/2022.

Recommendation

The Committee should take steps towards selecting a path forward, including a recommendation that can be forwarded to the Committee of the Whole or the Assembly. If the LHEDC wants to hold this item in Committee for another meeting, it could do so. In closing, we strongly encourage interested parties to read [Tetra Tech Technical Memo No. 4](#).

Attachments

Attachment A: Draft Ordinance April 2023 Avalanche and Landslide Areas and Hazard Maps T49 Comm Revisions

Attachment B: Draft Ordinance June 2023 Avalanche Landslide Areas Staff Version

Presented by: The Manager
Presented: 2023
Drafted by:

ORDINANCE OF THE CITY AND BOROUGH OF JUNEAU, ALASKA

Serial No. 2023 XX

An Ordinance Amending the code related to avalanche and landslide areas and replacing the avalanche and landslide areas maps

WHEREAS, and...

BE IT ENACTED BY THE ASSEMBLY OF THE CITY AND BOROUGH OF JUNEAU, ALASKA:

Section 1. Classification. This ordinance is of a general and permanent nature and shall become a part of the City and Borough of Juneau Municipal Code.

Section 2. Amendment of Section. CBJC49.70.300 Avalanche and landslide areas is amended to read:

(a) *Generally.*

- (1) Development in mapped moderate and severe avalanche and severe landslide areas shall minimize the risk of loss of life or property due to landslides and avalanches.
- (2) Boundaries of severe avalanche areas will be as shown on the avalanche area maps dated April 27, 2022, as the same may be amended from time to time by the assembly by ordinance.
- (3) Boundaries of severe landslide areas will be as shown on the landslide area maps dated April 27, 2022, as the same may be amended from time to time by the assembly by ordinance.

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2 (4) Owners and developers shall provide written notice to potential buyers or renters that
3 the property is located in a moderate or severe avalanche area, or a severe landslide
4 area, or both.

5
6 (b) *Moderate and Severe avalanche areas.*

7 (1) Notwithstanding any other provision, subdivision other than a lot line adjustment, or a
8 lot consolidation, or development greater than a single-family dwelling within severe
9 avalanche areas shall require a conditional use permit. Lots platted as Public Use Lot(s)
10 must comply with 49.15.422.


11 (2) Notwithstanding any other provision, development greater than a single-family
12 dwelling, within the moderate or severe avalanche areas shall require a conditional use
13 permit with site specific engineering for the following: peak drainage, special foundation
14 or high back wall engineering, and debris flow diversion mechanisms. For the purposes
15 of this section, accessory dwelling units are considered development greater than a
16 single-family dwelling.

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21 (3) If a developer disagrees with the boundaries shown on the severe avalanche map, the
22 developer may seek departmental relocation of the boundaries by submitting a site
23 specific study prepared and stamped by a civil engineer licensed in the State of Alaska.
24 Such studies shall include detailed analyses of topography, vegetation, potential snow
25 accumulation, and other factors. The results should indicate actual hazard area
boundaries and potential debris flow direction, time, distance and mass. If, in the

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2 opinion of the Director of Engineering & Public Works, the studies clearly establish that
3 the map boundaries are inaccurate and the proposed development is outside a moderate
4 or severe avalanche area, the department shall proceed accordingly.

- 5
6 (4) The commission may require mitigating measures certified as effective by a civil
7 engineer licensed in the State of Alaska for development in moderate or severe
8 avalanche areas. Such measures may include dissipating structures or dams, special
9 structural engineering, or other techniques designed for the site. Mitigating measures
10 may also include reduction in the proposed density, occupancy, or development.

11 (c) *Severe landslide areas.*

- 12
13 (1) Notwithstanding any other provision, no subdivision other than a boundary line
14 relocation, a lot line adjustment, or a lot consolidation, shall be approved in a severe
15 landslide area. Applications for all other subdivision types shall not be accepted for filing
16 or shall be rejected by the director.
- 17
18 (2) Notwithstanding any other provision, no development, which is within a severe landslide
19 area shall increase the density of the lot or increase the occupancy of the building;
20 provided, that a single-family dwelling may be constructed on a vacant lot. Accessory
21 dwelling units are not permissible on lots located in a severe landslide area.
- 22
23 (3) Notwithstanding any other provision, development including a single-family dwelling
24 within the severe landslide areas shall require a conditional use permit with site specific
25 engineering for the following: peak drainage, special foundation or high back wall
engineering, and debris flow diversion mechanisms. 

