

**ASSEMBLY STANDING COMMITTEE
LANDS, HOUSING & ECONOMIC DEVELOPMENT COMMITTEE
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

April 12, 2021, 5:00 PM.

Zoom Webinar

Lands, Housing, and Economic Development Committee Attendee link:

<https://juneau.zoom.us/j/94215342992> Or iPhone one-tap : US: +13462487799,,94215342992#
or +16699006833,,94215342992# Or Telephone: Dial(for higher quality, dial a number based on
your current location): US: +1 346 248 7799 or +1 669 900 6833 or +1 253 215 8782 or +1 312
626 6799 or +1 929 436 2866 or +1 301 715 8592 Webinar ID: 942 1534 2992

AGENDA

- I. CALL TO ORDER**
- II. ROLL CALL**
- III. APPROVAL OF AGENDA**
- IV. APPROVAL OF MINUTES**
 - A. March 15, 2021 Draft Minutes**
- V. PUBLIC PARTICIPATION - Those participating via telephone can press *9 or those that are participating on Zoom can use the “raise their hand” function to participate.**

(Not to exceed a total of 10 minutes nor more than 2 minutes for any individual).
- VI. AGENDA TOPICS**
 - A. ADOT Request for Easements along Douglas Hwy.**
 - B. Floodplain Ordinance (Ord. 2021-06)**
- VII. STAFF REPORTS**
 - A. Duck Creek Update (verbal)**
 - B. Urban Avalanche Mapping & Operational Forecasting**
- VIII. COMMITTEE MEMBER / LIAISON COMMENTS AND QUESTIONS**
- IX. NEXT MEETING DATE**
 - A. Monday, May 10, 2021**
- X. ADJOURNMENT**

ADA accommodations available upon request: Please contact the Clerk's office 36 hours prior to any meeting so arrangements can be made for closed captioning or sign language interpreter services depending on the meeting format. The Clerk's office telephone number is 586-5278, TDD 586-5351, e-mail: city.clerk@juneau.org

**ASSEMBLY STANDING COMMITTEE MINUTES
LANDS HOUSING AND ECONOMIC DEVELOPMENT COMMITTEE
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

March 15, 2021, 5:00 P.M.

Zoom Webinar Meeting

I. ROLL CALL

Chair Gladziszewski called the meeting to order at 5:00pm.

Members Present: Chair Maria Gladziszewski, Wade Bryson, Alicia Hughes-Skandijs, Greg Smith

Members Absent: none

Liaisons Present: Chris Mertl, Parks and Recreation

Liaisons Absent: Dan Hickok Planning Commission, Chris Dimond, Docks and Harbors

Other Assembly Members Present: Loren Jones

Some Members of the Public Present: Lacey Derr, Brian Holst

Staff Present: Dan Bleidorn, Lands Manager; Roxie Duckworth, Lands & Resources Specialist; Scott Ciambor, Chief Housing Officer; Jill Maclean, CDD Director

II. APPROVAL OF AGENDA

Agenda was approved as presented.

III. APPROVAL OF MINUTES

February 1, 2021 Draft Minutes were approved as presented.

IV. PUBLIC PARTICIPATION

Those participating via telephone can press *9 or those that are participating on Zoom can use the "raise their hand" function to participate. No public participation.

V. AGENDA TOPICS

A. Housing Task List Update

Mr. Ciambor discussed CBJ housing activities since the adoption of the Housing Action Plan (HAP), a requested topic from the Committee. This packet contains a spreadsheet highlighting actions taken by year since 2016 in three categories, direct funding and financial incentives, planning and zoning and other regularity barrier activities, and details on the utilization of CBJ land and other assets. Another spreadsheet on calculations on direct CBJ funding toward housing activities by year is also included.

Highlights include extensive work on updates to the Land Use and Building codes; completion of a wide range of small area and larger plans (HAP, Juneau Economic Development Plan, and Land Management and Implementation Plan); continuous disposal of land for housing (Lena, Renninger, and Pederson Hill subdivisions); and increased use of financial incentives through programs, such as the Accessory Apartment Incentive Grant, Mobile Home Loan Down Payment Assistance, and COVID-19 Rental Assistance, direct funding to projects, such as

Housing First, cold weather shelter, senior Assisted Living, and Glory Hall Emergency Shelter, and tax abatement.

The final version of the housing matrix looked at concerns from the 2012-14 timeframe and included a wide-range of code, zoning, incentive, and staffing ideas. The matrix includes updates that show that many of these concerns were addressed at the time or incorporated into the HAP. Some ideas were not applicable to CBJ efforts. Since the HAP was adopted, a new housing policy resource has been created that focuses on local housing policy tools. NYU Furman Center and Abt Associates, a long time contractor for HUD, created the website localhousingsolutions.org.

The 2021 HAP Task List include short-term HAP activities, such as implement downtown tax abatement, address downtown parking, implement the Juneau Affordable Housing Fund, develop strategies to increase the fund, and work with community land trust options. Medium-term HAP activities include develop the Upstairs Downtown loan program for rehabilitation and code compliance upgrades, strategies for short-term rental units and the impact on housing stock, inclusionary zoning, RFP for the 2nd and Franklin parking lot, and preservation strategy for existing affordable housing. Ongoing HAP activities include housing data and housing action plan updates, project list and reporting mechanism for the Housing Officer, small area and neighborhood plans, and track and monitor outcomes of the housing programs.

Mr. Bryson asked about the Pederson Hill disposal strategy and one complaint that he has heard over the years is that by the City doing all of the work it drove up the costs of the lots. He asked why the City won't sale the land to a developer so that it can be more cost effective. Mr. Bleidorn replied that the value of the land was sold at appraised value and if a private developer would sale the land at less than appraised value then that would be the only way a private developer would provide the land at a cheaper value. The first stage of Pederson Hill included the access road up to the subdivision and only 18 lots were made available during this phase. As far as the houses being built, the people who purchased the lots are building them and if they wanted to build a small house, they could. The lowest appraised value on the market was \$128,000 and the highest was around \$140,000. A handful of lots were purchased by developers to build houses for people and some lots purchased by individuals. Four lots were sold to Tlingit and Haida, who haven't started building on them. Something to consider for the next phase is the option to work with other entities. Housing and Lands have been in discussions to retain some lots for work force housing. In the next few months, we will bring conceptual ideas back to the Committee. 16 out of the 18 lots have been currently sold. Mr. Bryson followed up by commenting that if the City goes in to build the roads and develops and plots the land, then the City is determining the size of the land then CBJ has to charge fair market value on that size, then why not sell the raw land at market value for the raw land and let the developers build the roads and plot the lands. Chair Gladziszewski asked if we could table this conversation about Pederson Hill to another meeting. Mr. Ciambor commented that it has been discussed in the past how to get some of these lots into a community trust model, with the function being that the land stays in a trust and the house only would be on the market.

Chair Gladziszewski asked if the Committee had received a report on the Upstairs Downtown program. Mr. Ciambor replied that the Upstairs Downtown inventory was completed in October 2018 and it had been through this Committee a couple of times with highlights that emphasized that there is minimal amount of housing in this area and reaffirms the need for housing. Chair Gladziszewski asked to clarify what housing meant in this context. Mr. Ciambor replied that the

report showed the actual housing units at the time of the study and that there was a number of units not online that could be identified to what those circumstances are, but the inventory is the number of units in the area. Chair Gladziszewski asked about the incentives to develop those empty spaces into housing. Mr. Ciambor replied staff could look at incentive programs to bring them online. Chair Gladziszewski commented that she would like to see staff bring these topics back to the Committee, Community Land Trust and Upstairs Downtown Incentives.

Mr. Bryson commented about the Medium term activities and preservation strategies for existing affordable housing. The more affordable housing is, the more older the home that would need more repairs. As we raise the vacancy rate, then those that want to upgrade cannot afford to, which is a component of this strategy.

Mr. Smith asked about the Ad Hoc recommendations and if they have been ranked in any way. Mr. Ciambor replied that the housing matrix was put together in the 2012-2014 period. There has been a ton of ideas, some not applicable, due to State statues or the City choosing not to participate. Many of the ideas have been run to ground with many completed. Chair Gladziszewski commented about concerns from developers working with CDD. Ms. Maclean commented this was addressed in her presentation for Item B.

B. Development Activity and Title 49 Revision Overview (verbal update)

Ms. Maclean discussed this item. CDD has experience staff change, including the hiring of Ms. Maclean to bring about change and a high performing culture. Consultants have been brought in to work with staff on CDD's vision, mission, and values. The vision of CDD is to foster excellence in development for this generation and the next. The mission is to facilitate sustainable and responsible development that respects and preserves the history and cultures of Juneau. CDD values are professionalism, integrity, inclusivity, and innovation. CDD is made up of three divisions, administration and permitting or the permit center, building and code compliance, and planning, which is land use, development, and long-term planning. CDD also staffs General Engineering as well as the Planning Commission and all of the subcommittees. With the current staff now, CDD is trying to get to "yes" within the codes for permitting.

The Land Use code revisions include floodplain maps, downtown parking, Auke Bay zoning, ADOD, Accessory Apartments, common walls for residential and mixed use, streamside buffers, small cell wireless, landscape and vegetative cover, signs, urban agriculture, mobile homes and RVs, private shared access, and ROWs phrasing cleanup. This list of revisions went to the Planning Commission and the Assembly in December 2020.

