



SPECIAL ASSEMBLY COMMITTEE OF THE WHOLE AGENDA

May 12, 2025 at 12:00 PM

Assembly Chambers/Zoom Webinar

Assembly Committee of the Whole Worksession - No Public Testimony will be taken.

<https://juneau.zoom.us/j/95424544691> or 1-253-215-8782 Webinar ID: 954 2454 4691

A. CALL TO ORDER

B. LAND ACKNOWLEDGEMENT

We would like to acknowledge that the City and Borough of Juneau is on Tlingit land and wish to honor the indigenous people of this land. For more than ten thousand years, Alaska Native people have been and continue to be integral to the well-being of our community. We are grateful to be in this place, a part of this community, and to honor the culture, traditions, and resilience of the Tlingit people. Gunalchéesh!

C. ROLL CALL

D. APPROVAL OF AGENDA

E. AGENDA TOPICS

1. GLOF Inundation Maps and HESCO Barrier Installation Phase 1A and 1B

Release of Glacial Lake Outburst Flooding (GLOF) Inundation Maps

Inundation Maps website link: <https://juneau.org/engineering-public-works/flood-inundation-maps>

2. Consideration of HESCO Phase 1A & 1B

F. STAFF REPORTS

G. NEXT MEETING DATE

H. SUPPLEMENTAL MATERIALS

I. 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, e-mail: city.clerk@juneau.gov.



City and Borough of Juneau
 City & Borough Manager's Office
 155 Heritage Way
 Juneau, Alaska 99801
 Telephone: 907-586-5240 | Facsimile: 907-586-5385

TO: Deputy Mayor Smith and Committee of the Whole
 FROM: Katie Koester, City Manager
 DATE: May 8, 2025
 RE: GLOF Inundation Maps and HESCO Barrier Installation Phase 1A and 1B

On May 8th, we shared new glacial lake outburst flood (GLOF) inundation maps that have been under development by our consultant, Michael Baker International (MBI), in partnership with technical experts. Additionally, staff developed and published a new website containing answers to what we believe will be frequently asked questions and other related information. Members of the local media were given opportunities to preview the maps and ask questions in an effort to ensure as much public communication as possible on this important topic.

Review of Maps

One purpose of the meeting today is to formally share these maps and related information with the Assembly, and for the Assembly and public to hear from our technical experts. In addition to the information in today's packet and what you'll hear today, we have a 45-minute recorded webinar on our new website that goes into further technical detail for those who would like to dive deeper into those details.

Immediate Possible Next Steps

The maps quickly illustrate the need to continue installing barriers to protect against future flood events. Staff is nearing completion of Phase 1 of the HESCO barrier installation project. Budget and materials remain to extend from the current terminus (6200 Rivercourt Way) to Egan Drive at Brotherhood Bridge. In the case of a GLOF that exceeds the 2024 event, this extension would protect hundreds of millions of dollars of public infrastructure, in addition to residences and commercial properties. However, we would need to make a decision quickly and wrestle with the fairness issue of these protected properties being outside of the LID.

Fairness

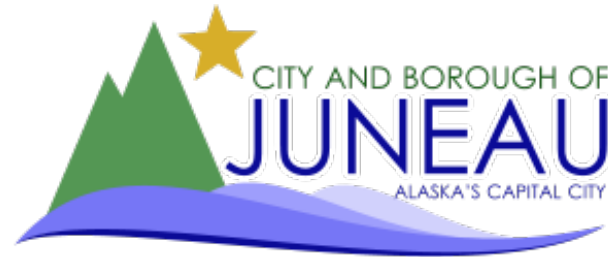
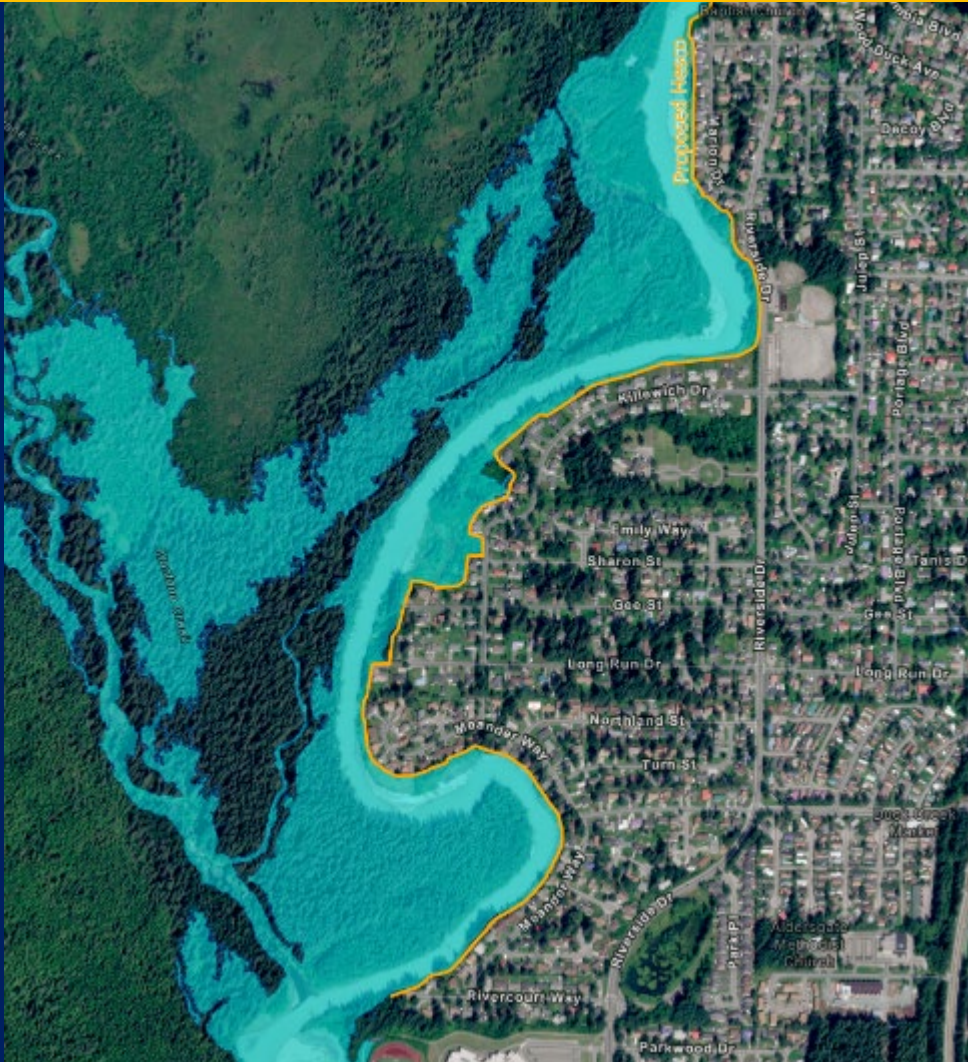
The expenditures associated with the LID will exclusively include Phase 1. At this point we are over \$2M under budget for Phase 1. This will result in lower assessments for each household in the LID (recall the LID assessed 40% of actual project cost among 466 properties), barring unknown additional expenses to the project (i.e., pending litigation). We do not have time to care for an LID for this short stretch of property. Furthermore, it principally protects public infrastructure. However, the inundation maps include hundreds of new properties that will be protected by the HESCO barriers – and even more that will be protected by long term mitigation. There will be plenty of opportunity for spending future public dollars on long- and short-term mitigation. Staff, the Assembly, and the community need to spend brain power problem solving how to share this burden appropriately across all CBJ taxpayers and benefited properties. This could look like more LIDs, or it could look like a special tax district with a flood mill levy – or some other mechanism not yet discussed. At some point we will need to have faith in CBJ residents to support a project that protects their neighbors when they may have already benefited from this proposed extension.

Recommendation

Discuss appetite for extending the scope of HESCO Barrier Installation Phase 1. If there is appetite to extend HESCO barriers, give staff direction to proceed with Phase 1A and collect more information on Phase 1B, including outreach to affected properties.

