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TO: Katie Koester, City Manager DATE: May 8, 2025

THROUGH: Denise Koch, Director Engineering and Public Works

FROM: John Bohan, Chief CIP Engineer

SUBJECT: Extension of HESCO Flood Barriers Downstream from Phase 1 to Brotherhood Bridge

**Introduction:**

After reviewing the draft inundation maps when provided by Michael Baker International (MBI), it became evident that more flood fighting is necessary to protect high value CBJ assets from the potential of an 17 FT and 18 FT flood stage. Seeing the modeled inundation in and around Dimond Park reveals that CBJ Valley Library, Kaxdigoowu Heen Elementary School and the Dimond Park Field House (18 FT only) are inundated by the 17 FT and 18 FT flooding. Beyond Dimond Park, other critical community facilities would be impacted by a 17 FT or higher flood stage, including Trillium Landing and Riverview Senior Living facilities, the new SEAHRC Vintage Park Campus (18 FT only), Alaska Housing Finance Corporation (AHFC) - Riverbend Housing Complex and the Valley Transit Center, not to mention many others. The 18FT flood stage also shows the potential for back flowing water up Riverside Drive and into the Meander Way neighborhood – see Figure 1a.

**Solution:**

Staff conducted a preliminary analysis believes it would be feasible to extend the HESCO Flood Barriers from the end of Phase 1 at Rivercourt Way downstream to the Brotherhood Bridge. Work could be completed by early July.

Juneau's local contractors, Admiralty, Coogan, North 40 and GR Cheeseman, have made incredible progress in installing the 9,800 ft (along the river) of HESCOs from upper Marion Drive to Rivercourt Way. With the exception of a few key locations kept open for access to install check valves in the stormwater drains, barrier installation will be complete by May 9 or 10. The crews continue to work on cleanup and restoration of yards behind, but they are not far from being complete with that work as well.

**Options:**

There are three possible options:

- 1- **Do Nothing** – If nothing is done, Dimond Park and properties on the east side of the river would more than likely be inundated with floodwater if the next GLOF reaches a 17 FT flood stage (Figure 1b) or higher.
- 2- **Phase 1A** (Figure 2)  
Extend approximately 3,200 feet of HESCO Barriers from Rivercourt Way, along the maintenance road and trail that runs along west side of Dimond Park to the CBJ Dimond Park property line beyond the Kaxdigoowu Heen Elementary School at the trail entrance at AHFC Riverbend Housing complex. MBI modeled this segment of HESCOs and the model shows that it will mainly protect the CBJ facilities in Dimond Park and will protect the Meander Way neighborhood from the back water inundation that would enter at and around Dimond Park at the 18 FT flood level.

**Phase 1A Cost: Estimated approximately \$500k.**

#### Benefits

- The proposed HESCO path extension is completely on CBJ owned property.
- HESCOs would be constructed on an already existing trail with good access.
- The proposed HESCO barrier extension would contain the 18 FT flood stage from running into Duck Creek and bringing flood waters to the neighborhoods adjacent to Duck Creek, including the Mendenhall Mall area, James Boulevard neighborhoods, all the way to the Airport property.

#### Concerns

- The proposed extension does not completely keep floodwaters out of Dimond Park at 18 FT flood stages and higher. Inundation from the area at the AHFC Riverbend Housing property and downstream (beyond the end of the proposed HESCO extension) would flow back into Dimond Park and adjacent areas including the Valley Transit Center.