Chair Gladziszewski asked about the basic gist of downtown parking and streamside changes. Ms. Maclean replied that the streamside ordinance would be broken into tiers, possibly up to three. Permits will be reviewed at the director level with some asking for exceptions to the code to go to the Planning Commission. Downtown parking will use the same name as the Comprehensive Plan land use designation for consistency, the Town Center Parking District. The boundary borders have been expended and there will no longer be a parking district one or two. Waivers are also proposed to go away and shared/joint use parking will be revamped. A developer can work to put together these parking approaches to best work to their advantage.

Planners' workloads are being realigned with a more focused approach for better customer service and greater efficiency. Planners' time and workloads are being monitored to track time and look for ways to continue to become more efficient. Because of Covid, more time has been

devoted to current planning and to get permits out the door to keep jobs moving in the community. CDD also has a planner on call each day for the Permit Center, as well as an inspector and someone from general engineering. Long-range and community planning includes Blueprint Downtown Juneau, South Juneau and West Douglas Area plan, the Auke Bay plan.

The Subdivisions ordinance was rewritten in 2015 where you no longer need a conditional use permit with now allowing the CDD director to approve up to 13 lots, with the Planning Commission approving 14 or more lots. So far, up to 2021, there have been 129 preliminary plats and 34 final plat cases. 246 plats have been approved since 2015 through this ordinance.

Mr. Mertl wanted to put in a good word for Ms. Maclean and CDD, as he has had good luck in working with CDD as an agent for developers and with other projects working with the codes. Some of the issues may be the ordinances, in that they may be unclear or cumbersome. He commented that if someone is trying to do something outside of code, then the answers from CDD would probably be “no” but CDD isn’t that much different than other community.

Mr. Bryson thought that the Housing Action Plan activities 16 through 19, was one of the most helpful tools he has seen in the LHED packets. They broke down what we have done for housing, planning, and the City’s assets.

Ms. Maclean highlighted the CDD Activity Dashboard that shows the number of housing units and the GIS layers, as well as the new permits and the different types. There are descriptions on the left hand side of the dashboard. New housing is also highlighted as well as the permits for new condos, single-family homes, accessory apartments and other features, such as transitional and up zoning. This dashboard is a work-in-progress draft and will be used as a tool for different housing projects.

Mr. Bryson asks if the dashboard can be viewed outside of this meeting. Ms. Maclean replied that she would send out the link to the committee after the meeting is over.

Mr. Smith commented that as someone looking for housing, he appreciates all of the attention and focus that has gone into housing and affordable housing for the community.

Mr. Bryson commented that there are two components in moving housing along, the Assembly has worked on creating housing, but what has not been addressed are the buyers. Mr. Bryson has been an advocate for programs not just to build properties but to also work on the equity component of homeownership. The Assembly should also look at homeowner education. Chair Gladziszewski commented that this could be a partnership with other entities, such as banks.

VI. COMMITTEE MEMBER / LIAISON COMMENTS AND QUESTIONS

No comments or questions.

VII. ADJOURNMENT

Chair Gladziszewski adjourned the meeting at 5:57 PM. The next meeting will be April 12, 2021.

MEMORANDUM

CITY/BOROUGH OF JUNEAU

Lands and Resources Office
155 S. Seward St., Juneau, Alaska 99801
Dan_Bleidorn@juneau.org
(907) 586-5252

TO: Maria Gladziszewski, Chair of the Assembly Lands Housing and Economic Development Committee

FROM: Dan Bleidorn, Lands and Resources Manager *Daniel Bleidorn*

SUBJECT: Alaska Department of Transportation and Public Facilities: Douglas Highway Acquisition and Easement Request

DATE: April 8, 2021

The State of Alaska Department of Transportation and Public Facilities (DOT&PF) has submitted an application to acquire 380 square feet of City property, four permanent easements across City property totaling approximately 1,000 square feet, and ten temporary construction easements totaling approximately 35,000 square feet.

The DOT&PF proposes to improve portions of the Douglas Highway between Egan Drive and St. Ann's Avenue. The proposed project will include resurfacing, sidewalk repairs, and upgrades to the bus stops, curbs, drainage improvements, and structural retaining wall improvements. The project begins at Egan Drive continuing across the Gastineau Channel Bridge to St. Ann's Avenue and will be completed in three stages.

City management of the requested properties is complex and includes land managed by the Lands Office, Parks and Recreation, the Fire Department, the Library, and Docks and Harbors. If a positive motion is received from the LHED Committee, the Lands Office will work with the managing departments to request comments and to insure that all concerns are addressed prior to this request being introduced to the Assembly by Ordinance.

Staff request that the Lands, Housing and Economic Development Committee pass a motion of support for disposing of City property through negotiated sale and by granting permanent easements and temporary construction easements to the ADOT&PF for fair market value.







Planning Commission

(907) 586-0715
PC_Comments@juneau.org
www.juneau.org/plancomm
155 S. Seward Street • Juneau, AK 99801

PLANNING COMMISSION NOTICE OF RECOMMENDATION

Date: June 29, 2020

Case No.: AME2020 0003

City and Borough of Juneau
City and Borough Assembly
155 South Seward Street
Juneau, AK 99801

Proposal: Planning Commission Recommendation to the City and Borough Assembly regarding a text amendment to revise and update Title 49 to adopt flood management regulations, maps, and a flood insurance study to meet Federal Emergency Management Agency requirements

Property Address: Borough-wide

Legal Description: N/A

Parcel Code Number: 0

Hearing Date: June 23, 2020

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated June 15, 2020 as amended, and recommended that the City and Borough Assembly adopt staff's recommendation with revisions as follows:

Findings as Amended:

1. Does the proposed text amendment comply with the Comprehensive Plan and other adopted plans?

Analysis: The proposed amendment balances the Comprehensive Plan and 2016 Housing Action Plan policies, and is generally consistent with the overall vision.

Finding: Yes. Adopting the proposed text amendment conforms to the 2013 Comprehensive Plan and the 2016 Housing Action Plan.

City and Borough Assembly
Case No.: AME2020 0003
June 29, 2020
Page 2 of 2

2. Does the proposed text amendment comply with Title 49 – Land Use Code?

Analysis: The proposed text amendment was drafted with the purpose and intent of Title 49 taken into account. If approved as drafted, it will be consistent with the above purposes, especially sections 49.70.400 and 49.70.410, Flood Hazard Areas.

Finding: Yes. Adopting the proposed text amendment conforms to the purpose and intent of Title 49 land use code. Additionally, adopting the proposed text amendment would not create any inconsistencies within the code.

RECOMMENDATION AS AMENDED

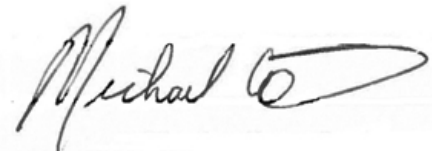
The Planning Commission recommends the Assembly adopt an ordinance updating and revising Title 49 and adopting flood management regulations, maps, and a flood insurance study to meet Federal Emergency Management Agency requirements.

Attachments: June 15, 2020 memorandum from Teri Camery, Community Development, to the CBJ Planning Commission regarding AME2020 0003.

This Notice of Recommendation constitutes a recommendation of the CBJ Planning Commission to the City and Borough Assembly. Decisions to recommend an action are not appealable, even if the recommendation is procedurally required as a prerequisite to some other decision, according to the provisions of CBJ 01.50.020 (b).

Project Planner: _____

Teri Camery, Senior Planner
Community Development Department



Michael LeVine, Chair
Planning Commission



Filed With Municipal Clerk

7/6/2020

Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this recommended text amendment. ADA regulations have access requirements above and beyond CBJ - adopted regulations. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.



PLANNING COMMISSION STAFF REPORT
TEXT AMENDMENT AME2020-0003
HEARING DATE: JUNE 23, 2020

(907) 586-0715
 CDD_Admin@juneau.org
 www.juneau.org/CDD
 155 S. Seward Street • Juneau, AK 99801

STAFF RECOMMENDATION:

Staff recommends the Planning Commission forward the proposed text amendment with a recommendation of **APPROVAL** to the Assembly.

ALTERNATIVE ACTIONS:

1. **Amend:** modify the proposed text amendment and recommend approval to the Assembly.
2. **Deny:** recommend denial of the proposed text amendment to the Assembly. Planning Commission must make its own findings.
3. **Continue:** continue the hearing to a later date if determined that additional information or analysis is needed to make a decision, or if additional testimony is warranted.

ASSEMBLY ACTION REQUIRED:

Assembly action is required for this text amendment. The Commission's recommendation will be forwarded to the assembly for final action.

STANDARD OF REVIEW:

This is a legislative decision and requires five (5) affirmative votes for approval.