1
2 (4) The commission may require mitigating measures certified as effective by a civil
3 engineer licensed in the State of Alaska for development in severe landslide areas. Such
4 measures may include dissipating structures or dams, special structural engineering, or
5 other techniques designed for the site. Mitigating measures may also include reduction
6 in the proposed density, occupancy, or development.
7

8 (5) If a developer disagrees with the boundaries shown on the severe landslide map, the
9 developer may seek departmental relocation of the boundaries by submitting a site
10 specific study prepared and stamped by a civil engineer licensed in the State of Alaska.
11 Such studies shall include detailed analyses of topography, vegetation, potential snow
12 accumulation, and other factors. The results should indicate actual hazard area
13 boundaries and potential debris flow direction, time, distance and mass. If, in the
14 opinion of the Director of Engineering & Public Works, the studies clearly establish that
15 the map boundaries are inaccurate and the proposed development is outside a severe
16 landslide area, the department shall proceed accordingly.
17

18 (d) *Warning and disclaimer of liability.* Avalanches and landslides may occur outside hazard
19 areas in excess of engineering expectations. The location and severity of the event may be
20 increased by manmade or natural causes. This article does not imply that land outside of
21 designated hazard areas, or uses permitted within such areas, will be free from danger or
22 damage. This article shall not create liability on the part of the City and Borough of Juneau
23 or any officer or employee thereof for any damages that result from reliance of this article or
24 any administrative decision lawfully made under this article.
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2 **Section 4. Amendment of Section.** CBJC 19.04.R301.9 Geophysical hazards is
3 amended to read:

4 "301.9 *Geophysical hazards.* In Severe geophysical hazard zones as shown in
5 "Downtown Juneau Landslide and Avalanche Hazard Assessment" dated April 27, 2022, and
6 on the "Moderate and Severe Avalanche Maps and Severe Landslide Area Map", both adopted
7 ~~by ordinance serial no. 87-49,~~ adopted _____ 2023 or when the building official
8 determines that development is proposed in an area similar in nature to those studied in the
9 above referenced documents, and is located outside of the study area, an engineered
10 structural analysis shall be submitted with the permit application. The building official may
11 waive this requirement upon presentation of more specific studies prepared and stamped by a
12 civil engineer licensed in the State of Alaska showing the proposed site is not likely to be
13 affected by geophysical hazards."
14

15 **Section 5. Amendment of Section.** Hillside Development CBJ 49.70.210(a)(4) is
16 amended to read:

17 Any hazard area identified on the avalanche and landslide area maps dated ~~September~~
18 ~~9, 1987,~~ April 27, 2022 consisting of sheets ~~1—8~~, as the same may be amended from time to
19 time by the assembly by ordinance or any other areas determined to be susceptible to
20 geophysical hazards.
21

22
23 **Section 6. Amendment of Section.** Definitions CBJ 49.80.120 is amended to read:

24 Accessory dwelling unit (ADU) means a subordinate dwelling unit added to, created
25 within, or detached from a single-family residence, which provides basic requirements for
living, sleeping, cooking, and sanitation. The unit may have a separate exterior entrance or an

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2 entrance to an internal common area accessible to the outside. ADUs are not included in the
3 density calculation for a site.

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5 Density means the amount of development per acre permissible on a parcel under the
6 applicable zoning, measured as dwelling units per acre (du/ac).

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10 **Section 7. Effective Date.** This ordinance shall be effective 30 days after its adoption.

11 Adopted this _____ day of _____, 2023.

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14 _____
Beth A. Weldon, Mayor

15 Attest:

16 _____
Elizabeth J. McEwen, Municipal Clerk

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49.70.300 Avalanche and Landslide areas.

(a) Warning and disclaimer of liability. Avalanches and landslides may occur outside mapped hazard areas. The location and severity of the event may be increased by manmade or natural causes. This article does not imply that land outside of mapped hazard areas will be free from danger or damage. This article shall not create liability on the part of the City and Borough of Juneau or any officer or employee thereof for damages that result from reliance on this article or any administrative decision lawfully made under this article.

(b) Generally.

- (1) Boundaries of potential landslide areas are shown on maps dated April 27, 2022.
- (2) Boundaries of potential avalanche areas are shown on maps dated April 27, 2022.
- (3) For the purposes of this article, “hazard” refers to avalanche or landslide.

(c) Public Notice. The purpose of public notice is to reasonably inform interested parties that resources are available for review.

- (1) A link to hazard maps and reports will be clearly posted on the City and Borough of Juneau’s Community Development Department web site, and remain posted year-round.
- (2) In (insert month) of each year, notice of the maps and their links will be:
 - (A) Mailed to properties within:
 - (i) Moderate and severe mapped avalanche zones,
 - (ii) Moderate, high and severe mapped landslide zones,
 - (iii) Properties within 500 feet of these zones, AND
 - (iv) Post office boxes hosted by the Federal Station post office, located in the Federal Building at 709 West 9th Street as of this regulation.

Failure to mail notice to a person as provided in this section does not invalidate an action taken by an agency under this chapter.

- (B) Published in a newspaper of general circulation.
- (C) Distributed to the municipal clerk and each municipal library.

(d) Recorded documents. The City and Borough of Juneau will record a notice that a property is in a hazard zone with the Alaska Department of Natural Resources Recorder’s Office. The notice will include:

- (1) The nature of the hazard (avalanche or landslide)
- (2) The designation of the hazard
 - (A) Moderate and severe for avalanche
 - (B) Moderate, high and severe for landslide

(3) A copy of the hazard map, legible in black and white print.

(4) Notice that owners are obligated to notify renters of the hazard, and a form for doing so.

(e) Owner obligation. Owners of properties in the hazard zone must:

(1) Notify tenants of the hazard in writing on a form acceptable to the City and Borough of Juneau.