

# Flood Fighting

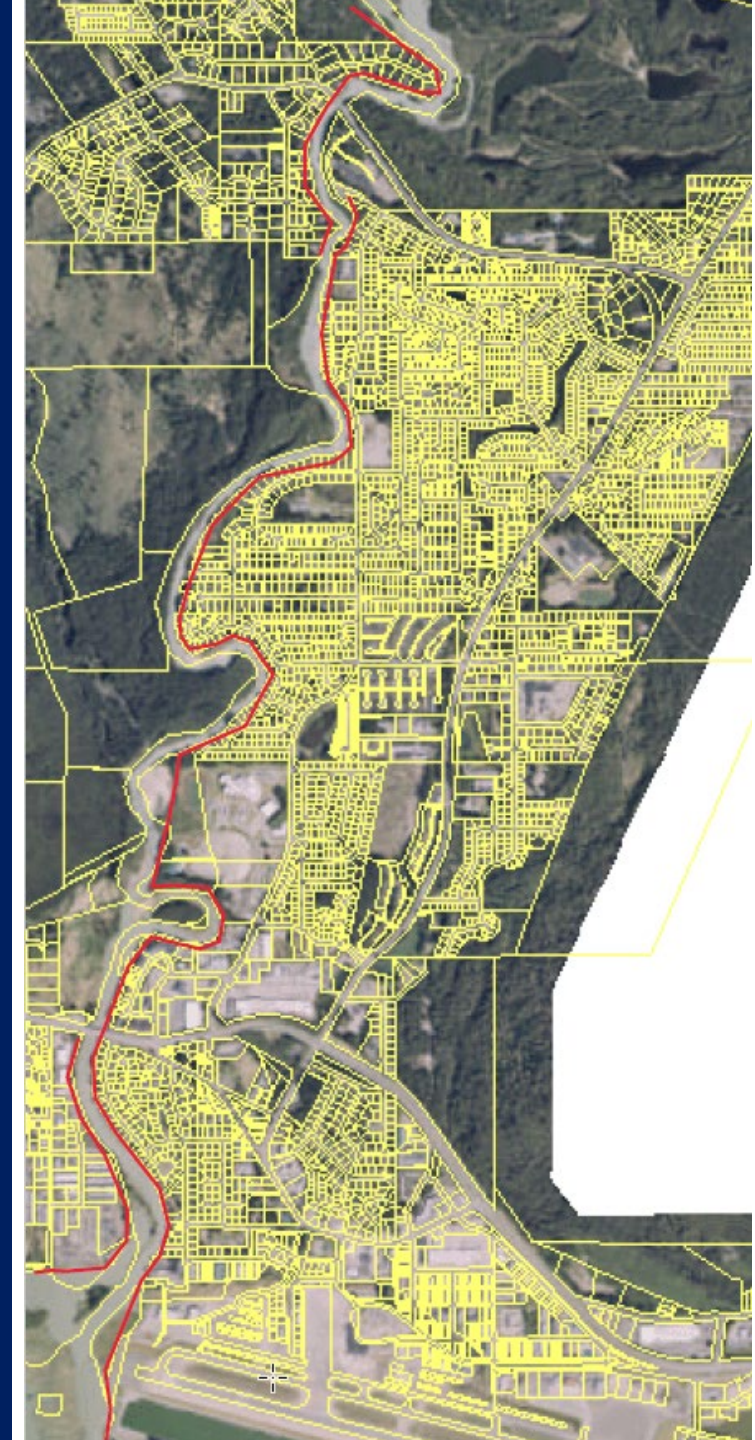
10.03.24 Special Assembly Meeting

## Requested Action Today:

- 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.

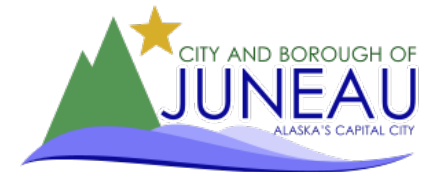


*Proposed Levee Locations (red lines)*



# Assembly Action

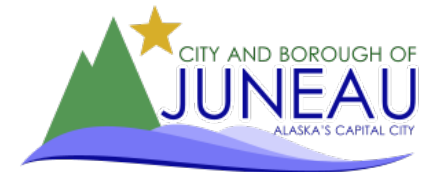
- Appropriated \$400,000 for mitigation planning, hydrological mapping, and an updated inundation map
- Appropriated \$3M local match for a USACE general investigation study to explore long term mitigation
- Approved \$1,375,000 to repair and protect CBJ infrastructure
- Four (4) Assembly level meetings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