DATE: June 15, 2020

TO: Planning Commission

FROM: CBJ Community Development Department

BY: Teri Camery, Senior Planner, CFM

PROPOSAL: A text amendment to revise and update Title 49 to adopt flood management regulations, maps, and a flood insurance study to meet Federal Emergency Management Agency requirements

SUMMARY OF KEY CONSIDERATIONS:

- Adoption of the Revised September 18, 2020 FEMA Flood Insurance Rate Map and Flood Insurance Study
- Adoption of flood management revisions to CBJ Code 49.70.400; 49.70.410; 49.80.120; and 49.85.100, as required by FEMA

GENERAL INFORMATION

Applicant	City and Borough of Juneau
Initiated By	Community Development Department
Property Affected	Borough-wide

LAND USE CODE AMENDED

49.70.400 and 49.70.410	Flood Hazard Areas
49.80.120	Definitions
49.85.100	Fee Schedule

WORK SESSION DATES

Public Meetings	April 4, 2018 August 28, 2019
Assembly Lands Committee	June 1, 2020

49.10.170(d) Planning Commission Duties. *The commission shall make recommendations to the assembly on all proposed amendments to this title, zonings and rezoning, indicating compliance with the provisions of this title and the comprehensive plan.*

ATTACHMENTS

Item	Description
Attachment A	CBJ Assembly Lands Committee memo, May 27, 2020

INTRODUCTION

As a result of new analysis and public comments from the 2018 and 2019 public process, the Federal Emergency Management Agency (FEMA) has released the final pending Flood Insurance Rate Map and Flood Insurance Study. The map link on the CDD website (<https://beta.juneau.org/community-development/special-projects/flood-map-revisions>) provides a comparison between the currently adopted 2013 Flood Insurance Rate Map and the final pending map. The pending map and study are also available through the FEMA Map Service Center at <https://msc.fema.gov/portal/home>. At this link, click “search all products,” enter state, enter Juneau Borough under “county,” enter City and Borough of Juneau for community, and click on “pending product.”

To participate in FEMA’s National Flood Insurance Program (NFIP), CBJ must adopt and enforce specific floodplain management regulations, FEMA’s Flood Insurance Study for the borough, and FEMA’s Flood Insurance Rate Map that delineates different flood zones and base flood elevations. The CBJ land use code Flood Hazard Areas floodplain management text is dictated by FEMA requirements.

Federal requirements establish that the final pending map, study, and regulations will be effective on September 18, 2020, following CBJ Assembly adoption. If CBJ does not adopt these items by ordinance prior to September 18, 2020, CBJ will be suspended from the NFIP. If CBJ does not participate in the NFIP, borough property owners within Special Hazard Areas cannot obtain flood insurance or a federally-backed mortgage within Special Flood Hazard Areas, and the borough will not be eligible for federal disaster relief.

CBJ and FEMA estimate that the improved maps will remove approximately 191 parcels from the Special Flood Hazard Area. These property owners will no longer be required to have flood insurance with a federally-backed mortgage. Approximately 45 parcels will be added to the Special Flood Hazard Area. These owners will be required to obtain flood insurance with a federally-backed mortgage.

BACKGROUND

Mapping Process and Timeline. CBJ joined the NFIP in 1981. The last completed map revision was in 2013. These maps are currently in effect. Issues were identified in the 2013 revision that could not be addressed within federally mandated timelines. Therefore, a second analysis began shortly after to utilize new contour data and other information to develop more accurate flood maps. Highlights of the current map revision include:

- Preliminary Map Release. August 25, 2017.
- Public Meeting and FEMA/CBJ Workshop. April 4, 2018.
 - Approximately 150 people attended.
- First Appeal and Comment Period. April 11 – July 9, 2018.

- In conjunction with the public meeting and appeal/comment period, CDD sent a postcard mailing to all properties within or adjacent to a flood zone with a website link, map, and comment information.
- Revised Preliminary Map Release. November 30, 2018.
 - The first appeal/comment period revealed a minor but systematic error in the maps along a stretch of coastline that met FEMA's threshold for a second revision and map release.
 - FEMA and CBJ held a second public meeting on August 28, 2019 with a second postcard mailing to all flood properties regarding the changes and the second public/comment appeal period. This meeting addressed both the borough-wide flood map revision and the separate Tee Harbor map revision.
- Second Appeal and Comment Period. July 24 – October 22, 2019.
- Letter of Final Determination. May 18, 2020.
 - This is FEMA's final release of the maps and Flood Insurance Study (the report with supporting data), which starts the federal mandatory timeline of six months for adoption by CBJ.
 - The final map revision removes approximately 191 parcels from the Special Flood Hazard Area, which eliminates the flood insurance requirement. Approximately 45 parcels will be added to the Special Flood Hazard Area, triggering the flood insurance requirement.
- Maps and Flood Insurance Study Become Effective. September 18, 2020.

Tee Harbor Map Revision. The Tee Harbor area was not within the scope of the new study and map revision. However, in the first appeal/comment period on the draft maps that began in April 2018, Tee Harbor residents sent comments to CBJ and FEMA regarding the extreme inaccuracy of the maps in that area and the high flood insurance costs associated with the error. FEMA agreed, and launched a separate study and timeline specifically for Tee Harbor through the Letter of Map Revision (LOMR) process. Revised Tee Harbor maps were released for public appeal/comment from January 24 – April 23, 2020. CDD sent another postcard mailing, and updated the website. No comments were received. The Tee Harbor LOMR had a separate public process from the borough-wide maps dictated by federal regulations, and LOMRs do not require approval by local ordinance. The Tee Harbor LOMR is final and effective as of May 26, 2020. The Tee Harbor map is available through the FEMA Map Service Center at <https://msc.fema.gov/portal/home>. At this link, click "search all products," enter state, enter Juneau Borough under "county," enter City and Borough of Juneau for community, click on "effective products," click on "LOMC," then "LOMR," then Product ID 19-10-1198P-020009.

TEXT AMENDMENT SUMMARY

The proposed text amendment adopts FEMA's revised Flood Insurance Rate Map and Flood Insurance Study, released on March 18, 2020 and effective on September 18, 2020. In addition, the text amendment would update Title 49 land use code, Sections 49.70.400 and 410, Flood Hazard Areas; Section 49.80.120, Definitions; and Section 49.85.100, Fee Schedule to conform with FEMA requirements. These changes would be effective on September 18, 2020. Highlights of the text amendment to the land use code include the following:

- Adds a disclaimer of liability language to explain that floods may exceed the heights and areas noted on the Flood Insurance Rate Map, as required by FEMA.
- Establishes required record-keeping duties and responsibilities of the Floodplain Administrator (CDD), as required by FEMA.

- Establishes a Floodplain Development Permit to ensure that CBJ regulates development within Special Flood Hazard Areas, as required by FEMA.
 - o The Floodplain Development Permit distinguishes between minor and major development.
 - o Minor development, defined as development that does not require a building permit, would have a fee of \$45.00. Major development, defined as development that does require a building permit, would have a fee of \$100.00.
 - o The proposed fee for a minor development is nominal, and partially covers minimum administrative and staff review costs for minor reviews. The proposed fee for a major development covers approximately 25 percent of estimated administrative and staff review costs.
- Incorporates FEMA definition language into the land use code to ensure that CBJ uses FEMA regulatory definitions in flood reviews.
- Includes other minor revisions to clarify existing review processes required by FEMA, such as the requirement to notify FEMA when a watercourse is moved. These revisions are for clarification and compliance only, and do not add new regulatory requirements.

PUBLIC NOTICE

As noted in the Background Section above, CBJ and FEMA held two public meetings in 2018 and 2019 regarding these revisions. Approximately 150 people attended the 2018 meeting, while 25 attended in 2019. Each public meeting was preceded by public service announcements, news articles, Facebook posts, CDD website updates, and postcard mailings to all property owners within or adjacent to Special Flood Hazard Areas. The postcard mailings included special attention to property owners who were likely to be added to the Special Flood Hazard Area for the first time.

The FEMA review process included two appeal and comment periods, which were emphasized in the public meetings, mailings, and on the CBJ website. No appeals or comments were received during the second period. In addition to the public meetings, CDD staff made a presentation to the Juneau Realtors Association in 2018, and FEMA staff held a workshop with local surveyors in 2019. CDD has maintained the website link with information on the update and a sliding map that allows property owners to compare the existing flood map with the proposed flood map. CDD will send a final mailing to property owners notifying them of the map adoption.

No additional public comments have been received at this writing.

COMPLIANCE WITH TITLE 49 Land Use Code

49.05.100 - Purpose and intent. The purpose and Intent of Title 49 Land Use Code is:

- (1) To achieve the goals and objectives, and implement the policies, of the Juneau comprehensive plan, and coastal management program;*
- (2) To ensure that future growth and development in the City and Borough is in accord with the values of its residents;*
- (3) To identify and secure, for present and future residents, the beneficial impacts of growth while minimizing the negative impacts;*
- (4) To ensure that future growth is of the appropriate type, design and location, and is served by a proper range of public services and facilities such as water, sewage, and electrical distribution systems, transportation, schools, parks and other public requirements, and in general to promote public health, safety and general welfare;*
- (5) To provide adequate open space for light and air; and*
- (6) To recognize the economic value of land and encourage its proper and beneficial use.*

TITLE 49: The proposed text amendment complies with CBJ Title 49 Land Use Code. Additionally, the proposed amendment will not create any inconsistencies in Title 49.

Code Reference	Item	Summary
49.05.100	Purpose Statement	The proposed text amendment complies with the purpose and intent of Title 49.