### **3- Phase 1B (Figure 3)**

Extend an additional approximately 3,000 feet of HESCO Barriers from the end of Phase 1A (trail entrance at AHFC Riverbend Housing complex) to the berm on the downstream side of Brotherhood Bridge. The barriers would be installed on the established trail that runs along the river edge from Riverbend Housing, behind the US Post Office, Riverview Senior Living, Trillium Landing, and the Vintage Business Park buildings. This segment of HESCOs has not yet been modeled, however, given the inundation mapping that exists and the high elevation of Egan Drive and Brotherhood Bridge, there is high confidence that the HESCOs will keep floodwaters (up to 18 FT flood stage) out of the remaining areas on the east of the river down to the Brotherhood Bridge. *Phase 1B will not be effective without implementation of Phase 1A.*

**Phase 1B Cost: Estimated approximately \$850k.**

#### Benefits

- Very high confidence that the proposed extension of the HESCO barriers will protect remainder of properties on east bank of the river down to Egan Drive at Brotherhood Bridge, including Riverbend Housing, Valley Transit Center and all properties within the Vintage Business development for up to an 18 FT flood stage.

#### Concerns

- The proposed HESCOs flood barriers would be installed on eight private properties. (AHFC, SEARHC, Riverview Senior Living, Trillium Landing, McKeown & McKeown LLC, Goldbelt, Clinton Park Condominiums)
- Sections of the riverbank in Vintage Business development appear to require bank armoring at some locations which will not be possible to complete in this time frame before July 2025. The HESCO barriers can be installed far enough from the riverbanks requiring armoring that bank erosion from a 2025 GLOF would likely not compromise the HESCOs, but the riverbank armoring is highly recommended for the long term protection of the HESCOs. Access points would be strategically planned during the HESCO deployment to facilitate the armoring in the future.

**Budget and Funding:**

We anticipate that the Phase 1 HESCO project will come in under budget and leave approximately \$2.18 million remaining in appropriated funding. **The Phase 1A and 1B work would not be charged to the project costs associated with the HESCO LID, and LID beneficiaries would not be responsible for those new costs.**

Currently, the HESCO Phase 1 Project is expected to cost approximately \$5.5 – \$6 million. The estimate for Phase 1A and 1B totals \$1.3 million.

**Budget overview:**

+ \$7.8 Million	Funding from ADEC Revolving Loan Fund – partially forgivable
+ \$0.88 Million	ICDBG-IT Grant subaward from THRHA
- \$0.5 Million	reserve for private property restoration within LID upon removal of HESCOs
- \$6 Million	HESCO Phase 1 LID Construction
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+ \$2.18 Million	Budget remaining after Phase 1 HESCO Barrier installation
- \$1.35 Million	Cost for Phase 1A and 1B
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+ \$0.8 Million	contingency remaining after all proposed work (Phase 1, 1A & 1B)

**Urgency:**

There are two urgent issues for consideration:

- 1) **TIMING:** Work would need to begin immediately to ensure work can be completed before early July.
- 2) **WORKFORCE:** The contractors will finish up Phase 1 work within the next 10 days and will need to continue on HESCO installation or they will move on to other work commitments. They may also release the additional workers that were hired for the Phase 1 HESCO project. If delayed, contractors may not be available due to engagement in other work commitments and will be unlikely to rehire additional workforce because that would have moved on to other work with other companies.

**Availability of HESCO Flood Barriers:**

As of the last inventory count of the remaining flood barriers on hand, there are still an adequate amount of HESCO barriers to extend the barriers the 6200 ft from Rivercourt Way to Egan Drive at Brotherhood Bridge.

**Conclusion:** Engineering staff are confident in the effectiveness of the proposed extension of the HESCO Phase 1A and Phase 1B. In addition, the success of finding grant funding (through THRHA) and ADEC low interest and partially forgivable loan funding, make the extension of the HESCO Barriers to the Brotherhood Bridge possible. This proposed extension of the HESCO flood barriers protects many of Juneau's most vulnerable residents and high value CBJ and private infrastructure (middle and elementary School, Valley Library, SEARHC primary care facility, etc.)