# Engaging with Partners

## **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



# The Search for Solutions...

## Short Term Solution: Flood Fighting

- Deploy sandbags and information to residents to protect individual property
- Temporary levees – HESCO Barriers along the length of the river, starting where the river jumped its bank in 2024 event.
- CBJ implementing recommendations of THE EXPERTS - US Army Corps of Engineers (USACE)

## Long Term Solution: In Progress

- US Army Corps of Engineers (ACOE)
  - General Investigation Study (GI) – CBJ has made request and \$3M appropriation for 50% local match
  - If GI identifies viable construction project(s) they could be funded by ACOE with 35% local match





# Examples: Temporary Flood Fighting



Sand Filled Levee System



HESCO Barriers Installed Along a Riverfront

# Short Term Flood Fighting:

Temporary Levees (HESCO barriers filled with sand) along developed riverbank

## Why HESCO barriers?

- Readily available product, quick shipment, free from USACE and what is recommended by USACE Flood Fighting team
- Less invasive barriers often require flat paved ground
- Larger heights (up to 16') are available at higher cost and longer lead time.

## Footprint

- 3' square, 4' height
- Can build larger heights (up to 16'), requires a pyramid - bigger footprint and exponentially more cost

## Maintenance/life span:

- Will require maintenance (repairing breaches, replacing broken cells, relocating after localized bank failures etc. estimated at \$400,000
- Designed with a lifespan of 5 years





An aerial photograph showing a residential neighborhood in Juneau, Alaska, that has been severely flooded. The water is murky and covers most of the ground, with only the roofs of houses and tops of trees visible. A thick red line is drawn across the top left portion of the image, indicating the location of a proposed temporary levee. The line starts near the top left, follows the edge of a wooded area, and then curves to follow the edge of a flooded residential area. In the top right corner, there is a semi-transparent grey box containing text. In the bottom left corner, there is a logo for the City and Borough of Juneau.

**Short Term Flood Fighting:**

Proposed temporary levee to protect the Sharon St. and Emily Way neighborhoods

Riverside Dr

Emily Way

Sharon St.