COMPLIANCE WITH ADOPTED PLANS

2013 COMPREHENSIVE PLAN VISION: *The City and Borough of Juneau is a vibrant State Capital that values the diversity and quality of its natural and built environments, creates a safe and satisfying quality of life for its diverse population, provides quality education and employment for its workers, encourages resident participation in community decisions and provides an environment to foster state-wide leadership.*

2013 COMPREHENSIVE PLAN The proposed text amendment is in compliance with the 2013 Comprehensive Plan.

Chapter	Page No.	Item	Summary
7	99	Policy 7.18	<i>Policy 7.18. TO PROHIBIT RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT IN FLOODWAYS, TO REGULATE DEVELOPMENT IN FLOODPLAINS, AND TO MAINTAIN A PROGRAM OF EDUCATION, ASSISTANCE, AND INFORMATION IN ORDER TO MAINTAIN ELIGIBILITY FOR THE NATIONAL FLOOD INSURANCE</i>

2013 COMPREHENSIVE PLAN The proposed text amendment is in compliance with the 2013 Comprehensive Plan.			
			<i>PROGRAM FOR THE BENEFIT OF LOCAL PROPERTY OWNERS AND THE LENDING INDUSTRY.</i> The proposed text amendment supports Policy 7.18 by adopting a new Flood Insurance Rate Map, a new Flood Insurance Study, and an updated flood management regulations to meet the Federal Emergency Management Agency requirements.

2016 HOUSING ACTION PLAN The proposed text amendment complies with the 2016 Housing Action Plan.			
Chapter	Page No.	Item	Summary
Part 2, Solutions	31	Recommendations	The proposed text amendment is in general compliance with Housing Action Plan recommendations because it will allow CBJ to remain in the National Flood Insurance Program. Participation in the National Flood Insurance Program allows purchase of homes within Special Flood Hazard Areas with a federally-backed mortgage. This is because federally-backed mortgages require the purchase of flood insurance within Special Flood Hazard Areas, and federal flood insurance is only available to communities who participate in the National Flood Insurance Program.

FINDINGS

1. Does the proposed text amendment comply with the Comprehensive Plan and other adopted plans?

Analysis: The proposed amendment balances the Comprehensive Plan and 2016 Housing Action Plan policies, and is generally consistent with the overall vision.

Finding: Yes. The proposed text amendment conforms to the 2013 Comprehensive Plan and the 2016 Housing Action Plan.

2. Does the proposed text amendment comply with Title 49 – Land Use Code?

Analysis: The proposed text amendment was drafted with the purpose and intent of Title 49 taken into account. If approved as drafted, it will be consistent with the above purposes, especially sections 49.70.400 and 49.70.410, Flood Hazard Areas.

Finding: Yes. The proposed text amendment conforms to the purpose and intent of Title 49 land use code. Additionally, the proposed text amendment does not create any inconsistencies within the code.

RECOMMENDATION

Staff recommends the Planning Commission adopt the Director's analysis and findings and make a recommendation to the Assembly to APPROVE the proposed text amendment to revise and update Title 49 to adopt flood management regulations, maps, and a flood insurance study to meet Federal Emergency Management Agency requirements.



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MEMO

TO: Rob Edwardson, Chair Lands Committee and
Lands Committee Members

FROM: Jill Maclean, Director, AICP *Jill Maclean*

DATE: May 27, 2020

RE: FEMA Flood Map Adoption Process

This memo provides a brief background of the Federal Emergency Management Agency (FEMA) process regarding the CBJ borough-wide Flood Map Revision that is currently underway.

FEMA and CBJ Authority. To participate in FEMA's National Flood Insurance Program (NFIP), CBJ must adopt and enforce a floodplain management ordinance utilizing the floodplain maps developed by FEMA that delineate flood zones and base flood elevations. Participation in the program allows property owners to obtain flood insurance, and makes CBJ eligible to receive disaster funding. Flood insurance is necessary for all properties located in Special Flood Hazard Areas seeking to secure federally-backed mortgages.

Mapping Process and Timeline. CBJ first joined the NFIP in 1981. The last completed map revision was 2013. These maps are currently in effect. Issues were identified in the 2013 revision that could not be addressed within federally mandated timelines. Therefore, a second analysis began shortly after in order to utilize new contour data and other information to develop more accurate flood maps—this is the process currently underway. Highlights of the current map revision include:

- Preliminary Map Release. August 25, 2017
- Public Meeting and FEMA/CBJ Workshop. April 4, 2018
 - Approximately 150 people attended.
- First Appeal and Comment Period. April 11-July 9, 2018
 - In conjunction with the public meeting and appeal/comment period, CDD sent a postcard mailing to all properties within or adjacent to a flood zone with a website link, map, and comment information.
- Revised Preliminary Map Release. November 30, 2018
 - The first appeal/comment period revealed a minor, but systematic, error in the maps along a stretch of CBJ coastline that met FEMA's threshold for a second revision and map release.

- FEMA and CBJ held a second public meeting on August 28, 2019 with a second postcard mailing to all flood properties regarding the changes and the second public/comment appeal period. This meeting addressed both the borough-wide flood map revision and the separate Tee Harbor map revision.
- Second Appeal and Comment Period. July 24-October 22, 2019
- Letter of Final Determination. May 18, 2020
 - This is FEMA's final release of the maps and Flood Insurance Study (the report with supporting data), which starts the federal mandatory timeline of six months for CBJ to adopt the maps and ordinance.
 - The final map revision **removes approximately 191 parcels** from the Special Flood Hazard Area, which eliminates the flood insurance requirement. **Approximately 45 parcels** will be added to the Special Flood Hazard Area.
- ***Maps and Flood Insurance Study Become Effective—if adopted by CBJ. September 18, 2020***
 - ❖ Regardless of the speed at which CBJ moves to adopt the maps and ordinance, the maps go into effect on September 18, 2020 per FEMA—this date is not under CBJ's control.

Tee Harbor Map Revision. The Tee Harbor area was not within the scope of the new study and map revision. However, in the first appeal/comment period on the first draft maps that began in April 2018, Tee Harbor residents sent comments to CBJ and FEMA regarding the extreme inaccuracy of the maps in that area and the high flood insurance costs associated with the error. FEMA agreed, and launched a separate study and timeline specifically for Tee Harbor through the Letter of Map Revision (LOMR) process. Revised Tee Harbor maps were released for public appeal/comment from January 24 through April 23, 2020. CDD sent another postcard mailing, and updated the website. No comments were received. The Tee Harbor LOMR has a separate public process from the borough-wide maps, dictated by federal regulations, and LOMR do not require approval by local ordinance.

- ❖ The Tee Harbor Map Revision is effective as of May 26, 2020.

Next Steps. CDD is drafting an updated floodplain management ordinance, which must be revised to meet minimum federal requirements. The ordinance, maps, and study are tentatively scheduled for a public hearing before the Planning Commission on June 23, 2020. The Assembly must adopt the revised ordinance, with the revised maps and Flood Insurance Study, by September 18, 2020.

Ordinance 2021-06 An Ordinance Amending the Lands Use Code relating to Floodplain Regulations.

For private property owners to participate in the National Flood Insurance Program, the CBJ must adopt and enforce a floodplain management ordinance, which includes updated floodplain maps. The CBJ recently adopted the updated floodplain maps with Ordinance 2020-42. This ordinance would update the Title 49 provisions to be consistent with the floodplain maps and policies of the National Flood Insurance Program.

The Community Development Department conducted extensive public review for the flood map revision and associated Title 49 language since 2018. The Planning Commission has received updates and reviewed this matter multiple times.

Presented by: Planning Commission
Presented: 04/05/2021
Drafted by: R. Palmer III

ORDINANCE OF THE CITY AND BOROUGH OF JUNEAU, ALASKA

Serial No. 2021-06

An Ordinance Amending the Land Use Code Relating to Floodplain Regulations.

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. CBJ 49.70.400 Floodplain, is amended to read:
49.70.400 Floodplain.

...

(b) *Interpretation.*

(1) In the interpretation and application of this article, all provisions ~~shall be~~ are considered ~~as~~ minimum requirements and ~~shall be~~ are liberally construed in favor of the governing body.

(2) This article is not intended to repeal, abrogate, or impair any existing easements, covenants or deed restrictions. ~~However, w~~Where the provisions of this article and another ordinance, ~~easement, covenant or deed restriction~~ conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(3) This article shall apply to all areas of ~~special flood hazard areas~~ Special Flood Hazard Areas (SFHAs) within the jurisdiction of the City and Borough of Juneau.

(4) The ~~special flood hazard areas~~ Special Flood Hazard Areas identified by the Federal Insurance Administrator (FIA) in a scientific and engineering report entitled the “Flood Insurance Study” (FIS) and the ~~flood insurance rate maps~~ Flood Insurance Rate Maps (FIRMs) dated September 18, 2020 for the City and Borough of Juneau, Alaska are adopted. The ~~flood insurance study~~ FIS and ~~flood insurance rate maps~~ FIRMs shall be on file with the Community Development Department and available to the public at 155 South Seward Street, Juneau, Alaska.

(c) Implementation.

The director is responsible for administering and implementing the provisions of this chapter and is responsible for maintaining for public use and inspection appropriate records and information relevant to implementation of this chapter. Such records and information must include:

(1) Actual elevations, in relation to Mean Lower Low Water, of the lowest floor, including basement, of all new or substantially improved structures located in the Special Flood Hazard Area (SFHA), and whether or not such structures have basements;

(2) Actual elevations, in relation to Mean Lower Low Water, of all new and substantially improved flood-proofed structures and the required flood-proofing certifications;

(3) Flood Insurance Studies (FISs);

(4) Flood Insurance Rate Maps (FIRMs);

(5) Any reports or studies on flood hazards in the community, such as written reports by the U.S. Army Corps of Engineers, U.S. Geological Survey, or private firms provided to the director; and

(6) A file of all floodplain permit applications, permits, exceptions, and supporting documentation.