MENDENHALL FLOOD FIGHTING INUNDATION MAPS

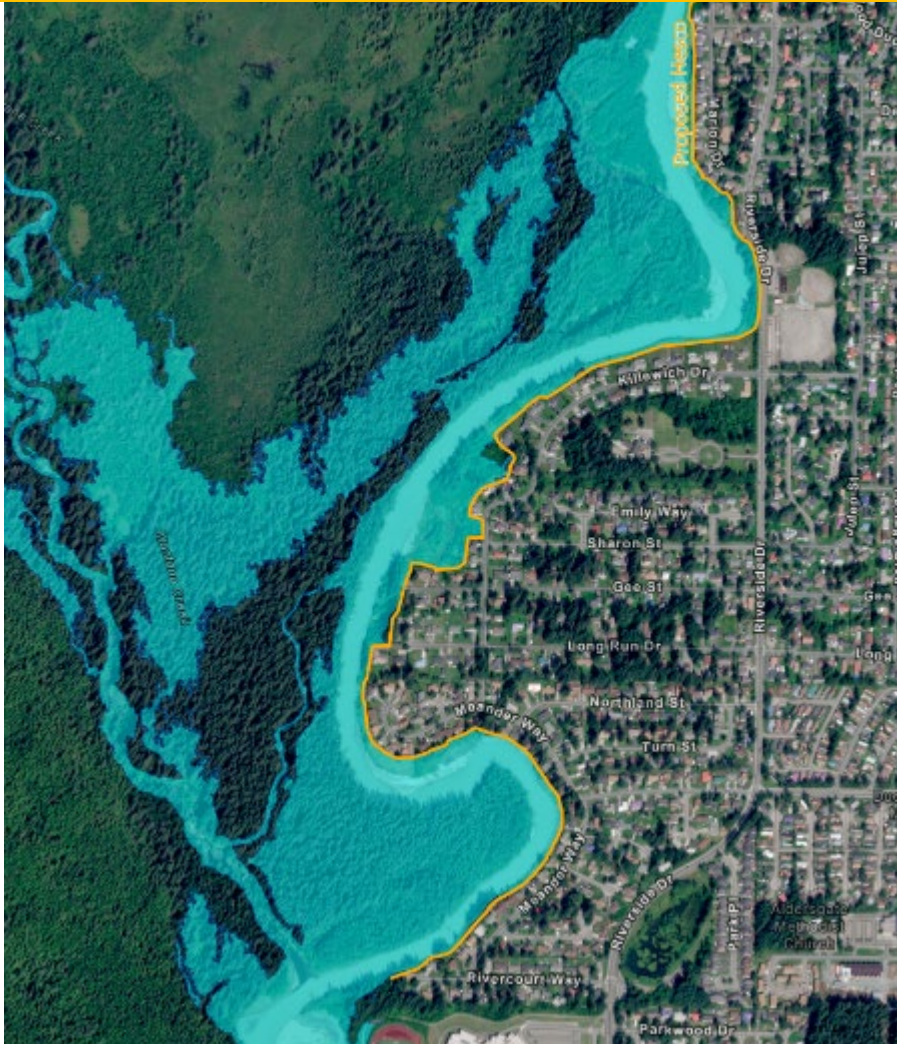
MAY 2025



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MENDENHALL FLOOD FIGHTING INUNDATION MAPS



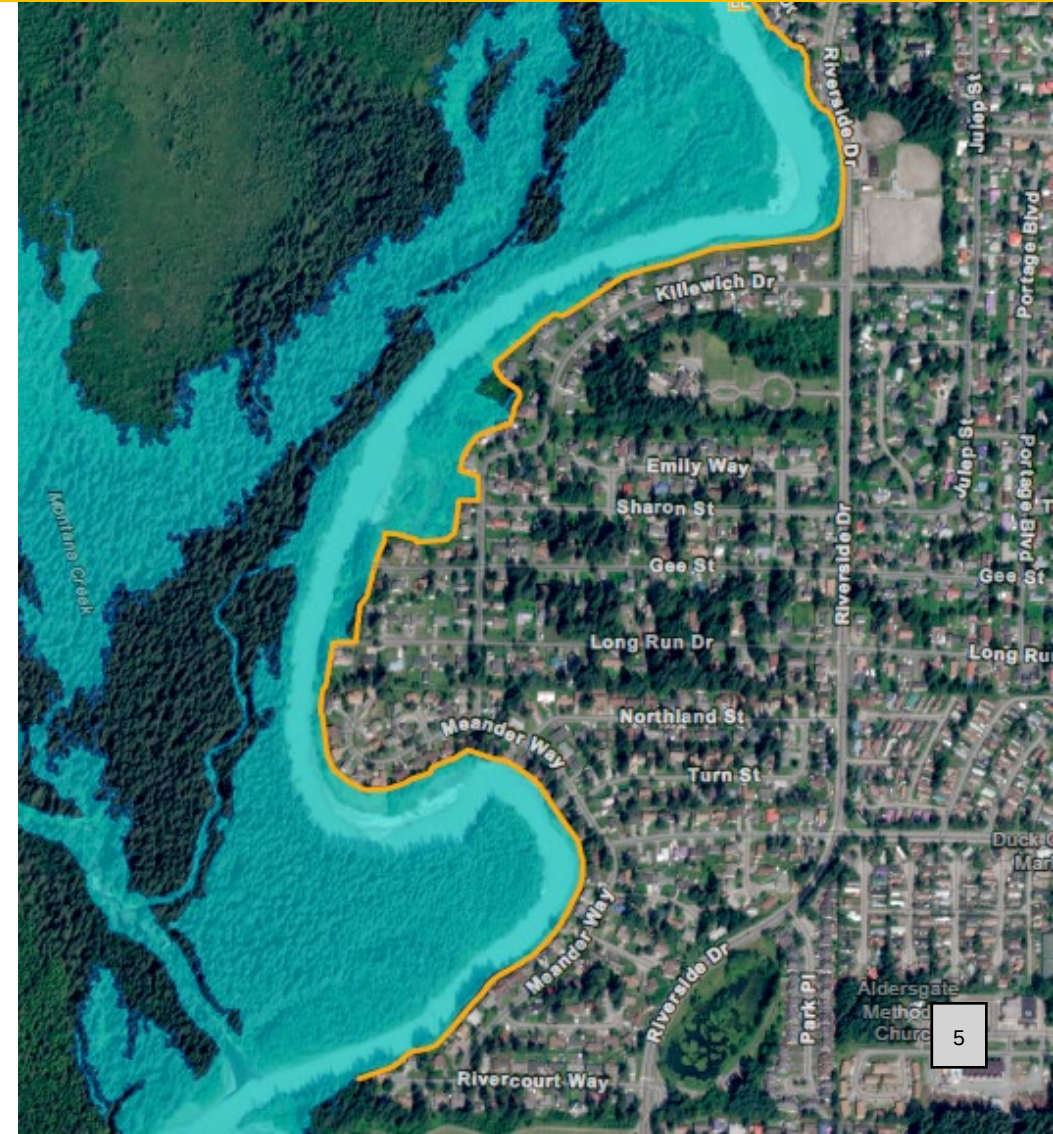
AGENDA

- BACKGROUND
- BOTTOM LINE
- MODEL AND MAP OVERVIEW – MICHAEL BAKER, INT
- WHAT'S NEXT?
CBJ Emergency Operations & Tlingit & Haida Office of Emergency Management

MENDENHALL FLOOD FIGHTING INUNDATION MAPS

Bottom Line:

- The HESCO Barriers (Phase 1) work as intended.
- HESCO Barriers (Phase 1) do not cause downstream or upstream impacts to homes or developed properties at flood levels similar to the 2024 GLOF.
- Interagency collaboration & review provides confidence in the maps
 - Maps will support emergency preparedness, progress on a long-term solution
- *Modeling for flood stages higher than the 2024 GLOF shows more near-term flood fighting work is needed.*



Garrett Yager - Surface Water Manager

Michael Baker, International

Project Scope:

- 2D surface water model to simulate increasing flood stages
 - Captures complex distribution of water, detailed elevation data
 - Used HEC-RAS 2D modeling program, developed & managed by USACE
- Develop associated flood inundation maps
 - Identify areas of high risk, improve infrastructure to mitigate risk, help in planning and response to extreme flooding

Modeling Process

Data Acquisition & Review + Agency Consultation

NOAA, NWS, USFS, USGS, AKDOT&PF, USACE, CBJ, more

Simulate Flooding with Latest Agency Data

USGS Rating Curve & Peak Discharge Updates (Spring 2025)
NWS GLOF Discharge Hydrographs & USGS Flood Frequency Data
Tidal Influences

Model for Existing Conditions & HESCO Barrier Alignment

Identify impacts and efficacy of barriers to mitigate flood risk

Assumptions & Limitations

Model Calibrated to 2024 GLOF

Used highwater marks, aerial images, local input; model may include slight variations.

Fixed Terrain

Does not capture changes in channel geometry during flooding.

Fixed Tidal Backwater

Assumes high fixed tidal backwater that may not be present during flood event.

Runoff Volume Assumptions

Events with equivalent peak stage/discharge may yield varied flood extents based on hydrograph shape and total runoff volume.

Assumptions & Limitations

Storm Water Conveyance

Does not map floodwater conveyed via stormwater pipes; Recent CBJ drainage improvements.

19FT & 20FT Stage Events Beyond Upper End of USGS Rating Curve

Extrapolated well beyond any historical flood event 20FT discharge is just over 2 times 2024 GLOF, adds uncertainty at higher stage maps.

Mapping Simplification

Islands of 1 acre or less removed from mapping, including buildings.

Bridge footprints also removed where impacted by floodwater

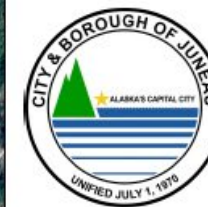


Flood Fighting Inundation Maps Mendenhall Valley, Juneau, AK

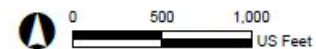
Without HESCO Barrier
17FT, Stage (NWS Gauge MNDA2)
Approximately 1.25 times 2024 GLOF discharge

Note: Shading indicates limits of water inundation
and does not include water depth

May 2025



Michael Baker
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Source: State of Alaska, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, NRCAN, Parks Canada, State of Alaska, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS, NRCAN, Parks Canada

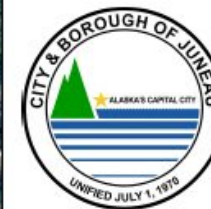


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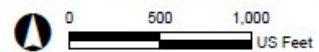
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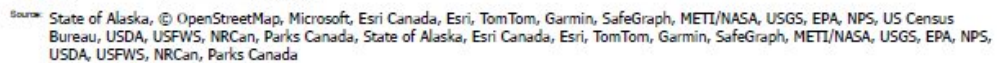
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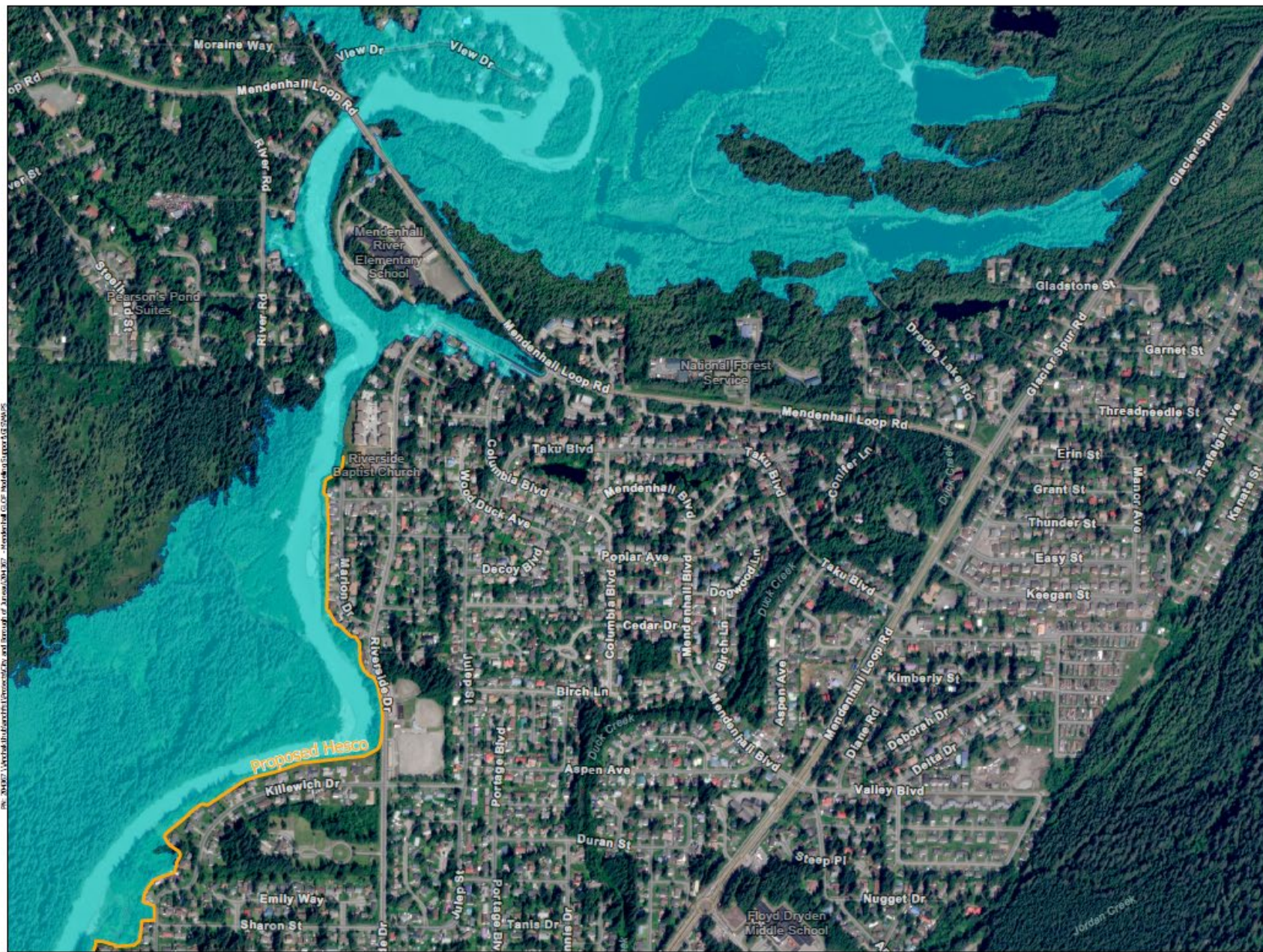