Figure 1a. - 18FT Flood Inundation Map (with HESCO) Dimond Park Area

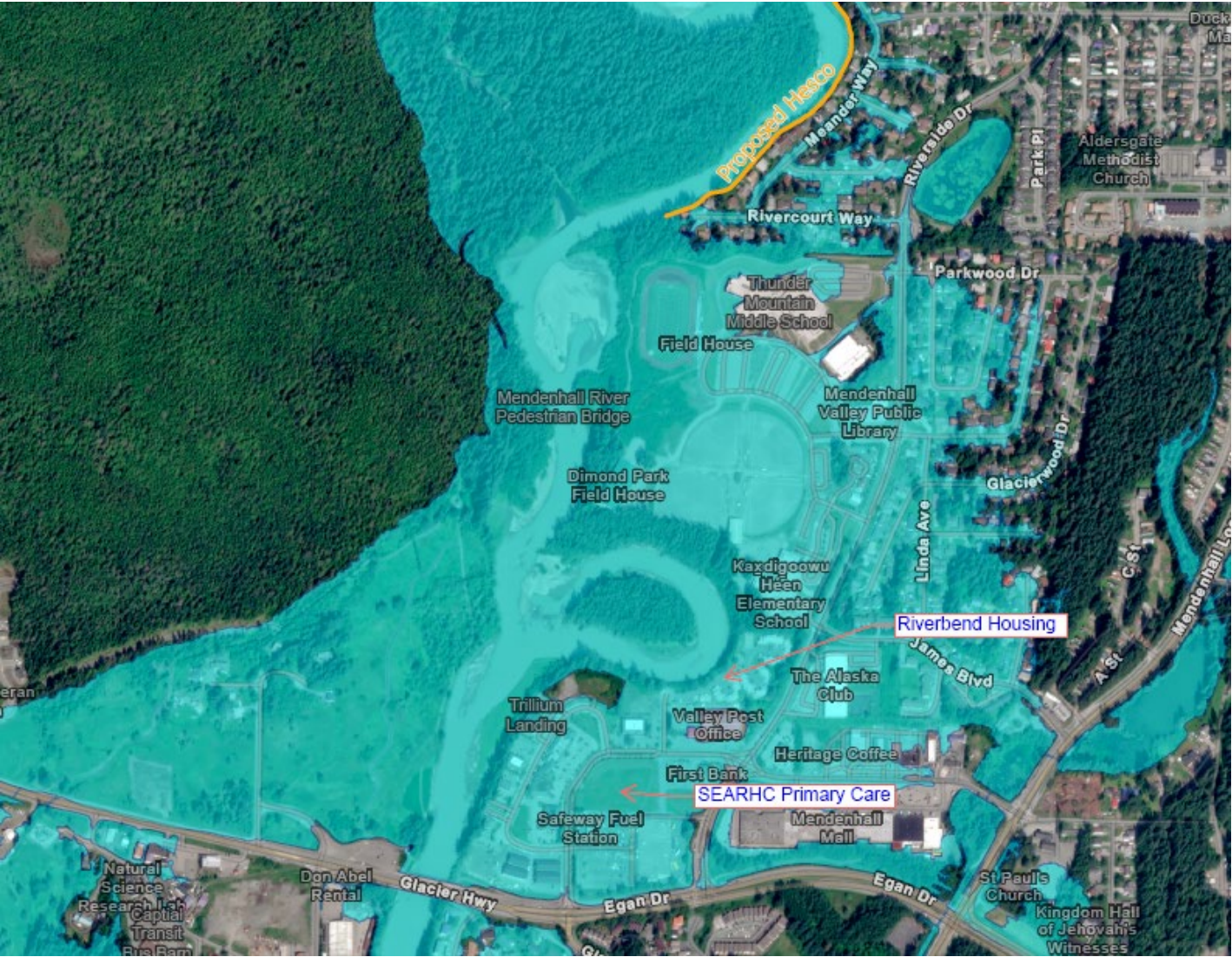




