Laurie Craig, May 6, 2022

COMMENTS on DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR MENDENHALL GLACIER VISITOR FACILITIES IMPROVEMENT PROJECT Juneau, Alaska

Thank you for providing the public with the opportunity to comment on significant development plans set forth in the Mendenhall Glacier Visitor Facility Improvements Project.

I have devoted several hours per day since March 4, 2022 to reading the Draft Environmental Impact Statement (DEIS) and the supporting documents included on the Forest Service's project website.

As a retired US Forest Service park ranger (2004-2018) at Mendenhall Glacier Visitor Center, my familiarity and respect for the place and visitors obliges me to offer detailed comments based on my experience.

At times, the volume of material is overwhelming. However, the proposed impacts are far more overwhelming and devastating to the natural areas the National Environmental Policy Act (NEPA) envisioned protecting and evaluating with its regulations. There is some faulty information in the material. I will address these errors and omissions in a detailed, categorical manner. First, I'd like to speak generally about the plans.

Two years ago, hundreds of people commented that the proposals would be so significant as to render the Mendenhall Glacier Recreation Area a tourist theme park. To accommodate millions of cruise ship visitors over the next thirty years, the natural environment, its wildlife, and the non-cruise ship humans who use it would be suppressed in favor of one user group: short-term visitors traveling on cruise ships. While I embrace our role as a host city, I do not support displacing all others who love and need Mendenhall Glacier Recreation Area.

Fortunately, the Forest Service listened. A new alternative — Alternative 4 — has been introduced in the DEIS. Thank you for producing a better version of using the land and water with fewer impacts. Alternative 4 eliminated motorized commercial tour boats and three industrial-grade docks from the lake. This aspect is the most intrusive and egregious proposal. Alternative 4 likewise eliminates the fool's errand of a Remote Visitor Center with expensive support facilities placed in a dangerous, unstable location. Additionally, Alternative 4 reduces impacts to bears by reducing platforms and eliminating trails immediately adjacent to the Steep Creek critical bear habitat. It softens the effect of parking and bus loading zones. Unfortunately, it does not offer a less intrusive Welcome Center. Needs cited in the Purpose and Need can be satisfied in a more appropriate manner with a smaller facility that would be more carefully and respectfully sited.

I sincerely hope Alternative 4 is not merely pandering to an angry populace who want a balanced plan that serves Juneau residents as well as visitors.

Alternatives 2 and 3, and aspects of alternative 4 contribute to immediate vicinity climate change impacts through emissions from increased permitted activities. These activities must be curtailed, reduced, and/or eliminated. **I disagree with statements that Alternatives 2 and 3 would have "moderate" effects; they would have major, significant and adverse effects**. (page S-6)

The magnitude, complexity, and scale of the proposals overwhelm and obliterate visitors' reasons to be at the glacier and in MGRA. The project has generated multiple negative comments objecting to plans that displace wildlife, harm the natural environment, and overwhelm other users, preventing them from enjoying the visitor experience. The project has

created significant controversy and contributed to negative responses to Juneau tourism which should not be the result of plans to host guests in Juneau.

PURPOSE AND NEED

The Purpose and Need statement must be revised to include and acknowledge resident and Alaska Native usage, not merely support for the tourism industry. Residents create the diverse economy of Southeast Alaska as well as one industry. Our businesses rely on neighbors as well as visitors. The wording completely ignores the steady local use of trails and the existing visitor center by residents.

The proposed alternative (#2) overestimates the need of serving increased visitation. The project causes harm to the wildlife and fish that create the essential life of the area and that attract visitors in the first place. A simpler, less environmentally harmful alternative can be implemented. Many aspects of Alternative 4 can resolve the concerns, except the Welcome Center Complex which needs to be revised, reduced, and relocated, and boat facilities eliminated.

WELCOME CENTER

The function of the Welcome Center is to provide a warm place to wait for buses and to use the restroom. A sideline is cafe food. A potential usage is a rental event venue.