Source: State of Alaska, © OpenStreetMap, Microsoft, Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, NRCAN, Parks Canada, State of Alaska, Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS, NRCAN, Parks Canada

The logo of the City and Borough of Juneau is a circular seal. It features a green mountain peak on the left, a yellow star in the center, and blue horizontal stripes representing water on the right. The text "CITY & BOROUGH OF JUNEAU" is written in a circle around the top, and "UNIFIED JULY 1, 1970" is written around the bottom. The words "ALASKA'S CAPITAL CITY" are written in a smaller font across the middle.

This aerial map of Mendenhall Valley, Alaska, illustrates the Mendenhall River and its surrounding infrastructure. The river, highlighted in cyan, flows from the top left towards the bottom left, eventually emptying into the Mendenhall Glacier. Key roads shown include Mendenhall Loop Rd, Taku Blvd, Mendenhall Blvd, Columbia Blvd, and various local streets like Moraine Way, View Dr, and Killewich Dr. Landmarks such as Mendenhall River Elementary School, National Forest Service, and Riverside Baptist Church are labeled. The map also depicts the Mendenhall Glacier and surrounding forested areas.





Flood Fighting Inundation Maps Mendenhall Valley, Juneau, AK

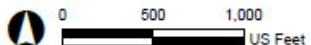
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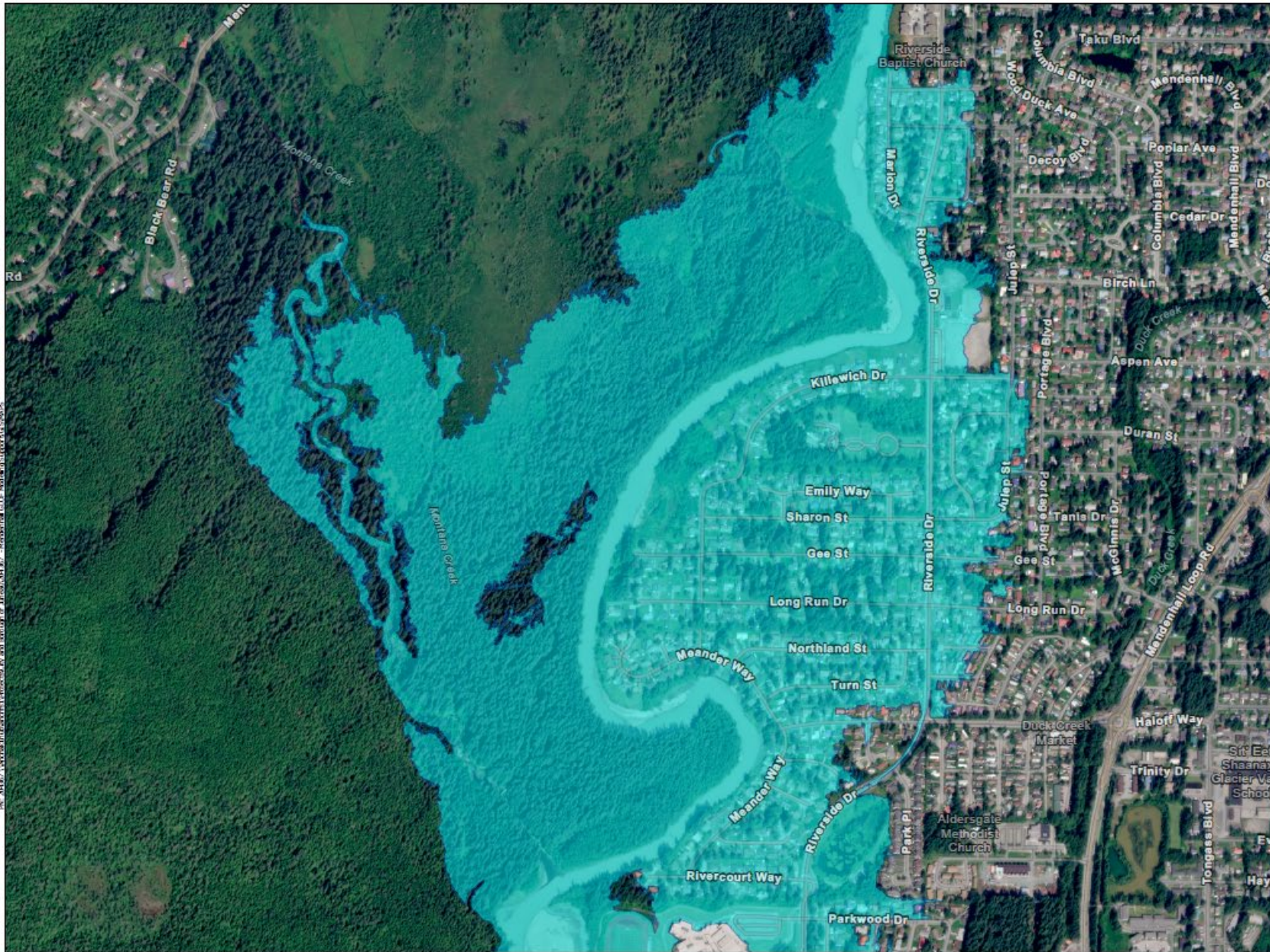
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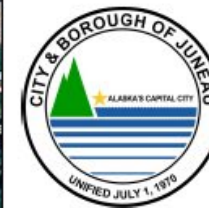


