

**COOPERATIVE AGREEMENT**  
**BETWEEN**  
**THE UNITED STATES OF AMERICA**  
**And**  
**City & Borough of Juneau**  
**FOR**  
**ADVANCE MEASURE ASSISTANCE**

THIS AGREEMENT, entered into this XX Day of October 2024, by and between THE DEPARTMENT OF THE ARMY (hereinafter referred to as the “Government”) represented by the District Engineer, Alaska District, US Army Corps of Engineers, and City & Borough of Juneau, Alaska (hereinafter referred to as the “Public Sponsor”), representative, Katie Koester, City Manager, City & Borough of Juneau, Alaska.

**WITNESSETH THAT:**

**WHEREAS**, 33 U.S.C. section 701n authorizes the Chief of Engineers to provide Advance Measures.

**WHEREAS**, the Governor of Alaska has requested, in writing, assistance under 33 U.S.C. section 701n and qualifies for such assistance in accordance with the established policies of the U.S. Army Corps of Engineers; and,

**WHEREAS**, the Public Sponsor hereby represents that it has the authority and legal capability to furnish the non-Federal cooperation hereinafter set forth and is willing to participate in accordance with the terms of this agreement.

**NOW, THEREFORE**, the parties agree as follows:

1. The Government will perform the work described in its scope of work, which is part of this agreement.
2. The Public Sponsor will:
  - a. Provide without cost to the Government all lands, easements, rights-of-ways, relocations, and borrow and dredged or excavated material disposal areas necessary for the work.

- b. Hold and save the Government free from damages arising from construction, operation, maintenance, repair, replacement, and rehabilitation of the work, except damages to the fault or negligence of the Government or its contractors.
- c. Operate, maintain, repair, replace and rehabilitate the completed work in a manner satisfactory to the Government; and,
- d. Remove all temporary work constructed by the Government, with initiation of removal within 30 days of the conclusion of the flood event.

3. ATTACHMENTS:

- a. Exhibit A – Written request for assistance from Governor of Alaska, dated 19 September 2024.
- b. Exhibit B – Government Scope of Work
- c. Exhibit C – Determination of Imminent Threat of Unusual Flooding, Dated 06 August 2024

4. Public Sponsor technical contact information

Mrs. Denise Koch  
Chief, Engineering and DPW  
City and Borough of Juneau  
CELL: 907-586-5254  
Phone: 907-586-0080 ext 4180

IN WITNESS WHEREOF, the parties here to have executed this agreement on the day and year first written above.

THE DEPARTMENT OF THE ARMY

CITY and BOROUGH OF JUNEAU

JEFFREY S. PALAZZINI  
COL, EN  
Commanding

KATIE KOESTER  
CITY MANAGER

ADDRESS:  
2204 Talley Avenue  
JBER, AK 99506

ADDRESS:  
155 Heritage Way  
Juneau, AK 99801

STATE CAPITOL  
P.O. Box 110001  
Juneau, AK 99811-0001  
907-465-3500



550 West Seventh Avenue, Suite 1700  
Anchorage, AK 99501  
907-269-7450

## Governor Mike Dunleavy STATE OF ALASKA

September 19, 2024

Colonel Jeff Palazzini  
District Commander  
Alaska District, U.S. Army Corps of Engineers  
P.O. Box 6898  
JBER, AK 99506-0898

Dear Colonel Palazzini,

The intent of this letter is to request emergency management planning assistance from the United States Army Corps of Engineers (USACE). The City and Borough of Juneau (CBJ) requests support from the Alaska District to provide technical assistance related to the development and deployment of an Emergency Management Plan for flood fighting in response to glacial outburst flood risk.

The Mendenhall Valley is the primary residential concentration for Alaska's Capital, Juneau, Alaska. The area is currently at significant and ongoing risk of flooding due to annual glacial lake outbursts, also known as Jökulhlaups (pronounced "Yah-cuh-laups"). Jökulhlaups occur when a glacial dammed lake drains rapidly, releasing a surge of water downstream. These outburst floods pose a major threat to people and infrastructure in the region. The first glacial outburst event was observed in 2009, and the surrounding community has been dealing with subsequent Jökulhlaups almost annually. The community has experienced 14 of its top 20 recorded floods from these events since 2011. There was a record (at the time) flood of almost 15 feet flood stage in 2023. The 2024 event broke all previous records again at almost 16 feet flood stage. It resulted in rescues, substantial bank erosion, damage to public facilities, and the flooding of approximately 290 homes. I declared State disasters for both the 2023 and 2024 floods, and recovery is ongoing.