(d) Enforcement. Enforcement of this chapter is per CBJ 49.10.600-660.

(e) Floodplain Development Permit Required.

A Floodplain Development Permit is required for any development or industrial uses located within a Special Flood Hazard Area, including placement of manufactured homes. The director must ~~shall~~:

(1) Review all Floodplain Development Permit applications for development in the Special Flood Hazard Area for compliance with the provisions of this chapter, and to determine if other permits ~~if other~~ may be necessary from local, state, or federal governmental agencies.

(2) Interpret the ~~exact~~ locations of the Special Flood Hazard Area boundaries of the areas of special flood hazard and regulatory floodway. If there appears to be a conflict between a mapped boundary and actual field conditions, the ~~dDirector shall~~ must determine and interpret the documents. When base flood elevation data has not been provided, the ~~dDirector~~ shall obtain, review, and reasonably utilize ~~any~~ base flood

elevation and floodway data available from any federal, state, municipal, or any other source to ~~administer~~ implement the provisions of this chapter.

(13) If the director ~~building official~~ determines that a proposed development is within a Special Flood Hazard Area, a permit fee ~~shall~~ must be collected and the following information ~~shall~~ must be provided before processing a Floodplain Development Permit:

(A) Elevation of the lowest floor, including a basement, of all structures;

(B) Elevation to which any structure has been floodproofed;

(C) Certification by an engineer or architect that the floodproofing methods for any nonresidential structure meet generally accepted floodproofing standards;

(D) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development;

(E) Description of the plan for maintenance of the altered or relocated portion of the watercourse so that the flood-carrying capacity is not diminished; and

(F) When base flood elevation data have not been provided, the director shall obtain, review and reasonably apply any base flood elevation and floodway data available from federal, state or other sources.

(ef) *Methods of reducing losses.* In order to accomplish its purpose, this article includes methods and provisions ~~for~~ to:

(1) ~~Restricting or prohibiting uses that which~~ are dangerous to health, safety, and property due to water or erosion hazards, or ~~that which~~ result in damaging increases in erosion or flood heights or velocities;

- (2) ~~Requireing~~ that uses vulnerable to floods, including facilities ~~that which~~ serve such uses, be protected against flood damage at the time of initial construction;
- (3) ~~Controlling~~ the alteration of natural floodplains, stream channels and natural protective barriers, which help accommodate or channel floodwaters;
- (4) ~~Controlling~~ filling, grading, dredging and other development ~~that which~~ may increase flood damage; and
- (5) ~~Preventing~~ or ~~regulateing~~ the construction of flood barriers ~~that which~~ will unnaturally divert floodwaters or ~~that which~~ may increase flood hazards in other areas.

(d) *General standards for flood hazard protection.* In Special Flood Hazard Areas the following standards ~~apply shall be met~~:

(1) Anchoring.

(A) Design, modify, and anchor new construction and substantial improvements to prevent flotation, collapse, or lateral movement of the structure(s). ~~All new construction and substantial improvements shall be designed, modified, and adequately anchored, to prevent flotation, collapse, or lateral movement of the structure.~~

(B) A ~~All~~ manufactured home ~~homes~~ must ~~likewise~~ be anchored to prevent flotation, collapse, or lateral movement, and ~~shall~~ be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors.

(C) An alternative method of anchoring may be used if the system is designed to withstand a wind force of 90 miles per hour or greater. Certification must be provided to the director building official that this standard ~~has been~~ is met.

(2) Construction materials and methods.

(A) ~~All Construct~~ All Construct new construction and substantial improvements ~~shall be constructed~~ with materials and utility equipment resistant to flood damage.

(B) ~~All Use methods and practices that minimize flood damage for new construction and substantial improvements. shall be constructed using methods and practices that minimize flood damage.~~

(C) Design or locate eElectrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities ~~shall be designed or located~~ so as to prevent water from entering or accumulating within the components during conditions of flooding.

(D) Require adequate drainage paths around structures on slopes to guide floodwaters away from existing and proposed structures for new construction and substantial improvements within ~~Within Zones AH and AO, all new construction and substantial improvements shall require adequate drainage paths around structures on slopes to guide floodwaters around and away from existing and proposed structures.~~

(3) Utilities.

(A) ~~All Design~~ All Design new and replacement water supply systems ~~shall be designed to~~ minimize or eliminate infiltration of floodwaters into the system.

- (B) ~~Design new~~ New and replacement sanitary sewage systems ~~shall be designed~~ to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters.
 - (C) ~~Locate on-site~~ On-site waste disposal systems ~~shall be located~~ to avoid impairment to them or contamination from them during flooding.
 - (4) Subdivision and development proposals must meet the following criteria shall:
 - (A) Be designed to minimize flood damage;
 - (B) ~~Have public utilities and facilities~~ Locate and construct utilities and facilities, such as sewer, gas, electrical, and water systems ~~located and constructed~~ to minimize flood damage;
 - (C) ~~Have~~ Provide adequate drainage ~~provided~~ to reduce exposure to flood damage; and
 - (D) Include base flood elevation data if the development consists of at least 50 lots or five acres, whichever is the lesser. If base flood elevation data is not available, the proposal must provide the data and backup information for how the base flood elevation data was generated for the proposal.
 - (5) Review of ~~building~~ Floodplain Development Permits ~~permits shall~~ must include:
 - (A) ~~The review~~ Review of the ~~flood insurance rate map~~ Flood Insurance Rate Map and Flood Insurance Study ~~flood insurance study~~ for flood zone determinations for ~~all~~ new or substantially improved structures;
 - (B) For new or substantially improved structures:

(i) Submittal of the proposed and finished lowest floor elevations in In
Zones A1-30, AE, AO, and AH, ~~the submittal of the proposed and finished~~
~~lowest floor elevations.~~

(ii) Submittal of the proposed and finished bottom elevation of the lowest
horizontal structural member of the lowest floor and its distance from the
mean lower low water mark in In Zones V1-30, and VE, ~~the submittal of the~~
~~proposed and finished bottom elevation of the lowest horizontal structural~~
~~member of the lowest floor and its distance from the mean lower low water~~
~~mark;~~ and Submittal of specific requirements for Zones V and VE as set
forth in 49.70.400(i).

(C) In Zones A and V, where elevation data are not available through the ~~flood~~
~~insurance study~~ Flood Insurance Study or from another authoritative source,
applications for Floodplain Development Permit ~~building permits~~ shall be reviewed
to ensure that proposed construction will be reasonably safe from flooding. The test
of reasonableness is a local judgment and may be based on historical data, high
water marks, photographs of past flooding, and other similar or relevant data.
Failure to elevate construction at least two feet above grade in these zones may
result in higher insurance rates.

(D) Provision of an elevation certificate to demonstrate that the lowest floor of a
structure is at or above base flood elevation. The certification must be provided on a
form approved by the National Flood Insurance Program and prepared by a
registered land surveyor or professional engineer who is licensed in the State of
Alaska and authorized to certify such information. This requirement may be waived

by the director if an approved record elevation demonstrates that the lowest floor is substantially above the base flood elevation due to natural ground level.

(6) Other permits. The applicant must certify that all other necessary permits have been obtained from any federal or state governmental agencies. ~~All Floodplain development permits shall be reviewed to determine that all necessary permits have been obtained from those federal or state governmental agencies from which prior approval is required.~~

(7) ~~Alteration of watercourses.~~ Maintain altered ~~Altered~~ or relocated portions of a Special Flood Hazard Area mapped watercourse ~~shall be maintained~~ so that the flood-carrying capacity is not diminished. ~~Any alteration of a special flood hazard area mapped watercourse shall be submitted to the flood insurance administrator.~~ The Department must notify the state coordinating agency, if any, and the Federal Emergency Management Agency prior to issuance of a Floodplain Development Permit that seeks to alter or relocate any watercourse within a Special Flood Hazard Area.

(eh) *Specific standards for flood hazards protection.* ~~In special flood hazard areas~~ Special Flood Hazard Areas where base flood elevation data ~~has been~~ is provided, the following provisions are required:

(1) New structures or substantial improvements. Fully enclosed areas below the lowest floor of new construction or substantial improvements, that are useable solely for parking of vehicles, building access, or storage in an area other than a basement, ~~shall be designed to~~ must automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be

certified by a registered professional engineer or architect licensed in the State of Alaska or must meet or exceed the following minimum criteria:

(A) Provide a ~~A~~-minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding ~~shall be provided;~~

(B) Height of the ~~The~~ bottom of all openings must ~~shall~~ be no higher than one foot above grade; and

(C) Openings may be equipped with screens, louvers, or other coverings or devices provided that ~~they permit~~ the automatic entry and exit of floodwaters is allowed.