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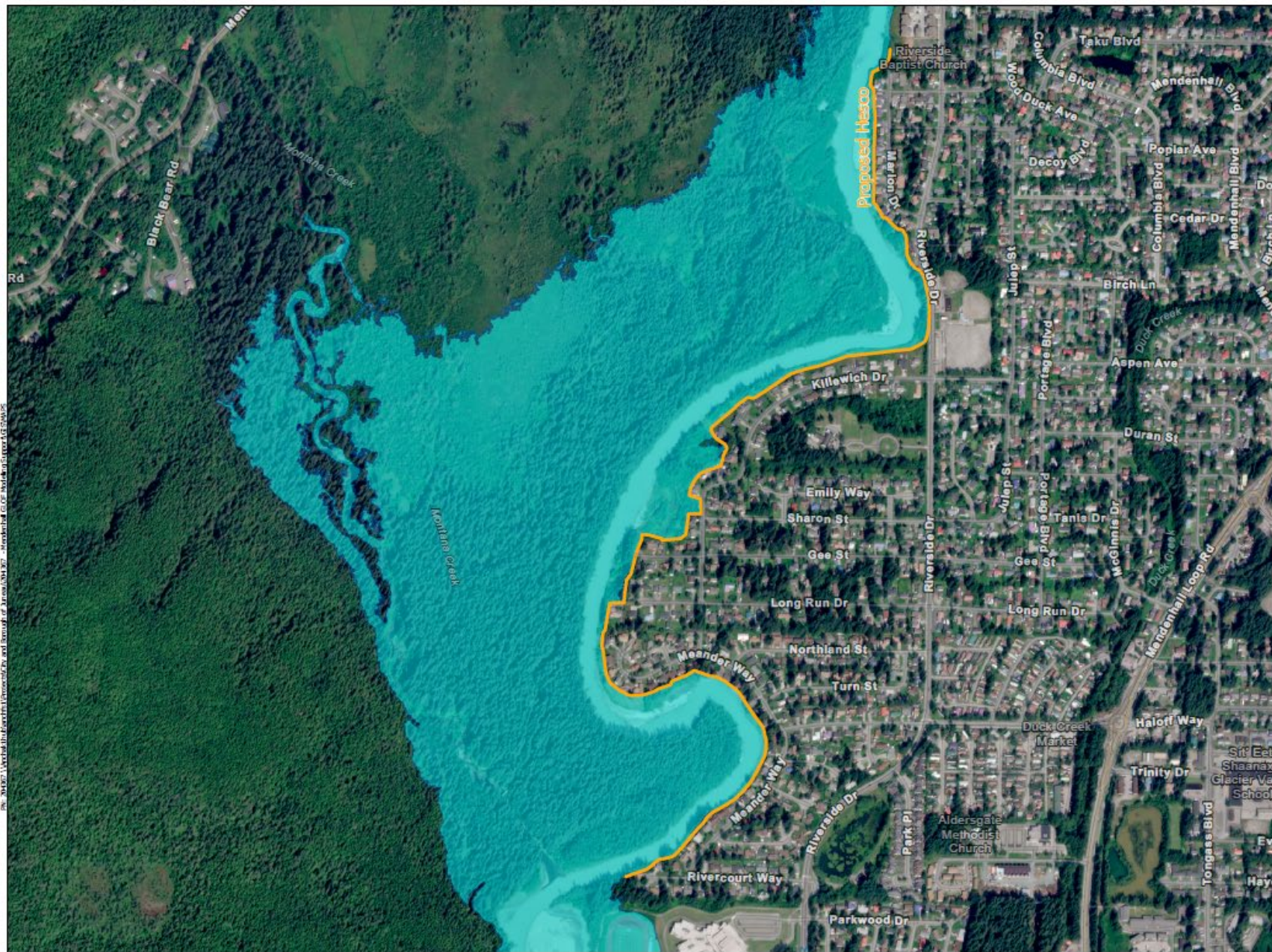
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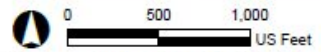
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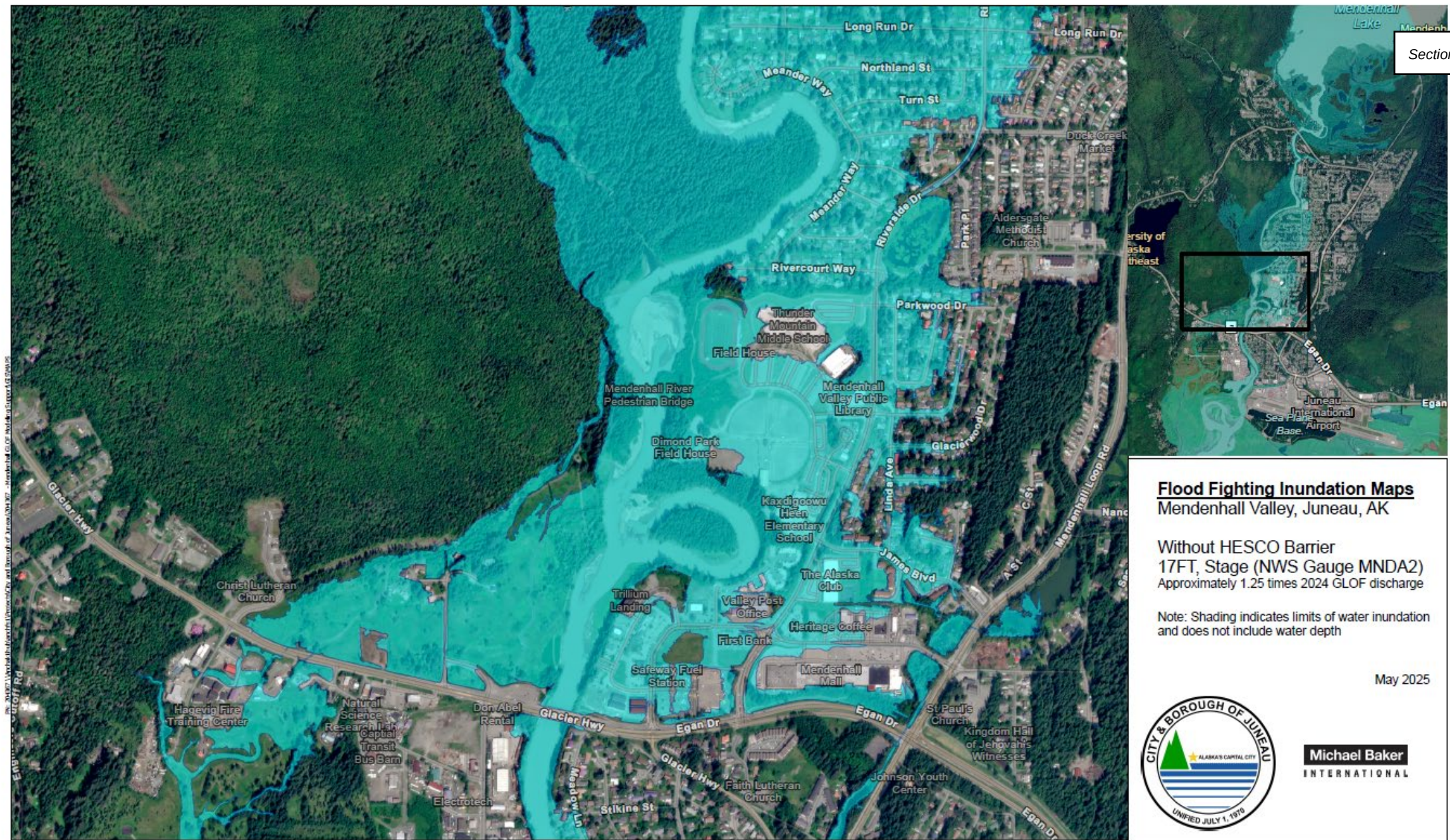
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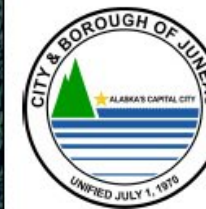


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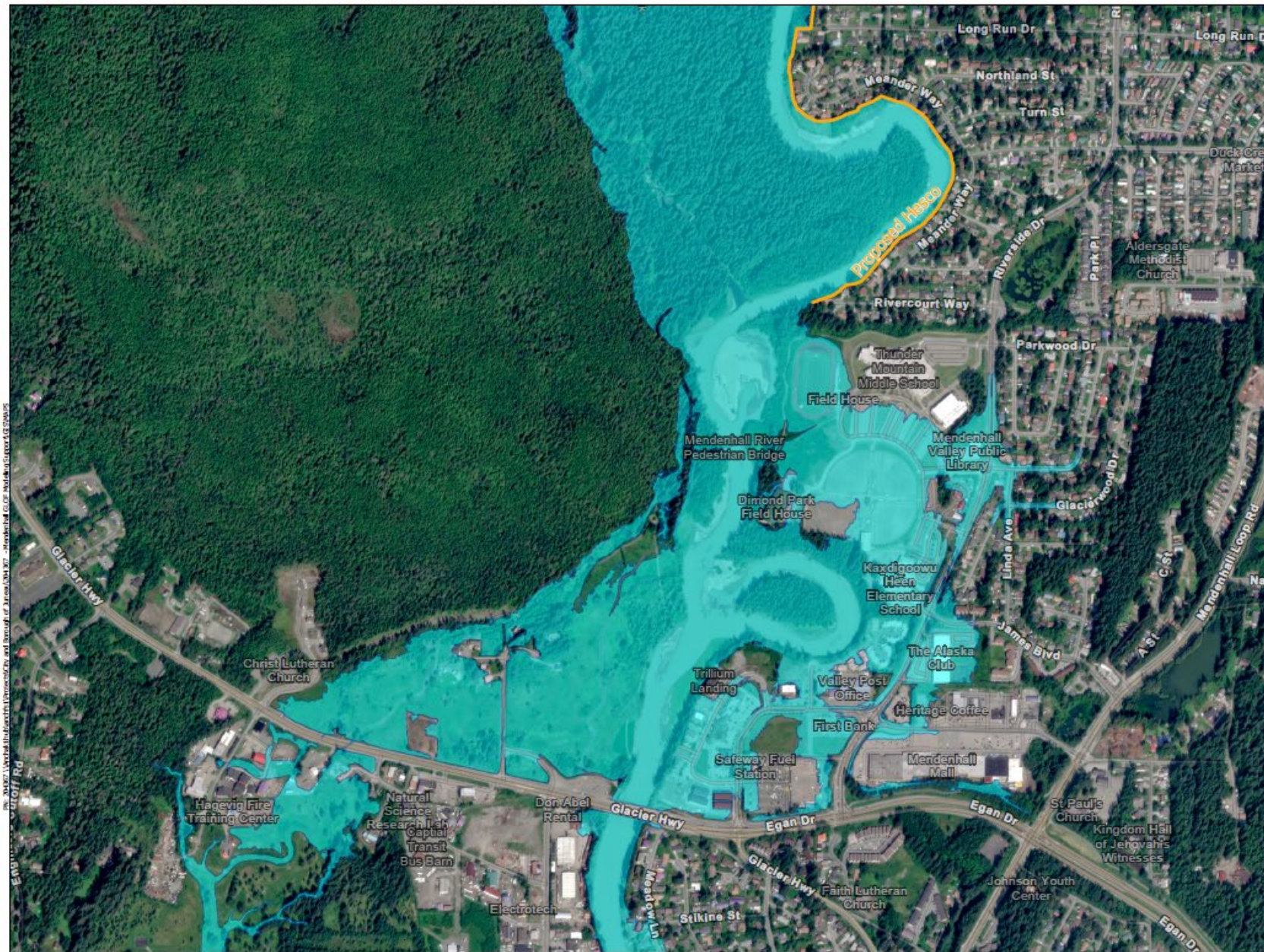
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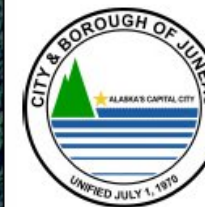


