



Office of the City Manager

155 Heritage Way
Juneau, Alaska 99801
PHONE: (907) 586-5240
FAX: (907) 586-5385
Katie.Koester@juneau.gov

TO: Mayor Weldon and Borough Assembly
DATE: October 3, 2024
FROM: Katie Koester, City Manager
RE: Next steps for immediate GLOF mitigation

The purpose of this memo is to get Assembly direction on next steps to mitigate glacial lake outburst flooding (GLOF) from Suicide Basin.

Where We Are

Governor Dunleavy submitted a request for a Federal disaster declaration on Thursday, September 19. As of drafting this memo, we are still waiting to hear from the President's office. Governor Dunleavy and President Peterson also submitted requests for flood fighting assistance to the United States Army Corps of Engineers (USACE) on this date, which triggered their trip to Juneau.

The Borough Assembly has taken the following actions:

- Appropriated \$400,000 for mitigation planning, hydrological mapping, and an updated inundation map
- Appropriated \$3M local match for a USACE general investigation study to explore long term mitigation
- Approved \$1,375,000 to repair and protect CBJ infrastructure
- Four (4) Assembly level meetings about flood mitigation

CBJ has engaged with partner agencies:

- Interagency technocrat meeting on September 6, 2024
- Hosted USACE Civil Engineering for a site visit on long term solutions
- Traveled to Washington DC with Mayor Weldon and Tlingit and Haida to advocate for GLOF mitigation on Sept 19 and 20
- Hosted USACE Flood Fighting Team week of September 23

Report from USACE Flood Fighting Team:

USACE spent a week in Juneau strategizing on the best way to protect valley residents from a GLOF. Their recommendation is to install HESCO barriers along the length of the river, including Marion Drive to Killewich Drive to Meander Way, eventually installing 4 miles of barriers along the developed side of the river, as well as River Road and View Drive. The rationale for prioritizing Marion Drive to Killewich Drive to Meander Way is that this is where the river jumped the bank and depending on the event, we could redirect the flow to the unpopulated side of the river. Installation on Marion will present challenges as many of those homes do not have sufficient frontage. USACE will provide us the barriers and shipping free of charge as well as training CBJ on how to install the

barriers and some technical assistance. USACE, or their contractors, will not perform the site preparation or install the barriers. HESCO barriers will take three (3) weeks to arrive from the date that we request them. However, we have to use them; if we are not actively working to install barriers, we run the risk of them being redeployed to another area of the country that needs them. They also would like us to place one order instead of requesting in phases.

CBJ has also requested USACE provide technical assistance to homeowners who want advice on how to protect their property. We are waiting to see if there is available funding in the USACE budget. If there is, we would like to schedule a neighborhood meeting around their availability. In addition, USACE can provide 60,000 sandbags. CBJ would manage the distribution of sandbags and provide sand. If each of the 289 homes that flooded requested bags, that would be 200 per household, which would go a long way towards protecting low points, doors, etc. It is common practice in areas prone to flooding for local municipalities to distribute sandbags for homeowners to install.

Things to keep in mind:

- HESCO barriers have a 3-foot square footprint and are 4 feet tall, unless they need to be higher – in which case you build a pyramid, and the footprint is 6 feet wide and 8 feet high or 9 feet wide and 12 feet high.
- HESCO barriers will need to be filled with sand by a loader, which will take up additional square footage in yards. This will be an invasive process that will tear up yards and be disruptive to homeowners.
- In almost all instances, we would be placing barriers on private property. We would be requesting “right of access” to private property. Under the Governor’s disaster declaration, we can legally enter private property to prevent a disaster – however, to the extent we can coordinate with willing homeowners, the better. Attorney Wright has a good analysis of the legal risks that can be found as an endnote.¹
- There are homes along the river without enough property to install a barrier. We may have to ask the homeowner to remove a temporary structure or a deck. We may run into one or more homes that cannot be protected due to the proximity of the home to the bank.
- The soils may not be able to withstand the weight of the HESCO barriers. In this case armoring or site preparation will have to be done to prevent failure. Who is responsible for those costs? This will add extra time to the process.
- At this point we do not know the cost of installing HESCO barriers along four (4) miles of river because we do not know how much site preparation is needed, and who pays for it. This is a huge unknown variable; my best guess at this stage is the entire project is in the \$5M-\$10M range.
- HESCO barriers are designed to stay in place for five (5) years. They will require annual maintenance. A long-term fix could take more than five (5) years which would require significant maintenance and/or replacement of barriers.
- If a homeowner is unwilling to place a barrier in their yard, would CBJ be willing to force the issue?

Options:

1. DO NOTHING. This is the simplest option. The cost is minimal and CBJ avoids liability. However, we do not know how much worse the flooding could be in the future. We could

easily lose a significant portion of our housing stock and population over the next few events.

2. PROVIDE SANDBAGS and sand to residents for individual property protection.
3. INSTALL HESCO BARRIERS just along the areas of the river where it jumped the bank during the August 2024 event (Marion Drive to Killewich Drive to Meander Way). However, we do not know that partial installation will be effective, and the potential for negative downstream impacts is unknown.
4. INTALL HESCO BARRIERS ALONG THE LENGTH OF THE RIVER, starting with Marion Drive to Killewich Drive to Meander Way. This essentially is an extension of option 3. CBJ would begin installation of barriers and concurrently work with USACE and private contractors to develop a flood fighting plan for the remaining riverfront. The goal would be to have most of this work complete before next GLOF season, though that timeline is tight. This option is the most invasive and the most expensive but has the greatest chance of success.