(2) Residential construction. New construction and substantial improvement of any residential structure:

(A) Construct the lowest floor, including basement, elevated to or above the base flood elevation within ~~Within~~ Zones A1-30, AE, or AH, ~~shall have the lowest floor, including basement, elevated to, or above, the base flood elevation; or~~

(B) Construct the lowest floor elevated to the base flood depth number specified on the Flood Insurance Rate Map, or higher, or if no depth number is specified, at least two feet above the highest adjacent natural grade within ~~Within~~ Zone AO, ~~shall have the lowest floor elevated to the base flood depth number specified on the flood insurance rate map, or higher, or if no depth number is specified, at least two feet above the highest adjacent natural grade.~~

(3) Manufactured homes. ~~All new~~ New or substantially improved manufactured homes must:

- (A) Be placed at or above, the base flood elevation, within ~~Within~~ Zones A1-30, AH, or AE, and shall be elevated to, or above, the base flood elevation, and comply with subsection (g~~e~~); or
 - (B) Elevate the lowest floor to the depth number specified on the Flood Insurance Rate Map, or higher, or if no depth number is specified, at least two feet above the highest adjacent natural grade within ~~Within~~ Zone AO, ~~shall have the lowest floor elevated to the depth number specified on the flood insurance rate map, or higher, or if no depth number is specified, at least two feet above the highest adjacent natural grade;~~ and meet the provisions of subsection (e~~g~~)(1).
 - (4) Recreational vehicles. Recreational vehicles placed within any ~~special flood hazard area~~ Special Flood Hazard Area must be ~~shall~~:
 - (A) ~~Be~~ Situated on the site for fewer than 180 consecutive days;
 - (B) ~~Be fully~~ Fully licensed, operational, and approved for road ~~ready for highway~~ use; or
 - (C) Meet the requirements of subsection (h~~e~~)(3).
 - (5) Nonresidential construction. New construction or substantial improvement of any nonresidential structure must:
 - (A) Elevate the lowest floor, including basement, to or above the base flood elevation within ~~Within~~ Zones A1-30, AE, and AH, ~~shall have the lowest floor, including basement, elevated to, or above, the base flood elevation;~~
 - (B) Elevate the lowest floor to the depth number specified on the Flood Insurance Rate Map, or higher, or if no depth number is specified, at least two feet above the highest adjacent natural grade within ~~Within~~ Zone AO, ~~shall have the~~

~~lowest floor elevated to the depth number specified on the flood insurance rate map, or higher, or if no depth number is specified, at least two feet above the highest adjacent natural grade; or~~

(C) Floodproof the area below the base flood elevation within ~~Within Zones A1-30, AE, AH₁ and AO, may have the area below the base flood elevation be floodproof~~ so that:

- (i) The structure and utility and sanitary facilities are watertight with walls substantially impermeable to the passage of water;
- (ii) Structural components shall have the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(D) A flood-proofed structure ~~shall~~ must be designed by an engineer or architect licensed in the State of Alaska, certifying that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on the engineer's or architect's development or review of the structural design, specifications, and plans. ~~Such certification~~ Certification must ~~shall~~ be provided to the director ~~building official~~;

(E) Applicants proposing to floodproof nonresidential buildings must ~~shall~~ be notified at the time of Floodplain Development Permit ~~building permit~~ application that flood insurance premiums ~~shall be~~ are based on rates that are one foot below the floodproofed level.

(6) Industrial uses. Industrial uses within the Special Flood Hazard Area are subject to the following provisions:

(A) Sand and gravel operations, recreation activities, open space, and parking lots may be allowed in 100-year floodplains ~~only if they do~~ the use does not increase the flood hazard.

(B) Industrial equipment and raw materials stored in 100-year floodplains ~~shall~~ must be adequately bermed or otherwise protected.

(C) Disposal of hazardous materials in 100-year floodplains is prohibited. No new development ~~which will~~ that involves storage of hazardous materials will be permitted in the 100-year floodplain unless there is no feasible and prudent alternative and ~~unless~~ adequate safety measures are provided to prevent accidental discharge.

(D) Establishment of sanitary landfills in floodplains is prohibited.

(7) Increasing water surface elevation in ~~special flood hazard area~~ Special Flood Hazard Area mapped watercourses where floodways are not mapped. Notwithstanding any other provisions of this ~~article section~~, development in Zones A1-30, AE, and AH may increase the water surface elevation of the base flood:

(A) Up to one foot with the submittal of an analysis completed by an engineer licensed in the State of Alaska demonstrating the cumulative effects of the proposed, existing and anticipated, development to the base flood; or

(B) By more than one foot only after a conditional letter of map revision and final letter of map revision is approved by the Federal Emergency Management Agency flood insurance administrator.

(f) *Additional provisions in floodways.* ~~Floodways are areas designed to carry the waters of the base flood without increasing the water surface elevation of that flood more than one foot at any point. Floodways are shown in the flood insurance rate map.~~

(1) Residential and nonresidential ~~buildings~~ structures are prohibited in floodways, no exceptions apply. Culverts and bridges are not subject to this prohibition.

(2) Encroachments, including fill, new construction, ~~substantial improvements~~, and other development, except subdivisions, within a floodway ~~is~~ are prohibited unless an engineer licensed in the State of Alaska submits a hydrologic and hydraulic analyses to the director indicating that the encroachment would not result in any increase in flood levels during the occurrence of the base flood discharge. The hydrologic and hydraulic analyses ~~shall~~ must be performed in accordance with standard engineering practice acceptable by the Federal Emergency Management Agency.

(3) Development along a floodway cannot increase the water surface elevation uUnless a conditional letter of map revision and final letter of map revision that revises the floodway ~~is~~ are approved by the Federal Emergency Management Agency, ~~development along a floodway shall not increase the water surface elevation.~~

(g) *Additional provisions in Zones ~~V1-V30~~, VE and V.*

(1) ~~All n~~ New construction and substantial improvements in Zones ~~V1-V30~~, and ~~VE,~~ and V shall must be elevated on pilings and columns so that:

(A) The bottom of the lowest horizontal structural member of the lowest floor, excluding the pilings or columns, is elevated to or above the base flood elevation;
and

(B) The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values ~~shall~~ must each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval). Wind loading values used ~~shall~~ be are those required by applicable state statute and local code. A registered professional engineer or architect licensed in the State of Alaska must ~~shall~~ develop or review the structural design, specifications and plans for the construction and ~~shall~~ must certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of subsections ~~(g)~~(1)(A) and (B) of this section.

(C) The use of fill for structural support of buildings is prohibited.

(2) In Zones ~~V1-V30~~, VE_r and V, ~~all~~ new habitable construction ~~shall~~ must be located landward of the reach of mean high tide.

(3) In Zones ~~V1-V30~~, VE_r and V, ~~all~~ new construction and substantial improvements ~~shall~~ must have the space below the lowest floor either free of obstruction or constructed with nonsupporting breakaway walls, open wood latticework, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.

(4) Breakaway walls ~~shall~~ must have a design safe loading resistance of not less than ten pounds per square foot and no more than 20 pounds per square foot. Use of breakaway walls that ~~which~~ exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or state codes) may be permitted only if a

registered professional engineer or architect licensed in the State of Alaska certifies that the designs proposed meet the following conditions:

(A) Breakaway wall collapse ~~shall~~ must result from a water load less than that which would occur during the base flood; and

(B) The elevated portion of the building and supporting foundation system ~~shall~~ must not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination ~~shall~~ must each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval). Wind loading values used shall be those required by applicable state statute and local code.

(C) Enclosed space within breakaway walls ~~shall be~~ are limited to parking of vehicles, building access, or storage. Such space ~~shall~~ must not be used for human habitation.

(k) Warning and disclaimer of liability. The degree of flood protection required by this article is intended for minimum regulatory purposes only and is based on general scientific and engineering principles. Floods larger than expected, can and will occur. Flood heights may be increased by human or natural causes. This article does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This article shall not create liability on the part of the City and Borough, any officer or employee thereof for any flood damages that result from reliance on this article or any administrative decision made thereunder.

Section 3. Amendment of Section. CBJ 49.70.410 Exceptions, is amended to read:

49.70.410 Exceptions.

(a) The Planning Commission ~~board of adjustment~~ shall hear all applications for an exception from the provisions of this article, and ~~shall be~~ are limited to the powers granted in this article and those necessarily implied to ensure due process and to implement the policies of this article.

(b) In passing upon such application, the ~~board of adjustment~~ Planning Commission shall must consider all technical evaluations, ~~all~~ relevant factors, standards specified in other sections of this article, and:

- (1) The danger that materials may be swept onto other lands and cause injury to other persons or property;
- (2) The danger to life and property due to flooding or erosion damage;
- (3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- (4) The importance of the services provided by the proposed facility to the community;
- (5) The necessity to the facility of a waterfront location, where applicable;
- (6) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
- (7) The compatibility of the proposed use with existing and anticipated development;
- (8) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
- (9) The safety of access to the property in times of flood for ordinary and emergency vehicles;

(10) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and

(11) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

(c) Exceptions may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing subsections (b)(1)—(b)(11) of this section have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the exception increases.

(d) Upon consideration of the factors of subsection (b) of this section and the purposes of this article, the ~~board~~ Commission may deny or grant the application and may attach such conditions to the grant of an exception as it deems necessary to further the purposes of this article.

(e) Exceptions may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the state inventory of historic places, without regard to the procedures set forth in the remainder of this section.

(f) Exceptions ~~shall~~ must not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

(g) Exceptions ~~shall~~ must only be issued upon a determination that the exception is the minimum necessary, considering the flood hazard, to afford relief.