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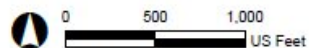
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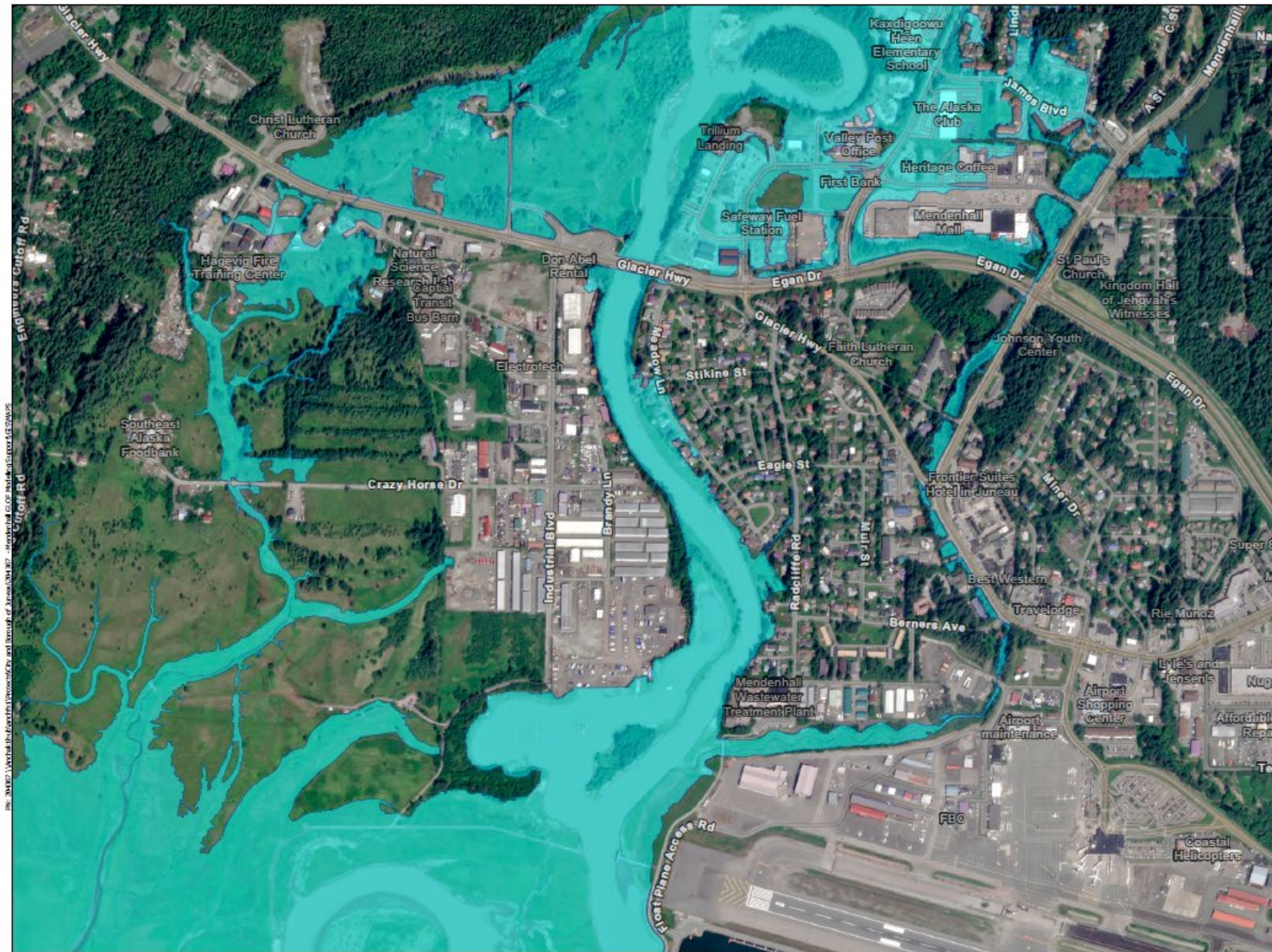
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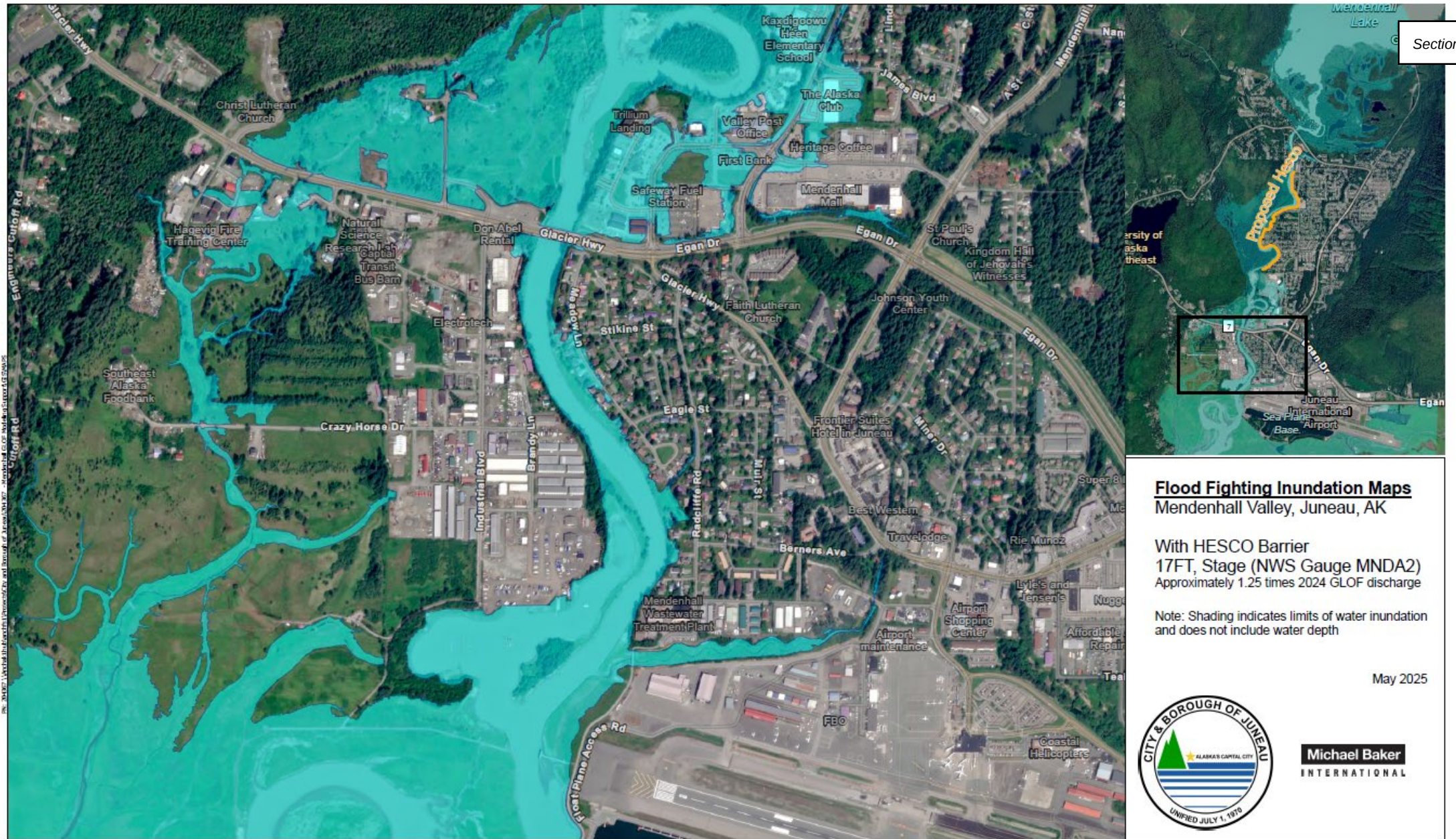
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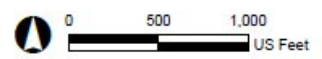
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Juneau Glacial Flood Dashboard BETA

NWS: No Active Alerts

Home

Flood Maps

Flood Forecasting

Flood Events

Suicide Basin

Flood Maps

Flood Forecasting

How to understand flood forecasts based on gage heights & image data.

Flood Events

Level at Mendenhall	Peak Water Level Flow Rate (cfs)	NWS Impacts
	13700	—
	9730	Record. widespread
	7510	Minor Flood Stage
	25200	Action Stage
	12400	Major Flood Stage
	7730	Flooding on Skagway over View Dr.
		Minor flooding at Center

Suicide Basin

About

This tool provides mapping of flood impacts, real-time visuals of water levels, and insights about glacial lake outburst floods (GLOFs) from Suicide Basin. Use the cards above to explore live flood maps, forecasts, past events, and context on how these floods happen and impact the Juneau area. For the National Weather Service Suicide Basin monitoring page click below.

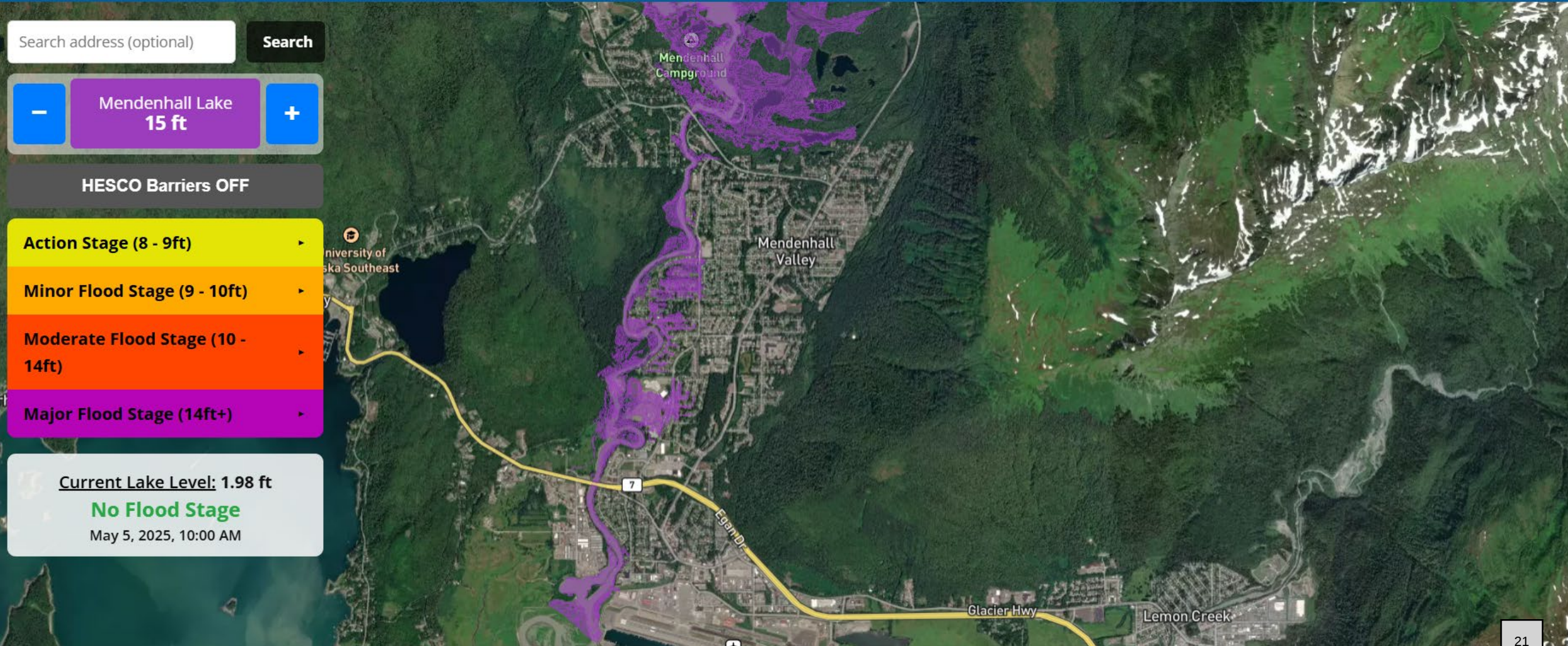
[NWS Monitoring Page](#)



Juneau Glacial Flood Dashboard BETA

NWS: No Active Alerts

Home Flood Maps Flood Forecasting Flood Events Suicide Basin





NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



Local forecast by
"City, St" or ZIP code

Enter location ...