Meander Way

Meander Way

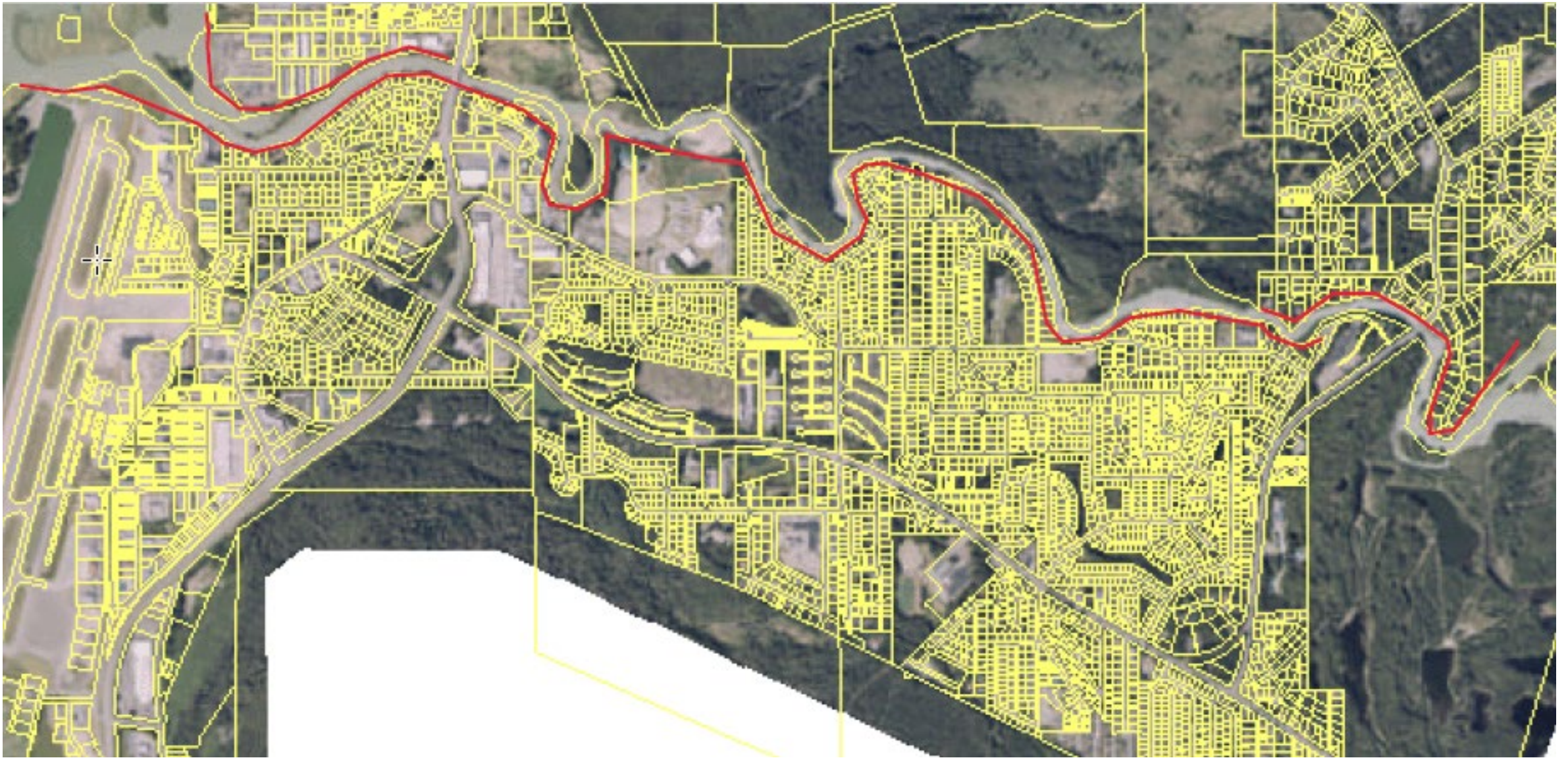
Meander Way

Long Run Dr.