The high-water levels Juneau experienced over the last two years far exceeded what was previously thought to be the 200-year annual flood event. As the Mendenhall Glacier continues to recede, it is likely that the community of Juneau will be facing these events annually.

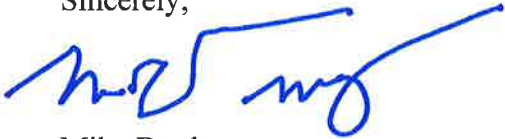
The CBJ and the State have been working closely with the Central Council of the Tlingit and Haida Indian Tribes of Alaska on response and recovery, as over 30 tribal households were affected by the flooding. We would like the USACE to support Tlingit and Haida and the CBJ in the development of a comprehensive Emergency Management plan that will be used to mitigate

Colonel Palazzini  
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the damage and potential loss of life that may occur because of these glacial lake outburst flood events.

The CBJ contact coordinating this request is City Manager Katie Koester, available at [katie.koester@juneau.gov](mailto:katie.koester@juneau.gov) or 907-586-5240.

Sincerely,



Mike Dunleavy  
Governor

cc: The Honorable Lisa Murkowski, United States Senate  
The Honorable Dan Sullivan, United States Senate  
The Honorable Mary Peltola, United States House of Representatives  
Richard Peterson, President, Central Council of Tlingit & Haida Indian Tribes of Alaska  
Katie Koester, City Manager, City and Borough of Juneau

## STATEMENT OF WORK

Alaska District will provide technical assistance related to the development and deployment of an Emergency Management Plan for flood fighting in response to glacial outburst flood risk. Alaska District will provide assistance through PL84-99, Advance Measures assistance which is limited to those necessary to prevent or reduce impacts of floods that (1) pose a significant threat to life and/or improved property, and, (2) the proposed assistance is beyond the capability of local interests and the State to perform in a timely manner.



**Mendenhall Valley Flooding – approx. 1 hour after peak of Glacial Lake Outburst Flooding (GLOF)**

## **City and Borough of Juneau Alaska Flood Fighting Analysis – Sand Filled or Sandbag Equivalent Levees**

### **Background**

On August 6, 2024 the Mendenhall Valley in Juneau, Alaska experienced a glacial lake outburst flood (GLOF), also known as a Jokulhlaup, from Suicide Basin. It released 16 billion gallons of water over a short period of time causing an almost 16 foot river stage of the Mendenhall River in the densely populated residential area causing flooding even in neighborhoods further from the river and causing people to flee in the middle of the night. The 2024 GLOF damaged 290 homes. Glacial lake outburst floods (GLOF), where a basin perched above a glacial lake collects water over time and then quickly releases, has occurred in Juneau since 2011 as the Mendenhall Glacier recedes. However, 2023 was the first time the full basin released which caused an almost 15-foot river stage causing (13 billion gallons) extreme riverbank erosion (multiple homes fell into the river) and flooding. This year (2024) the full basin release and flooding was even higher. Scientists who study GLOFs say that based on the behavior of other glaciers in Alaska, full basin releases, and continued catastrophic flooding, are likely. While historically impactful flooding has only occurred once a year, there is the added concern that the basin could have multiple full releases; it is half full as we speak and continuing to fill with rainwater. Furthermore, as ice in the basin melts, the volume of water is likely to continue to increase, causing higher flood waters and potentially impacting more homes.

The magnitude of the flooding from the next GLOF is unknown, and no inundation mapping exists for greater than 16' flood elevation. It is not known how much additional riverbank area would be overtopped once the flood elevation is greater than 16'. The increase in flood elevation could be caused by one of 2 things (or both combined); 1) a glacial release of greater magnitude than the last one; and/or 2) a similar size release coinciding with a rainfall event that has substantially elevated the Mendenhall River.

### **Flood Fighting**

CBJ is considering all available short and long-term solutions to mitigate the potential widespread damage from future releases. The short-term flood fighting solution analyzed by CBJ Engineering staff, working with flood industry vendors, is to construct 4'-6' high levees along the identified riverbanks where overtopping would (or did during the 2024 flood) impact developed properties. The result is 8 miles of levees, roughly estimated to cost \$4.7 Million.

The selection of 4'-6' high temporary levees is based upon the 4' to 6' height range products being more readily available products that could potentially reach Juneau in time for the next flood event. Larger heights up to 16' are available however lead times and costs are going to be greater and would require professional expertise for selection and installation.

The City and Borough of Juneau needs assistance **now**; with both short-term flood fighting and with planning for longer term mitigation.

City and Borough of Juneau Alaska Flood Fighting Analysis – Sand Filled or Sandbag Equivalent Levees

Examples of proposed flood fighting levees:



Sand filled Levee System



Water Filled Sandbag Equivalent Levee