Go

[Location Help](#)

News Headlines

- On May 25th, 2025 there will be changes to the river forecast services for the Alsek River near Yakutat, Salmon River near Gustavus, and Falls Creek near Petersburg. [Click here to see the Public Info Statement regarding these changes.](#)
- A gale force front is moving through the panhandle, bringing more wind and rain to SE AK Monday. [Click here for the latest Forecast Discussion...](#)

Suicide Basin

[Weather.gov](#) > [Juneau, AK](#) > Suicide Basin

Juneau, AK

Weather Forecast Office

[Current Hazards](#) [Current Conditions](#) [Radar](#) [Forecasts](#) [Rivers and Lakes](#) [Climate and Past Weather](#) [Local Programs](#)

Suicide Basin Monitoring and Current Conditions

Suicide Basin is a side basin of the Mendenhall Glacier above Juneau, Alaska. Since 2011, Suicide Basin has released glacier lake outburst floods that cause inundation along Mendenhall Lake and River annually with a record major flood event taking place on August 6, 2024. The latest release took place on October 20, 2024.

Current Status: Thursday, 4/10/2025 at 3pm.

Monitoring Equipment Status:

The USGS monitoring equipment, the cameras and laser data, will be fully up and running by the beginning of May or sooner. The [USGS laser sensor](#) is working at this time but data is coming in intermittently. The current value is 1054.56 feet. For reference when the laser was installed last year, May 24, the surface elevation was 1119 feet. Check back in the coming weeks for updates on when all of the equipment will get turned back on and how the conditions within the basin has changed.

Images from the entire 2024 season can be viewed [here](#).

Here is the [NWS summary report](#) from the major flooding event from the Suicide Basin glacier lake outburst flood in August 2024.

Additional Information available:

- [Mendenhall River Inundation Maps](#) (Follow the link, then scroll down to Gauge Location, select Activate MND2 FIM Gauge)
- [Flood Safety Tips and Resources](#)
- [Historical release data from Suicide Basin](#)
- Alaska Climate Adaptation Science Center (AK CASC) Story Map "Hidden Water: The Suicide Basin Outburst Flood"
- [The Suicide Basin glacier outburst flood: 2023 and beyond \(Recording of the Oct 27 2023 Evening at Egan\)](#)
- 2023 Season Time-Lapse Animations ([Image](#) and [Vector](#))
- 2022 Season Time-Lapse Animations ([Image](#) and [Vector](#))



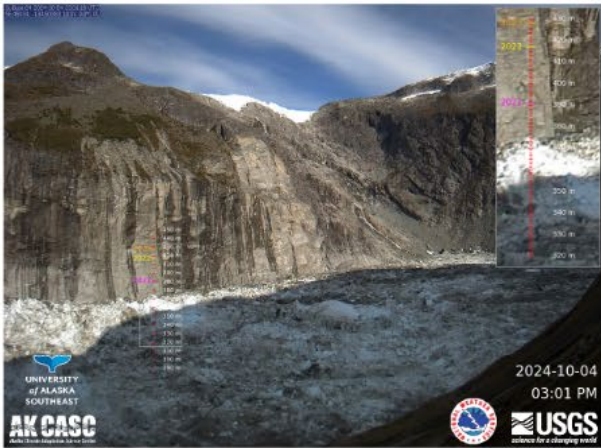
Latest Images

Hydrographs

Other Data

Latest Basin Image - Scales

Most recent image from the basin, updated at daily to sub-daily intervals (see time-stamp bottom right). The camera is placed at the basin entrance and faces northeast, into the basin. Click on image to enlarge and read basin levels.

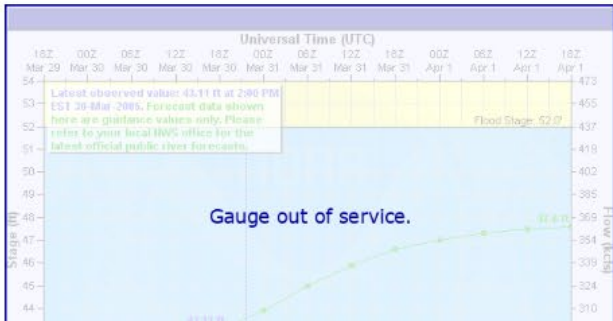


[Full Season Viewer](#)

[Recent Timelapse \(Last 15 Images\)](#)

Suicide Basin Level (Pool Height)

Graph showing the current (blue) pool height of Suicide Basin.
At this time (7/10), values are from the laser detection system.



Latest Basin Image - Vectors

Most recent image from the basin (same as on the left) with vectors indicating ice motion direction and magnitude. Click on image to enlarge.

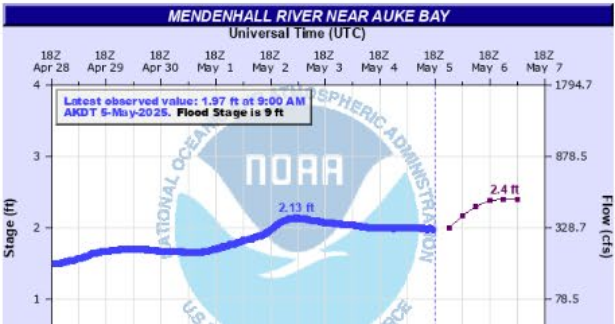


[Full Season Viewer](#)

[Recent Timelapse \(Last 15 images\)](#)

Mendenhall Lake Stage Level

Graph showing the current (blue) and predicted (purple) stage level at Mendenhall Lake. Stage levels are annotated on the left y-axis on the graph. The graph also shows the Mendenhall River discharge (right y-axis), which is derived from the Mendenhall Lake stage level via rating curve.



Resources

CBJ Inundation Map Website:

<https://bit.ly/MendenhallFloodMaps>

UAS Juneau Flood Website:

[COMING SOON](#)

NWS Mendenhall River Monitoring and Forecast:

<https://www.weather.gov/ajk/suicidebasin>

CBJ Flood Response Website:

<https://juneau.org/manager/flood-response>

Community Emergency Response Team Training (CERT)

June 14, 21 & 28th 9PM-4PM: [https:// www.GenerationsSoutheast.org](https://www.GenerationsSoutheast.org)

Section E, Item 1.



Scan to sign up for
CBJ Emergency Alerts
(bit.ly/CBJAlerts)



Mendenhall Valley Flood Fighting Inundation Maps

MAY 8, 2025

The City & Borough of Juneau published updated flood fighting inundation maps for the Mendenhall Valley for glacial lake outburst floods (GLOF). The maps are the result of hydrologic and hydraulic (H&H) analysis and modeling performed by Michael Baker, International (MBI) and reviewed by relevant federal agencies, as well as the University of Alaska, Southeast. The series of maps provides visual flood inundation extents for GLOF discharge events ranging from 8ft – 20ft flood levels. The maps also demonstrate the effectiveness of the Phase 1 HESCO barrier project, as indicated on the 14ft – 18ft maps. **PDF versions of the maps are now available at bit.ly/MendenhallFloodMaps.**

The H&H study and resulting maps will also inform Juneau residents, first responders, local businesses, governments and agencies of the potential flood inundation extents for future glacial lake outburst flood (GLOF) events, and guide mitigation and preparedness efforts.

A [Special Topic Assembly Committee of the Whole meeting](#) with subject matter experts will be held at 12 p.m. on Monday, May 12.

- For a more detailed and technical review of the modeling and mapping process from the experts and agencies behind the maps, visit: <https://youtu.be/-rJcRhvPZwA> (VIDEO)
- Sign up for CBJ alerts, including flood preparedness alerts and updates, [here](#).
- For questions or comments about the flood fighting inundation map project, please email floodresponse@juneau.gov.
- Visit [CBJ Flood Response webpage](#) for more information on CBJ's ongoing flood response efforts.
- The CBJ also strongly encourages homeowners in flood prone areas to purchase flood insurance through the National Flood Insurance Program (NFIP). Visit FloodSmart.gov to get a quote under the NFIP.

Frequently Asked Questions

Phase 1 HESCO Barrier Project

Do the maps show the effectiveness of the HESCO Barriers as configured?

Yes. The model demonstrates the effectiveness of the Phase 1 HESCO barrier project in protecting property and structures from flood events comparable to that experienced in August 2024.

The preliminary maps include modeling with the Phase 1 HESCO barrier project. Do they show that the HESCO project will cause increased flooding impacts to developed areas downstream or outside of the protected project area?

No. The modeling did what we hoped it would do in that it provided clarity regarding the effectiveness and the proposed layout of the HESCO barriers (Phase 1). For flood levels that CBJ believes are probable in the shorter

term (16ft flood stage or slightly higher), the model and maps show that the Phase 1 HESCO barrier is effective at preventing inundation in the protected area. They also show negligible upstream and downstream effects for these flood levels. At the 18ft flood stage flood level, the maps show the likelihood of water inundating areas *beyond* the extent of the Phase 1 HESCO barrier project, and then potentially backflowing into some neighborhoods along the river. CBJ is actively evaluating mitigation solutions for this possibility.

This 18ft flood stage flood level modelling with HESCO barriers exemplifies exactly the information the CBJ needs to further inform flood fighting. With this information, the CBJ is investigating alternatives and opportunities for proposing the next deployment of HESCO barriers protect the next highest vulnerable areas from floodwater inundation.

What was the basis for the height of the Phase 1 HESCO installation?

Barrier height was established to provide approximately four feet of added protection above the inundation levels seen along the river during the 2024 GLOF. This information was gleaned from observed high water marks and validated during the hydrologic and hydraulic modeling.

Why aren't the HESCO barriers shown on the 19 ft and 20 ft inundation maps?

The Phase 1 HESCO barrier height was established based on data collected from the 2024 GLOF event specifically and was not designed to align with a specific lake stage flood elevation. Upon completion of the Phase 1 HESCO installation, a detailed horizontal and vertical survey of the completed Phase 1 HESCOs will be conducted and modeled at the 19 ft and 20 ft to provide much better detail and clarity to the effectiveness at these increased heights.

Glacial Lake Outburst Flood (GLOF) Magnitude

My property shows flooding at 17ft or 18ft. Does CBJ or the National Weather Service believe we are likely to experience a flood of that height this year?

Not necessarily. GLOF events from 2023 and 2024 indicate the possibility of annual floods with increasing magnitude. Additionally, studies of Suicide Basin point to increasing capacity within the basin. With existing mapping limited to a 16ft flood stage, CBJ and our partners believed it was in the best interest of the community to create additional maps up to a 20ft flood stage GLOF event.

When will we know the flood height for this year's potential GLOF? How can I stay up do date with flood predictions?