Proposed temporary levee to protect Meander Way neighborhoods

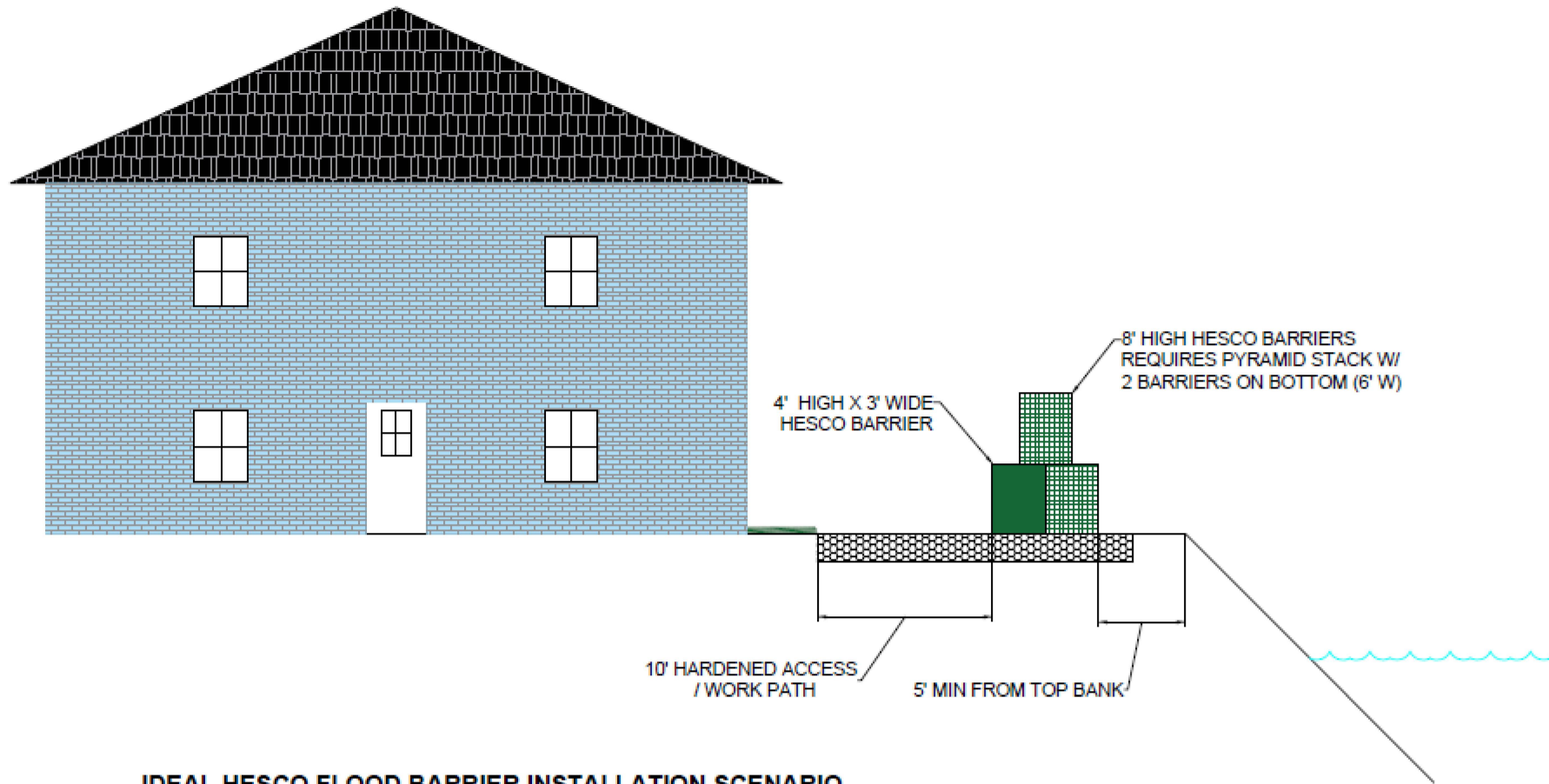






Proposed levee locations red lines

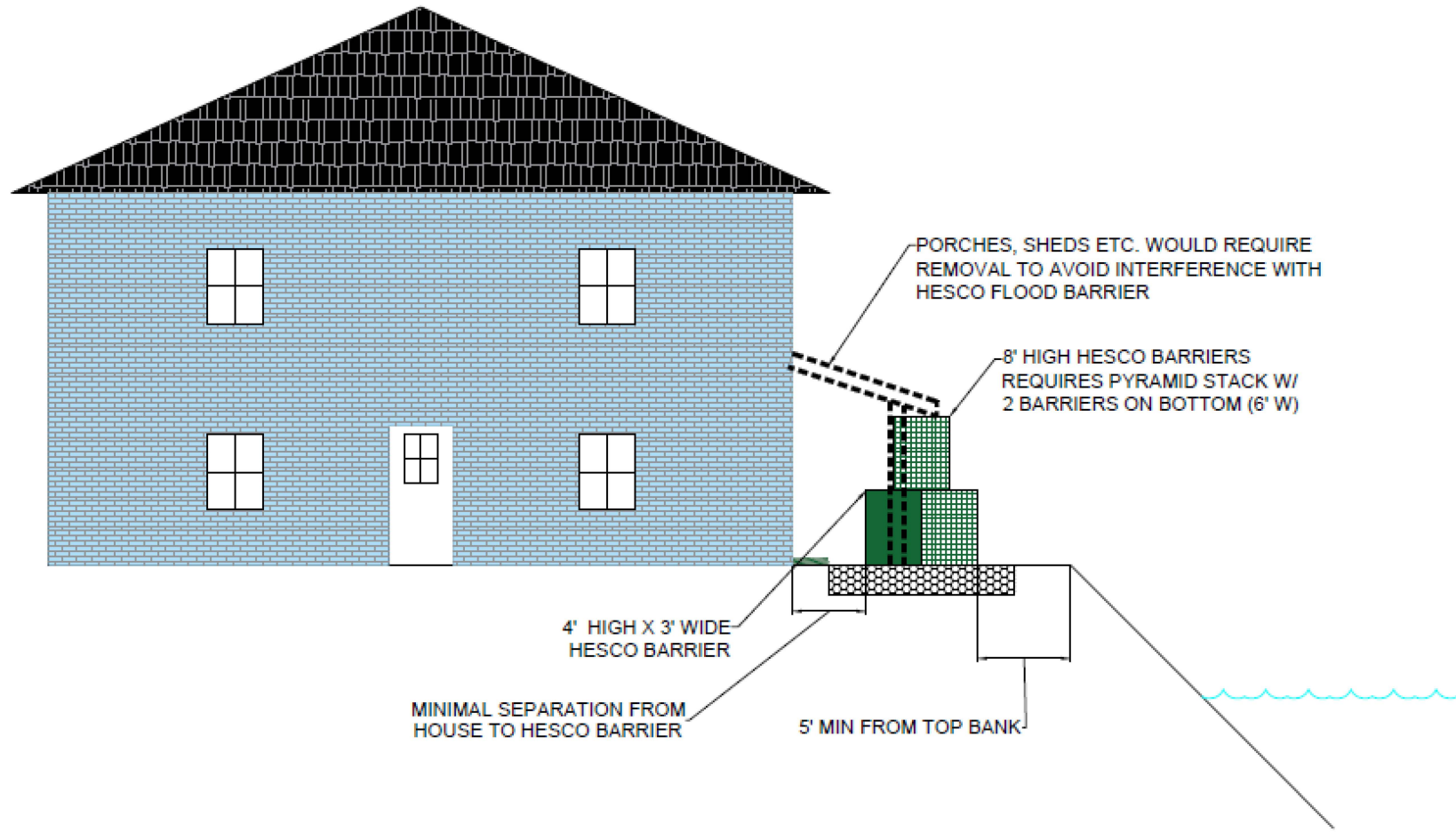




### **IDEAL HESCO FLOOD BARRIER INSTALLATION SCENARIO**

- Barriers can be installed at least 5' from riverbank and above stable slope. Will require greater distance if slope isn't armored and can be vulnerable to bank erosion
- Room for 10' wide hardened (rock or gravel) access and hardened surface under flood barriers. Access for construction equipment to fill barriers with sand and future maintenance
- No obstructions to be removed from access and barrier route (decks, trees, sheds, fences)





**LESS THAN IDEAL SCENARIO - HESCO FLOOD BARRIER INSTALLATION**

- Barriers installed at least 5' from riverbank and above stable slope. Will require greater distance if slope isn't armored and can be vulnerable to bank erosion
- Lack of room for equipment access will require grading and ground preparation by hand only.
- Will require filling by labor intensive (manual labor - bucket brigade, wheelbarrows, 5 gallon buckets etc.) and / or specialized equipment (crane or helicopter hoisting a concrete bucket over the properties) to fill barriers with sand
- May require removal of decks, porches, lawn structures (green houses, sheds, gardens, fences, trees etc.) that are in the way of the barrier alignment

# Challenges and Unanswered Questions...

- HESCO barriers are ugly, large and will be there for a while.
  - Barriers will need to be filled with sand by a loader - invasive to homeowners.
  - In almost all instances, we would be placing barriers on private property. We would be requesting “right of access” to private property. What if a homeowner is unwilling to grant that access?
- Homes do not have enough property to install barriers – who pays for that?
  - The soils may not be able to withstand the weight of the HESCO barriers. Who is responsible for those costs?