(h) Exceptions ~~shall~~ must only be issued upon:

(1) A showing of good and sufficient cause;

(2) A determination that failure to grant the exception would result in exceptional hardship to the applicant; and

(3) A determination that the granting of an exception will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances or conflict with existing local laws or ordinances.

(i) Reserved. ~~Submission requirements.~~

~~(1) If the building official determines that a proposed development lies within a special flood hazard area, a special flood hazard permit fee shall be collected and the following information shall be provided before further processing of a building permit:~~

~~(A) Elevation of the lowest floor, including a basement, of all structures;~~

~~(B) Elevation to which any structure has been floodproofed;~~

~~(C) Certification by an engineer or architect that the floodproofing methods for any nonresidential structure meet generally accepted floodproofing standards;~~

~~(D) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development;~~

~~(E) Description of the plan for maintenance of the altered or relocated portion of the watercourse so that the flood-carrying capacity is not diminished; and~~

~~(F) When base flood elevation data have not been provided, the building official shall obtain, review and reasonably apply any base flood elevation and floodway data available from federal, state or other sources.~~

~~(j) Warning and disclaimer of liability. The degree of flood protection required by this article is intended for minimum regulatory purposes only and is based on general scientific and engineering principles. Floods larger than expected, can and will occur. Flood heights may be~~

~~increased by manmade or natural causes. This article does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This article shall not create liability on the part of the City and Borough, any officer or employee thereof, or the Federal Insurance Administration for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder.~~

Section 4. Amendment of Section. CBJ 49.80.120 Definitions, is amended to **delete** the following definitions:

~~*Alaska Coastal Management Program* and *ACMP* mean the state coastal management program which was developed as provided in AS 46.40, 6 AAC 80, and 6 AAC 85, and approved by the Secretary of the United States Department of Commerce under authority of Section 305 of the Coastal Zone Management Act of 1972, as amended, 16 USC 1454.~~

~~*Base flood depth* means the depth shown on the flood insurance rate map for Zone AO that indicates the depth of water above highest adjacent grade resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year.~~

~~*Flood hazard factor (FHF)* means the average weighted difference between the ten year and 100 year floodwater multiplied by ten.~~

Section 5. Amendment of Section. CBJ 49.80.120 Definitions, is amended to include the following **new definitions** in alphabetical order:

Area of shallow flooding, for the purposes of Chapter 49.70.400, Flood Hazard Areas, means a designated Zone AO, AH, AR/AO or AR/AH (or VO) on a community's Flood Insurance Rate Map (FIRM) with a one percent or greater annual chance of flooding to an average depth

of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Basement, for the purposes of Chapter 49.70. Article IV, Flood Hazard Areas, means any area of a building, including any sunken room or sunken portion of a room, having its floor below ground level on all sides.

Floodplain Development Permit means a permit issued by the Department to allow development that conforms with the standards of Chapter 49.70. Article IV, Flood Hazard Areas.

Lowest floor elevation, for the purposes of Chapter 49.70.400, Flood Hazard Areas, means the measured distance of a building's lowest floor above Mean Lower Low Water specified on the Flood Insurance Rate Map (FIRM) for the City and Borough of Juneau.

New construction, for the purposes of Chapter 49.70, Article IV, Flood Hazard Areas and for flood insurance rates, means structures for which the “start of construction” commenced on or after the effective date of an initial Flood Insurance Rate Map (FIRM) or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, “new construction” means structures for which the “start of construction” commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

Section 6. Amendment of Section. CBJ 49.80.120 Definitions, is **amended** as follows:

Building means any structure having a roof supported by columns or walls and intended for the shelter, housing or enclosure of persons, animals, processes, equipment, goods or materials. For the purposes of Chapter 49.70, Article IV, *building* means a structure with two or more outside rigid walls and a fully secured roof, that is affixed to a permanent site; or a manufactured home; or a travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws.

Development means any of the following:

...

(11) For the purposes of Chapter 49.70, Article IV, Flood Hazard Areas, means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

Fill means a deposit of material placed by artificial means. Berms are classified as fill.

Finished elevation means the proposed elevation of the land surface of a site after completion of all site preparation work.

Floodplain or flood-prone area, means any land area susceptible to being inundated by water from any source. ~~means the channel and the relatively flat area adjoining the channel of a natural stream or river which has been or may be covered by floodwater.~~

Lowest floor, for the purposes of Chapter 49.70, Article IV, Flood Hazard Areas, means the lowest floor of the lowest enclosed area (including a basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area

other than a basement area, is not considered a building's lowest floor provided that it does not violate subsection 49.70.400(eh)(1).

Mobile home means a detached residential dwelling unit designed for transportation, after fabrication, on streets or highways on its own wheels or on a truck or trailer, and arriving at the site where it is to be occupied as a dwelling complete and ready for occupancy except for minor and incidental unpacking and assembly operations, location on jacks or other temporary or permanent foundations, connections to utilities, and the like, and includes recreational vehicles used outside of a recreational vehicle park as living quarters, other than as temporary living quarters for recreational, camping, or travel purposes. For the purpose of Chapter 49.70. Article IV, Flood Hazard Areas, a *mobile home* is the same as a *manufactured home*.

Ordinary high water mark means ~~a line or mark impressed on the bank or shore of the non-tidal portion of a river, lake or stream; caused by the long-term action of non-tidal water, and indicated by erosion, shelving, changes in soil characteristics, absence of terrestrial vegetation, presence of aquatic vegetation, or other physical characteristics.;~~

(1) In the non-tidal portion of a river, lake, or stream: the portion of the bed(s) and banks up to which the presence and action of the non-tidal water is so common and usual, and so long continued in all ordinary years, as to leave a natural line or “mark” impressed on the bank or shore and indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics;

(2) In a braided river, lake, or stream; the area delimited by the natural line or “mark”, as defined in part 1 above, impressed on the bank or shore of the outside margin of the most distant channels; or

(3) In a tidally influenced portion of a river, lake, or stream, setbacks shall be taken from the mean high water elevation or from the ordinary high water mark, whichever offers greater protection to the water body.

Recreational vehicle means a vehicle primarily designed and intended as temporary living quarters for recreation, camping, or travel uses, which either has its own motive power or is mounted on or drawn by another vehicle for moving from one location to another without a change in structure or design, and identified or required to be identified by a license number, registration number, serial number, or motor number for operation on state highways. For the purposes of Chapter 49.70. Article IV, Flood Hazard Areas, *recreational vehicle* means a vehicle which is: (a) built on a single chassis; (b) 400 square feet or less when measured at the largest horizontal projection; (c) designed to be self-propelled or permanently towable by a light duty truck; and (d) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Special flood hazard area (SFHA) means the land in the floodplain subject to a one percent or greater chance of flooding in any given year. It is shown on the Flood Insurance Rate Map (FIRM) as Zone A, AO, AH, A1-30, AE, A99, AR (V, VO, V1-30, VE). “Special Flood Hazard Area” is synonymous in meaning with the phrase “area of special flood hazard”. ~~means an area having special flood, mud flow, or flood-related erosion hazards, and shown on a flood hazard boundary map or flood insurance rate map as Zones A, AO, A1-A30, AE, A99, AH, AR, AR/A, AR/AE, AR/AH, AR/AO, AR/A1-A30, V1-V30, VE, or V. For the purpose of determining community rating system premium discounts, all AR and A99 zones are treated as non-SFHAs.~~

Start of construction, for the purposes of Chapter 49.70.400, Flood Hazard Areas, includes substantial improvement, and means the date the building permit was issued,

1
2 provided the actual start of construction, repair, reconstruction, rehabilitation, addition
3 placement, or other improvement was within 180 days of the permit date. The actual start
4 means either the first placement of permanent construction of a structure on a site, such as the
5 pouring of slab or footings, the installation of piles, the construction of columns, or any work
6 beyond the stage of excavation; or the placement of a manufactured home on a foundation.
7 Permanent construction does not include land preparation, such as clearing, grading and filling;
8 nor does it include the installation of streets and/or walkways; nor does it include excavation for
9 a basement, footings, piers, or foundations or the erection of temporary forms; nor does it
10 include the installation on the property of accessory buildings, such as garages or sheds not
11 occupied as dwelling units or not part of the main structure. For a substantial improvement,
12 the actual start of construction means the first alteration of any wall, ceiling, floor, or other
13 structural part of a building, whether or not that alteration affects the external dimensions of
14 the building. ~~means for other than new construction or substantial improvements, under the~~
15 ~~Coastal Barrier Resources Act, this is the date the building permit was issued, provided that~~
16 ~~the actual start of construction, repair, rehabilitation, addition, placement, or other~~
17 ~~improvement was within 180 days of the permit date. The actual start means either the first~~
18 ~~placement of permanent construction of a building on site, such as the pouring of a slab or~~
19 ~~footing, the installation of piles, the construction of columns, or any work beyond the stage of~~
20 ~~excavation; or the placement of a manufactured (mobile) home on a foundation. For substantial~~
21 ~~improvement, actual start of construction means the first alteration of any wall, ceiling, floor, or~~
22 ~~other structural part of a building, whether or not that alteration affects the external~~
23 ~~dimensions of the building.~~
24
25

Substantial damage, for the purposes of Chapter 49.70.400, Flood Hazard Areas, means damage of any origin whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. ~~means the damage of any origin sustained by a building whereby the cost of restoring the building to its before damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred.~~

Substantial improvement, for the purposes of Chapter 49.70.400, Flood Hazard Areas, means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the “start of construction” of the improvement. This term includes structures which have incurred “substantial damage”, regardless of the actual repair work performed. This term does not include either:

1. Any project or improvement of a building to correct existing violations of a state or local health, sanitary, or safety code specifications that have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or
2. Any alteration of a “historic structure”, provided that the alteration will not preclude the structure’s continued designation as a “historic structure”.