The National Weather Service (NWS) Suicide Basin Monitoring website provides the most up-to-date tracking of lake, river and basin levels. That is also where you will find flood alerts and informational statements.

CBJ is working with NWS to develop a comprehensive communication plan to provide clear, consistent updates before and during a GLOF event. This includes improving the timing and content of early warnings, using the CBJ Alerts system, and coordinating public messaging across agencies to ensure that everyone has accurate information on flood timing, expected impacts, and protective measures.

How likely is a 19ft or 20ft flood event with impacts as shown in the 19 and 20ft maps?

After extensive discussion with NWS, University of Alaska Southeast (UAS), US Army Corps of Engineers (USACE), and industry experts, it is believed that 19ft and 20ft flood events are unlikely to occur in the near future. To model these events, Michael Baker, International (MBI) assumed a convergence of unlikely flood contributors occurring simultaneously. For the case of a 20ft event, this included a constant 20ft tide for the duration of flooding, a 200-year rainfall event, and a Suicide Basin release over twice as large (by volume) as the 2024 GLOF.

Can future GLOF sizes be predicted?

Predicting the likelihood of the size of any GLOF release more than a couple days in advance is not possible. Uncertainties regarding the mechanism of basin release, as well as the volume and configuration of Suicide Basin remain, including the amount of basin capacity hidden beneath the Mendenhall Glacier. USGS, NWS and UAS do their best to predict the timing of the GLOF release, provide advance public warning statements and attempt to estimate the size of the flood event from the data they collect that monitors Suicide Basin. The CBJ continues to support the scientists at USGS, NWS and UAS in their research to better define Suicide Basin and will continue to pass on any new information that will help.

How can I determine the depth of water in the inundation zone?

UAS is developing a website that will provide interactive features for flood inundation information, including identifying depth of inundation at specific locations for different flood stage events. The underlying data for these maps is based on the modeling performed by MBI. While UAS plans to have this interactive map website available well before the next GLOF, CBJ is releasing static PDF maps in order to get the inundation information to the public as soon as possible. When the UAS website is available, CBJ will provide links on our [inundation map](#) and [flood response](#) web pages.

About the Inundation Maps

How were the inundation maps prepared and by whom? Who reviewed them for accuracy?

After the 2024 GLOF, and through extensive coordination with Federal, Tribal, State and other local technical experts and stakeholders, it became clear that CBJ was in the best position to facilitate the development of new maps in a timely manner (prior to the expected 2025 GLOF season). In November 2024 CBJ awarded a contract for hydrologic and hydraulic (H&H) analysis and modeling of Suicide Basin GLOF related activities in the Mendenhall Valley to Michael Baker, International (MBI), a major engineering and consulting firm with extensive H&H expertise and an Alaska presence. Over the last several months, the flood fighting maps were developed with the continued review by our expert partners (US Army Corps of Engineers, National Weather Service, US Geological Survey, University of Alaska Southeast, and more).

For a more detailed and technical review of the modeling, mapping and review process from the experts and agencies behind the maps, visit: <https://youtu.be/-rJcRhvPZwA> (VIDEO).

Why did CBJ publish inundation maps, as opposed to the National Weather Service (NWS) or another agency?

The CBJ expedited the river modeling and production of the inundation maps to inform the community of the potential flooding at river stages above what occurred during the 2024 GLOF. Through the CBJ's emergency procurement processes, the river modeling hydraulic and hydrologic experts at MBI were hired to complete the inundation maps in a much faster process and timeline than the NWS would have been able to achieve. The maps were completed following the standards set for NWS Inundation Maps and have been reviewed and accepted by the NWS as new maps to update the current inundation maps from 2015.

Why are there differences between the new inundation maps and those published by the National Weather Service?

The model that was developed to create the maps relied upon the most up-to-date data available from all primary sources. Although the NWS maps have proved extremely useful during the 2023 and 2024 GLOF events, the new maps incorporate changes in the topography of the river and surrounding areas.

Will CBJ update the maps after every major GLOF disaster?

Although CBJ was in the best position to provide updated maps due to timing constraints in advance of a possible 2025 GLOF, it is anticipated that the NWS will retain overall responsibility for updating, creating, and publishing future inundation maps.

The new 16 ft inundation maps are inconsistent with what happened at my property during the August 2024 glacial lake outburst flooding. Why is that the case?

The new 16ft maps are intended to reflect the likely outcome of a 16ft flood stage GLOF event if it were to happen now, not the inundation associated with historical events. These maps were calibrated for consistency to match up with confirmed high-water marks from the 2024 GLOF event. The 16ft model was also run with an extreme high tide of 20 ft as a constant, creating more water inundation than during the cyclic ~16.5ft tide peaking at 2:45 AM August 6. However, even with the latest data available, due to the changes that occurred within the river during the 2024 GLOF, as well as the significant number of variables that impact the overall flood extent across such a large area, there are locations that will not match up exactly with what was seen during the 2024 event.

How were other flooding factors (tides, rainfall events) considered in the flood models?

All flood scenarios included tidal and rainfall factors. For each scenario, the model was run at a constant tide of 20ft. This is 3.7ft above Mean Higher-High Water (MHHW). This also ensures compliance with NWS's 2015 Mendenhall River Inundation Study.

Rainfall events were considered when developing the model, up to a 200-year event. Given the uncertainty in predicting the large volume of flood water coming from Suicide Basin, any rainfall event would be minor compared to the volume and intensity of the GLOF release.

Flood Preparedness

How is CBJ planning to use the maps and what does it mean for the community?

Sharing these maps publicly puts information in the hands of private citizens, local businesses, first responders, and government agencies for flood preparedness, response, and mitigation purposes. Additionally, existing maps were limited to a 16ft flood stage, and this initiative allowed for the creation of additional maps up to a 20ft flood stage GLOF event.

How is CBJ preparing for flooding outside of the Phase 1 HESCO project area?

CBJ is taking a coordinated multi agency approach to flood preparedness and fighting beyond the Phase 1 HESCO barrier project area. In partnership with Tlingit & Haida, National Weather Service (NWS) and State of Alaska, CBJ is refining evacuation and operation plans, ensuring emergency shelters are well prepared and supported, and identifying strategic staging areas for materials like sandbags.

CBJ is working with NWS to develop a comprehensive communication plan to provide clear, consistent updates before and during a GLOF event. This includes improving the timing and content of early warnings, utilizing the CBJ Alerts system ([sign up here](#)), and coordinating public messaging across agencies to ensure that everyone has accurate information on flood timing, expected impacts, and protective measures.

The CBJ also strongly encourages homeowners in flood prone areas to purchase flood insurance through the National Flood Insurance Program (NFIP). Visit [[FloodSmart.gov](#)] to get a quote under the NFIP.

In addition to the emergency preparedness above, the CBJ is using the modeling and inundation mapping to inform the prioritization for the next HESCO barrier deployments. The valuable information provided by the mapping and modeling will be presented to the US Army Corps of Engineers (USACE) and other funding agencies to validate the need to continue flood fighting with HESCO barriers.

How is CBJ preparing for a 17 ft or higher flood event?

CBJ's first and best flood fighting tool for reducing flood impacts is the Phase 1 HESCO barrier project. However, in the event of GLOF of a similar or greater scale to years past, additional preparations are necessary. CBJ is working with the National Weather Service, CCTHIA (Tlingit & Haida) and the State of Alaska to strengthen emergency operation and response plans, ensure emergency resources are well prepared and staged, and coordinating with partner agencies to protect infrastructure and direct response efforts where they are needed most.

In addition to the emergency preparedness above, the CBJ is using the modeling and inundation mapping to inform the prioritization for the next HESCO barrier deployments. The valuable information provided by the mapping and modeling will be presented to the USACE and other funding agencies to validate the need to continue flood fighting with HESCO barriers.

How can I prepare for a 17 ft or higher flood event?

The most important step a homeowner can take to prepare for the next GLOF is to purchase flood insurance through the National Flood Insurance Program (NFIP). CBJ also encourages residents to [sign up for CBJ Alerts](#) to receive real time notifications and stay informed through official sources. For homeowners interested in sandbagging their properties, the CBJ will be providing sandbags available for public use this spring. The CBJ Alert system is the best way to stay informed on this and other emergency preparedness efforts.

In addition to purchasing coverage through NFIP at FloodSmart.gov, residents of the affected area should develop a personal emergency plan, be familiar with evacuation routes, and assemble a go bag any essential supplies.

How do the maps support a long-term mitigation solution?

These maps and the model that generated them have been shared with the US Army Corps of Engineers (USACE) as a part of their efforts to study the GLOF problem and identify long-term solutions. CBJ is working closely with USACE to ensure the maps and model streamlines the efforts to get to the long-term solution.

Who can I contact if I have questions about the maps?

Questions can be directed questions to floodresponse@juneau.gov. Our team will direct your question to the most appropriate subject matter expert.

Residents are also welcome to send questions to [Assembly member\(s\)](#) ahead of the Special Topic Assembly Committee of the Whole meeting scheduled for Monday, May 12 at 12pm ([See meeting details](#)).