Timeline:

October 21 regular meeting. Approve Emergency Legislation appropriating funding for Phase 1 (Marion Drive to Killewich Drive to Meander Way)

November, December and early January. Outreach to individual property owners to document their yards and to get permissions for barrier installation. Decide on approach if permission isn't granted. Site preparation. Install as many HESCO barriers as possible along Marion Drive to Killewich Drive to Meander Way. Divert CBJ employees for quick installation.

Develop detailed flood fighting plan for remainder of project to bring accurate cost estimate to Assembly.

December 16 regular meeting. Introduce ordinance for installing barriers on remainder of bank (Phase 2).

February-May. Site work and installation of remaining HESCO barriers.

Funding:

Emergency legislation will need to be introduced at your next meeting to begin installation this year. USACE has requested \$1M in Federal dollars for the general investigation study in FY25. This means in the near-term, we would only need to come up with \$1M in match, understanding we will have to come up with additional dollars as more federal funds become available. Re-directing those funds to emergency work is one option. Regardless, the appropriating ordinance will be from General Fund, and you can debate how to back fill. Current fund balance is \$5.1M in unrestricted and \$17.3M in restricted budget reserve.

CBJ is working with Tlingit and Haida to apply for disaster mitigation grants and solicit support from federal partners. However, timing is very difficult. We need to do this work now, and it is unlikely any grant funding would be available to spend within the next six (6) months. It would be our hope to offset some of the expenditure with grant funds, but unlikely we could make a sizeable dent without waiting till next winter for installation of Phase 2 of the barriers. There are efforts underway to pass disaster assistance legislation this fall and we are engaged with the delegation to be for inclusion in legislation. We will do our best to turn over every funding rock and bring that information to you as part of the Phase 2 appropriation request.

Recommendation:

If CBJ is going to do anything beyond providing sandbags to individual homeowners, I am of the opinion we must protect as much of the bank as possible. While a shorter project (Marion Drive to Killewich Drive to Meander Way) could be enough this year, the volume of water in the basin is unpredictable and likely growing. I propose a holistic approach that allows CBJ staff to get started with the priority spots while we study and formulate a plan for the entire project.

Requested Motions:

- Direct staff to request sandbags from USACE and develop a plan for distribution.
- Approve Emergency Ordinance 2024-34, approving a cooperative agreement with USACE for approximately four (4) miles of HESCO barriers and introduce an emergency appropriation for up to \$2 million dollars at the next regular Assembly meeting for installation of Phase 1 (Marion Drive to Killewich Drive to Meander Way), funding source general fund.

Enclosed:

- HESCO Spec Sheet
- Images of HESCO barriers installed in flood fighting capacity

ⁱ The Governor's declaration allows us to take actions under AS 26.23.020(g). As part of those emergency powers, we have authorization to enter land:

26.23.190 (a) If entry is reasonably necessary to actually alleviate or prevent the disaster, all persons authorized to carry out emergency measures directed under the provisions of AS 26.23.010 - 26.23.220 shall be accorded free access to all public and private land and public buildings within the areas specified, and are authorized to enter them and to perform work and take measures that are appropriate without the consent of the owners of the land or buildings.

We are currently able to enter private property to take action to avert a disaster. That said, it is advisable to work with homeowners to coordinate entry onto their land.

We are not going to get to zero liability, here are the most likely scenarios:

1. Homeowners may argue that the mere placement of the barriers is a "taking" of their land and they are due just compensation for the loss of the land. The cost of this, if we were found to have taken the land, is completely speculative.
2. Given that the barriers would be placed for 5-10 years, we may likely see a push by some homeowners to remove the barriers earlier, and if we don't, they may file claim. The longer the placement, the more likely the courts will see the placement as a taking.
3. We may see a civil trespass claim – which would be an argument that while the initial work to shore up the river was okay under the declaration, the long timeframe of the placement of the barriers converted our legal presence on someone's land to an illegal presence and trespass. The remedy on this would be monetary and removal of the barriers.
4. We may see a lawsuit claiming that CBJ's flood fighting was done in a "negligent" manner. This would be a fact-based analysis and would again result in a monetary award if we are found to have acted negligently. We would certainly argue that our actions were reasonable and supported by the information we have.
5. As pointed out many times before, there may be downstream consequences that trigger a lawsuit.

Historically, the federal government has enjoyed a decent level of immunity for flood response. However, the courts recently have begun to chip away at that immunity. The big cases come out of Hurricane Katrina and the levy system failures. So, while it would be easy to say – let’s just let the feds do this since they are immune, they are no longer as lawsuit-proof as they once were.

In reviewing flood zone response, it appears that, long-term, many communities pursue creation of a flood zone corridor; typically, a narrow easement or a large scale buy out. This would be accomplished through voluntary agreements with individual homeowners or eminent domain/condemnation actions.