  - Site preparation will add extensive cost and time to the process.



# Options:

1. DO NOTHING
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
4. INTALL HESCO BARRIERS ALONG THE LENGTH OF THE RIVER.

## Staff Recommendation:

- Direct staff to request sandbags from USACE and develop a plan for distribution.
- Approve a contract with USACE for 4 miles of HESCO barriers
- Introduce emergency legislation at the October 21 meeting for up to \$2M to install first phase of barriers, understanding there will be a request for additional funding once more information is available

# Timeline: ambitious

TBD Public Meeting for USACE to provide homeowners advice, talk about sandbag distribution plan

October 21 regular meeting. Approve Emergency Legislation appropriating funding for Phase 1 (Marion Drive to Killewich Drive to Meander Way). Discuss policy decisions around site preparation.

October 4. Begin Outreach to individual property owners to document their yards and to get permissions for barrier installation.

November, December and early January. 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: More Unknowns

**Current ask is for \$2M for phase 1, but don't know entire project cost until:**

- **More data: individual properties are assessed, lidar is flown**
- **Policy decisions are made on site preparation**

**Grants:**

- **CBJ is working with Tlingit and Haida on potential grants with current fiscal year funds**
- **Most grant programs will not have funding available to spend quickly**

**Federal Appropriation**

- **Continuing to work with delegation on inclusion in potential continuing resolution for disaster recovery. Have been advised those funds won't be available until 18 months after passage**



“You have to confront the brutal facts that you might not pull it off yet and the same time have unwavering faith, completely unwavering faith. And you have to do both at the same time.”

-John Batiste, *American Symphony*

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