Engineering and Public Works Department
155 Heritage Way
Juneau, Alaska 99801
Telephone: 586-0800

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
+ \$2.18 Million	Budget remaining after Phase 1 HESCO Barrier installation
- \$1.35 Million	Cost for Phase 1A and 1B
+ \$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

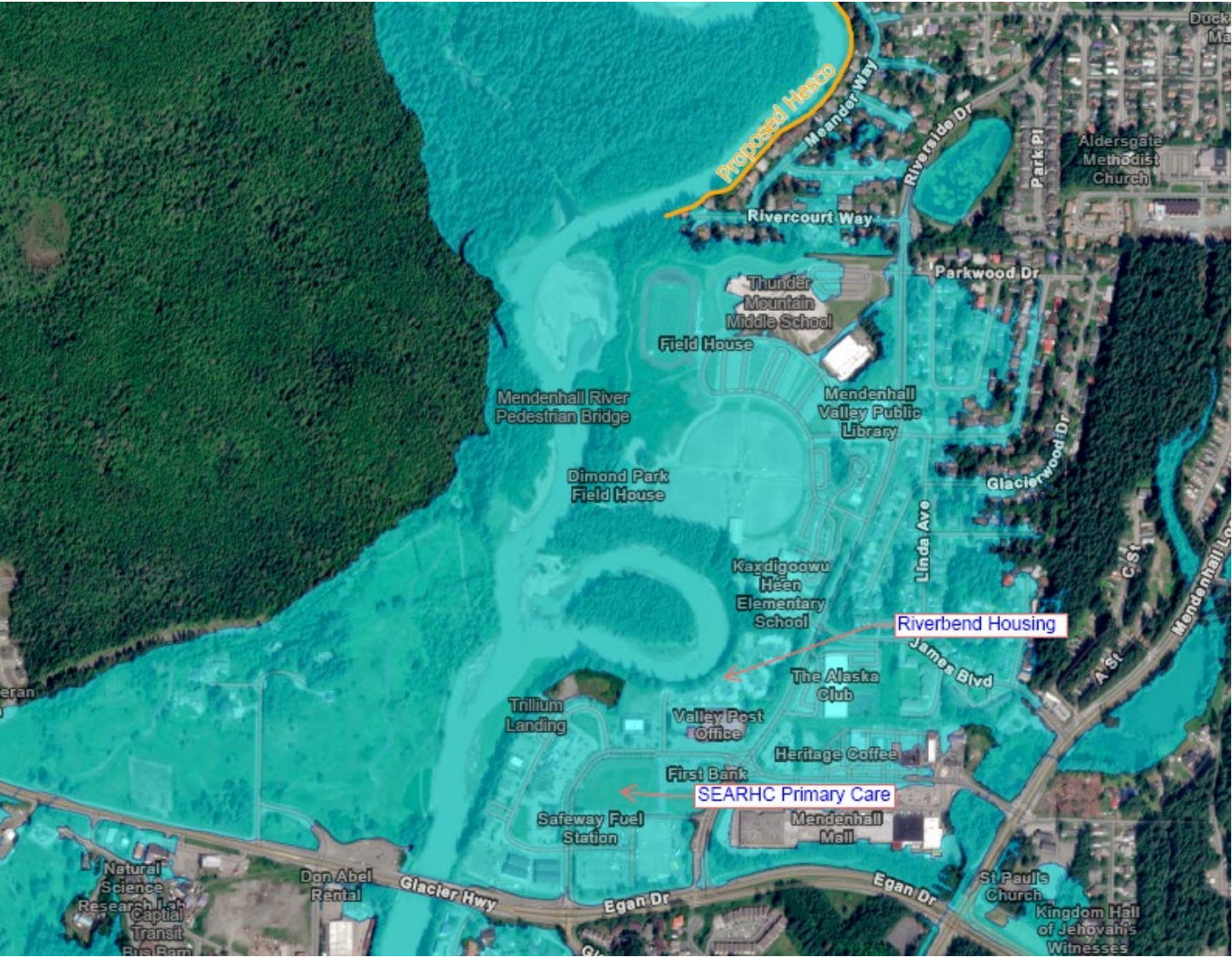


Figure 1b. - 17FT Flood Inundation Map Dimond Park Area

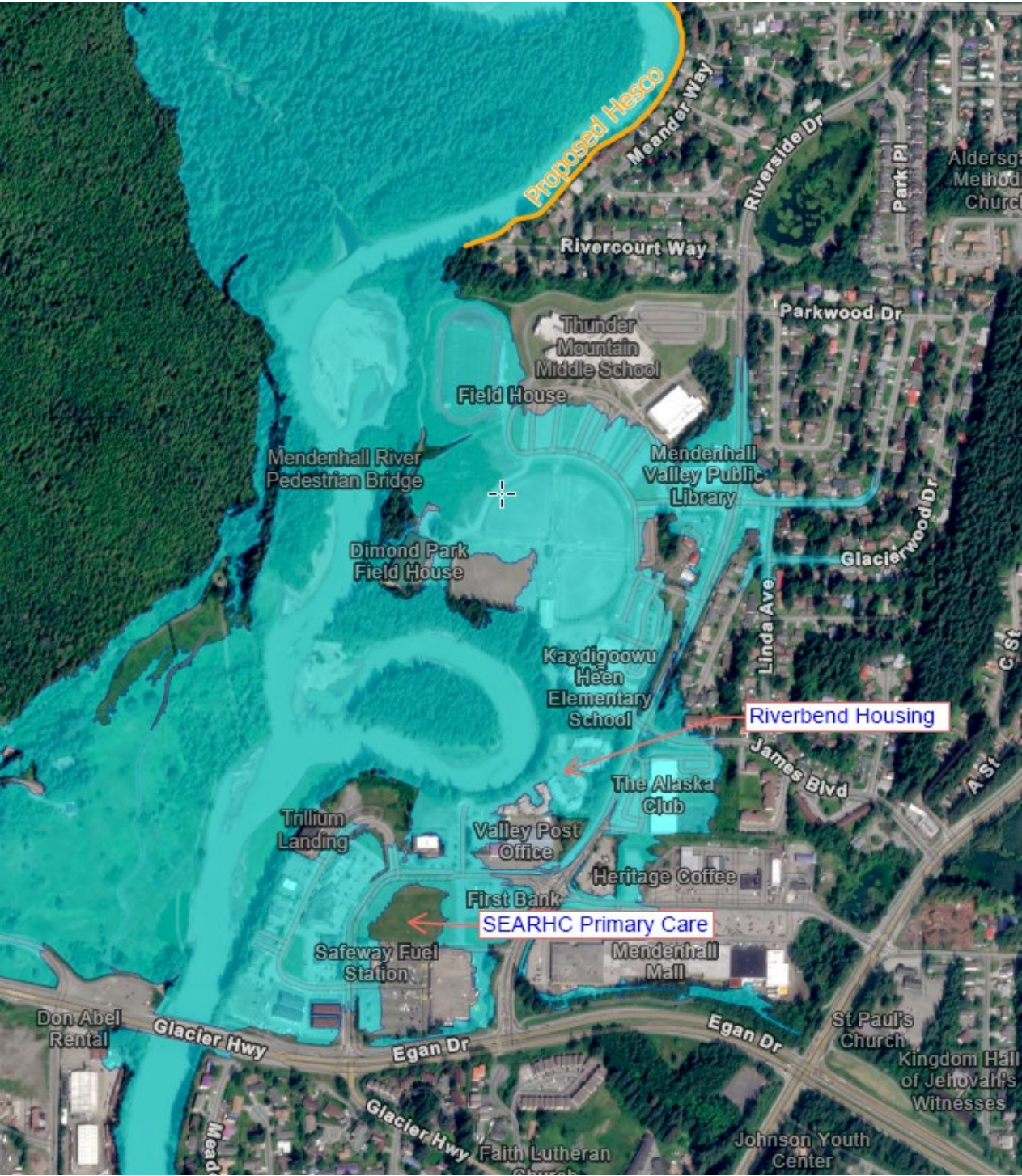


Figure 2. HESCO Phase 1A Inundation Protection at 18 FT

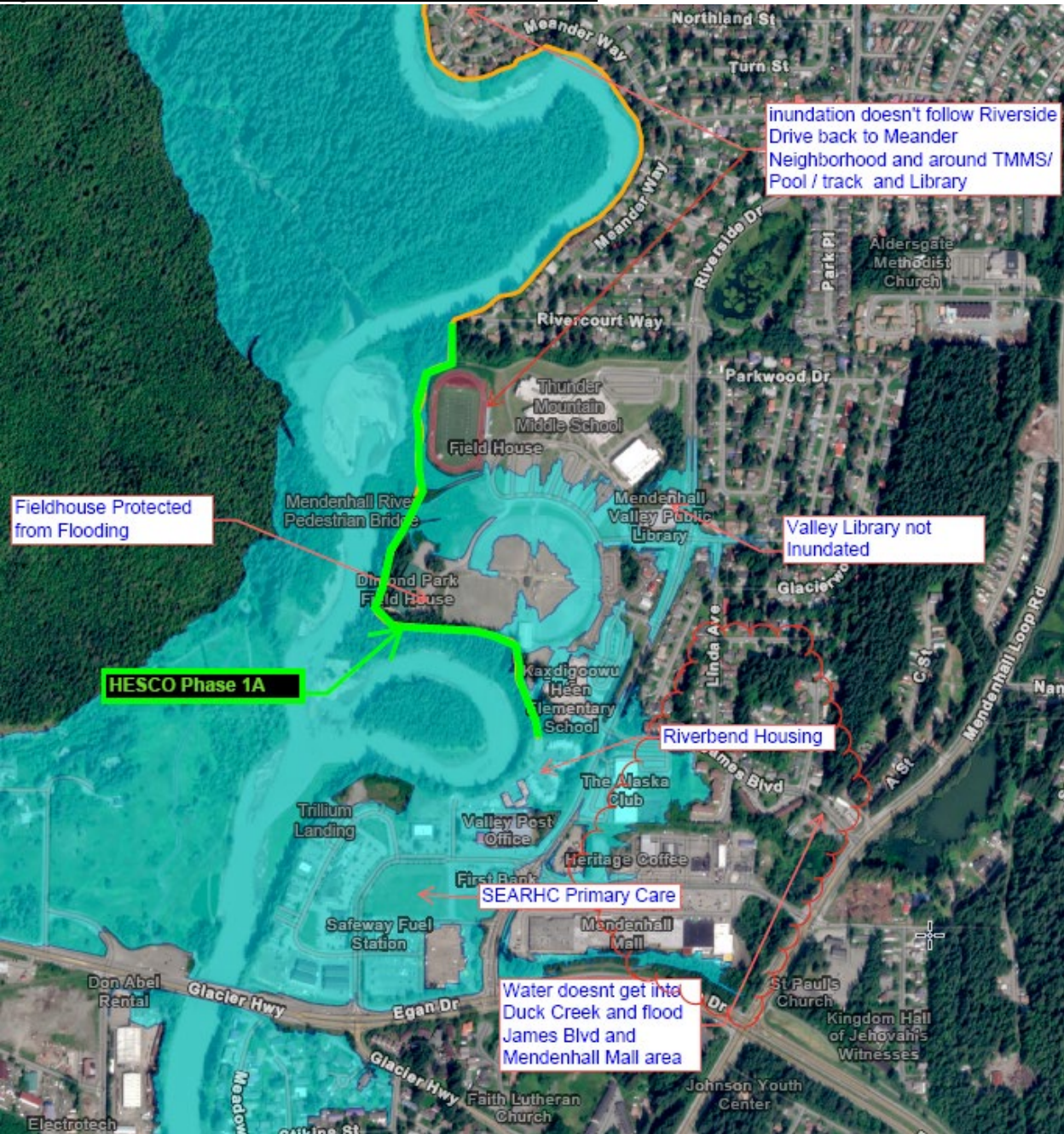


Figure 2. HESCO Phase 1B Inundation Protection at 18 FT