Figure 1b. - 17FT Flood Inundation Map Dimond Park Area

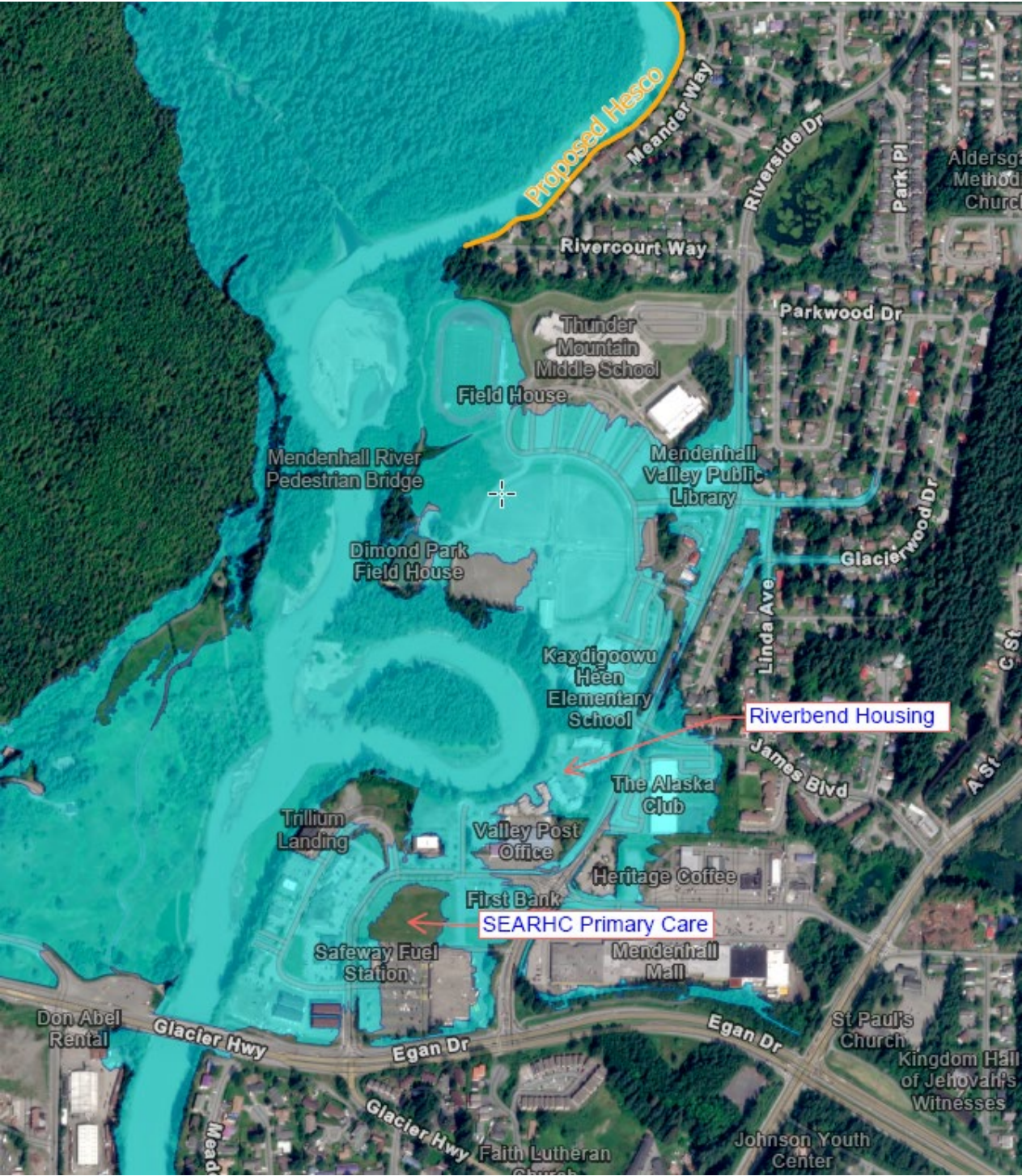




Figure 2. HESCO Phase 1A Inundation