~~means any reconstruction, rehabilitation, addition, or other improvement of a building, the cost of which equals or exceeds 50 percent of the market value of the building before the “start of construction” of the improvement. Substantial improvement includes buildings that have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either any project for improvement of a building to correct existing~~

~~state or local code violations or any alteration to a "historic building," provided that the alteration will not preclude the building's continued designation as a "historic building." These violations must have been previously cited by the local code official prior to the damage or improvements.~~

Section 7. Amendment of Section. CBJ 49.85.100 is amended to read:

49.85.100 Generally.

Processing fees are established for each development, platting and other land use action in accordance with the following schedule:

...

(8) Special use or area.

...

(H) Floodplain Development Permit

(i) Minor development, no building permit required. \$45.00;

(ii) Major development, building permit required. \$100.00;

(iii) Exception, \$400.00.

...

Section 8. Effective Date. This ordinance shall be effective 30 days after its adoption.

Adopted this _____ day of _____, 2021.

Beth A. Weldon, Mayor

Attest:

Elizabeth J. McEwen, Municipal Clerk

TO: Maria Gladziszewski, Chair of the Assembly Lands Housing and Economic Development Committee

FROM: Tom Mattice- Emergency Programs Manager

SUBJECT: 4.7.21 Urban Avalanche Update

DATE: April 8, 2021

Fall 2006- CBJ started pilot program with SE Alaska Avalanche Center.

April 18, 2008- Snettisham avalanche destroys power lines.

Spring 2008- first evacuation requested of avalanche zones by SE Alaska Avalanche Center (Bill Glude).

November 2008- Tom Mattice hired by CBJ as Avalanche Forecaster.

Since 2008- CBJ produces a daily Advisory from when snow is deep enough to the end of winter (as late as May 9, two seasons).

Looking for mitigation options the CBJ hired the Swiss Institute for snow and avalanche research to perform a mitigation study. The study concluded with a series of 8 recommendations for CBJ:

1. The avalanche problem is very serious in the runout zone of Behrends Avenue avalanche path and White Subdivision avalanche path. According to current standards the risk is far beyond an acceptable level, especially in the Behrends Avenue avalanche path (e.g. in Switzerland the individual risk of death for involuntarily risks taken by a member of the public should be less than 1×10^{-5} according to PLANAT, 2009). We think that the unacceptable risk to the residents in the hazard zones can only be managed in the short term if the City and Borough of Juneau would order evacuations and close endangered areas during periods of high avalanche danger. Because the buildings in the hazard zones have no structural reinforcement people inside these buildings are not safe. An evacuation concept should be elaborated consisting of at least two hazard levels: a. Hazard level 1: evacuation and closure of the severe hazard zone b. Hazard level 2: evacuation and closure of the severe and special engineering zone, as well as closure of Glacier Highway and Egan Drive.

Establishing a regular avalanche hazard evaluation and forecasting service in the community during the winter months is recommended and is a very good starting point to develop an evacuation concept. Moreover, educating the public and increasing their awareness about avalanches would be invaluable. While this will improve the situation, we do not think that these measures are sufficient with regard to the more serious avalanche problems. The City and Borough of Juneau should also order the evacuation of people out of endangered homes.

(CBJ has maintained a standard daily hazard evaluation for the avalanche zones since 2008. Forced evacuations are illegal in Alaska and yet CBJ has recommended area specific evacuations in the past, to include walking and knocking on all the residents' doors for personal notifications.)

*2. The reduction of the avalanche risk in the **Behrends Avenue Subdivision** with structural protection measures is prohibitively expensive and therefore not recommended. Further-more, the artificial release of avalanches is not advisable mainly because of the danger to people, property and homes. We think that the buyout of endangered homes in the avalanche paths by the government is the only way to effectively reduce the avalanche risk on the long-term. We propose to start the buyout*

of the most exposed homes in the severe hazard zone (see Appendix 5). The buyout of homes would ensure a permanent solution to the avalanche problem.

(CBJ has researched home buyouts through federal grants. Most of the grants have cost shares for the local government. The primary mitigation grant went away. Recently a new program came out that does not require a cost match. These grants typically only have a few dollars in them so it is best to attempt buyouts one property at a time. CBJ is currently researching this option for the most avalanche prone home in the CBJ the Tow residence above Wickersham Ave in the White Subdivision. If this pilot project is successful CBJ should consider more as funding and time become available.)

*3. The **White Subdivision** could be protected with snow supporting structures. We recommend performing further investigations (e.g. snow depth measurements, snow distribution and geotechnical investigation) to better assess the feasibility of this option. We cannot recommend performing artificial release of avalanches by explosives in the White Subdivision avalanche path. Given the high risk of mudflows, a combined catching dam could be planned. The minimal height should be 10 m so that small wet snow avalanches can be stopped. We propose to plan the buyout of homes only if structural mitigations measures turn out to be not feasible.*

(A small portable weather station was built by CBJ and placed just above the White Subdivision avalanche zone to monitor winter weather conditions and measure annual snowfall. A landslide and avalanche study is currently underway that may help us better understand the geotechnical state of this area. To reduce costs of catching dam and to allow more room for an effective build CBJ is looking into the possible purchase of the Tow residence here through federal grants.)

*4. We think that the **extent of the hazard zones in the Behrends Avenue subdivision** is too small on the hazard map of 1992 in the area north-west of Ross Way. The extent of the hazard zones on the map of 1972 seems to be more appropriate. We recommend to study the hazard situation in this area in more detail and to make dendrochronological investigations of the forest stand. Based on our assessment the Juneau Douglas High School is not endangered by a 300-year avalanche. We suppose that only the wind blast of an extreme powder snow avalanche might influence the area of the school. However, we do not expect structural damage to the buildings.*

(This area has also been questioned in other avalanche reports. CBJ in partnership with UAS, DGGs, and University of Montana have since completed new dendrochronological investigations in this area. We have also received federal funding for new avalanche/landslide studies and are on final review of new avalanche zone maps that will hopefully answer these questions.)

*5. The **extent of the hazard zones in the White Subdivision** seems to be mostly acceptable. We recommend an extension of the severe hazard zone down slope up to the Egan Drive.*

(This detail will be clarified in the new avalanche studies currently in final draft.)

6. The construction of new buildings should be absolutely forbidden in the severe hazard zone. If new buildings are built in the special engineering zone the building standards should include structural reinforcements as mandatory which in addition should be enforced and controlled by the City and Borough of Juneau. Most of the existing buildings in the special engineering zone do not seem to have any structural reinforcement.

(To better understand national and international best practices, the new study underway will not only give us separate landslide and avalanche zone maps but also has a phase that will provide for new zoning recommendations to be developed around these hazard zones.)

7. We recommend installing an additional automatic weather station at the elevation of the starting zones on Mt. Juneau. Such a station would significantly improve the data available for assessing the avalanche danger. However, due to the accumulation of rime during winter storms the functioning of such a station might be greatly reduced. This should be considered in the design of the station.

(This has been done as mentioned above through a weather station located at 2600' near the White avalanche path to save money and accomplish both tasks.)

8. A large avalanche in the White or Behrends Avenue avalanche path can block Glacier Highway and Egan Drive and sweep cars off the highways. Such large avalanches would hinder emergency response and possibly block road access to the hospital and the Airport area. A preventive closure of the highways might also be required due to high avalanche hazard. A second Gastineau Channel crossing (e.g. a bridge between Douglas Island and the Airport area) would allow permanent road access from Downtown to the hospital and the Airport.

(This will long be important to CBJ until we find a way to build it)

As mentioned above to accomplish many of the recommendations Emergency Programs and CDD applied for Federal funds to do a 3 phase avalanche/landslide study for the borough. Funding was granted for phase 1 and CDD is managing the project.

CDD has received the second draft landslide/avalanche analysis and maps from the contractor for downtown Juneau. This draft is under internal review and not yet ready for public release. After CDD has completed internal review, we will schedule neighborhood, Planning Commission, and Assembly meetings for review of the analysis and maps. We anticipate that these meetings will take place in the months of May-July.

The analysis and maps do not include proposed hazard regulations and policies. Regulations and policies will be developed through a different contract (also grant funded), and proposed to the public, Planning Commission, and Assembly at a later date.

In addition, CDD is pursuing funding for a second study, in cooperation with AELP, for the Salmon Creek/Blackerby Ridge area which had significant damage in the December 2020 storm. This study area is for landslide only, since there are no known avalanche hazards. CDD is taking a phased approach with this study due to limited funding options for the full project.

In early April we received a grant from USGS for new high-quality LiDAR for this project area. Next we will pursue funding for orthoimagery, and then the final landslide assessment.

In conclusion 2021 was the second biggest snow season at upper elevations in Juneau history which led to evacuation requests. Will we see more this season? Perhaps. CBJ Emergency Programs will continue to invest the time necessary to maintain the active avalanche education and mitigation program for the community and make evacuation recommendations when conditions are extreme.