Protection at 18 FT

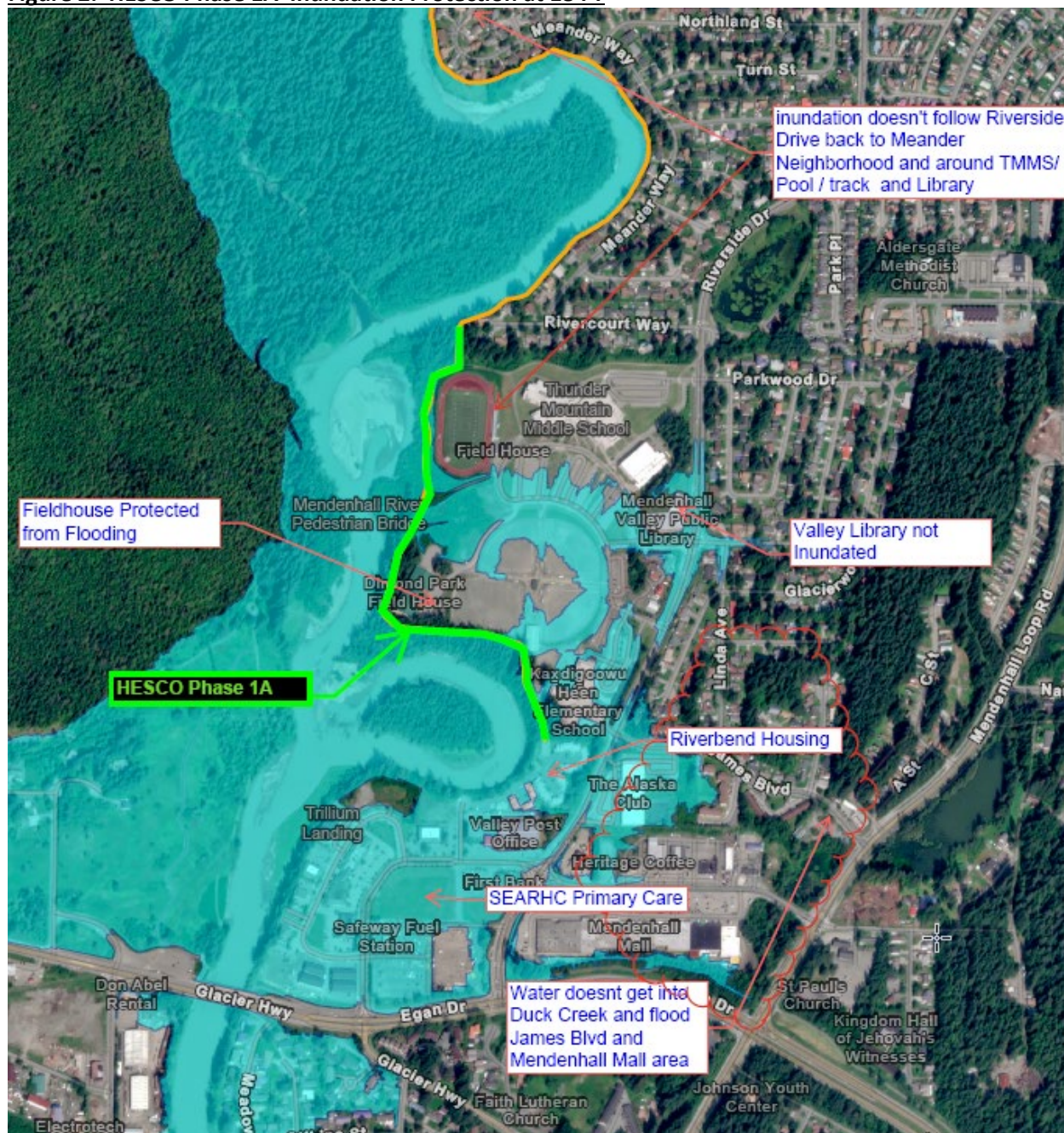




Figure 2. HESCO Phase 1B Inundation Protection at 18 FT