- Restrooms and a warming building can be achieved in a location that does not block the view for all other glacier visitors.
- Relocate the Welcome Center to a site that does not block the view.
- Redesign the Welcome Center to blend with the landscape as architect Linn Forrest, Sr., did when he designed the original visitor center.
- Eliminate a cafe. No food should be available due to the potential of attracting currently neutrally-habituated bears and converting them to food-conditioned bears. By eliminating a food service, putrescible waste and garbage would be reduced; there would be no need to post staff at the exits to prevents guests from departing with food.
- Eliminate a rental venue which competes with public and private facilities in the same business.
- No food area and no rental space reduces the size needed for a new building

As an option, please see my drawing of a new design that replicates Mr. Forrest's building: perches on the hillside currently used as an accessible ramp above the existing outdoor restrooms; does not obstruct the view of the glacier as the proposed Welcome Center would do; accomplishes the purpose and need to provide comfort for visitors; maintains well-established habitat essential for wild bears; provides better protection from weather than the proposed Welcome Center site.

- Because only one building design with complete floor plans has been shown in three alternatives (except no action), the Welcome Center fails to meet the requirements of NEPA to offer alternatives.
- The sole Welcome Center proposal suggests the Forest Service has pre-determined the architectural firm, the floor plan, the location, and committed significant funds to one plan without valid consideration for alternatives.
- No rationale or justification is given for dismissing the hillside location which was proposed in scoping plans; the pavilion site was not considered during scoping, therefore the public was unable to comment or object to that site in earlier iterations of project plans.

- During the March 31, 2022 MGRA project webinar, a Forest Service official said the hillside location was dismissed because it would inappropriately conflict with the design of the existing visitor center. No professional judgment has been presented as a basis for that opinion. Thus, we are unable to refute or contradict particular aspects of a historical professional's determination.
- Section 106 of the National Historic Preservation Act (NHPA) requires consultation with the State of Alaska Historic Preservation Office. Yet the DEIS states this involvement would be done at some future date. NEPA discourages decisions based on incomplete information that is critical to decision making and to the public's ability to evaluate and comment on a proposal. Because the information is not available, the Forest Service skirts the intent of NEPA by arbitrarily and capriciously dismissing a viable alternative. The agency fails to give reasons for excluding alternative locations for the Welcome Center that minimize damage to the environment, preserve scenic vistas, and protect wildlife corridors.
- The proposed 14,000 square foot Welcome Center is the approximate size of the Mendenhall Valley Public Library. The building's impact and scale on the scenery is not sufficiently portrayed.

There are reasonable alternatives that were not considered.

I agree more restrooms are needed, therefore,

- Extend restrooms farther underground in a continuous line from the present facility
- Partition them into a full summer size versus a winter section. This makes maintenance easier (close a portion for daytime cleaning during summer while using the other portion. During non-ship season, winterize a portion and use only the portion that is needed.)
- Build an enclosed or covered entry for visitors waiting in line
- If the Welcome Center is built on the hillside, incorporate restrooms and a bank of elevators or an escalator into the same underground zone to access the hillside facility.
- Design the hillside welcome center to have essential elements at ground level: restrooms, bookstore, access to above levels, and inside waiting areas.
- Build a retaining wall on the east shore of the kettle pond so the main sidewalk can be widened to reduce congestion.
- Keep all facilities on the east side of the front area for convenience, safety, preserving the viewshed, and protection from weather.
- Plazas are too big for Juneau's typical weather. People will not use open, windy, rainy plazas in normal conditions.
- Retain the pavilion. Do not demolish it for an extensive oversized warming hut and toilet as contemplated in Alternatives 2, 3, and 4.
- No alternatives for the welcome center have been proposed; only Alternative 1 — no action — is anything other than a single location and structure. Please see my comments under Welcome Center and Legal Issues.
- My recommendations protect bear habitat, fish passage, pedestrian safety, and minimize adverse environmental impacts.

There are alternative designs featured in other global tourist sites. A popular Irish tourist destination in County Clare is called the Cliffs of Moher. There is an award-winning visitor centre primarily underground to preserve the view. (See www.cliffsofmoher.ie) This type of visitor center would be useful with a ground floor entry and upper floors with windows (replicating the historic visitor center) and deck for viewing the glacier, waterfall, and surrounding lake, ponds, wildlife, and aurora borealis.

A hillside location negates the need for the proposed view-blocking curved bridge, a component of the proposed Welcome Center building.

PARKING AND BUSES

Buses should use the present bus parking lot for loading/unloading passengers. From that location, with a minimal, seasonal restroom/welcome center facility, guests could walk or ride a quiet electric circulator trolley to the front area for access to facilities for interpretation, learning, and trails.

The Zigzag Pond should not be filled and paved for parking.

If the bus parking lot location cannot be adapted to serve visitors, I offer the following suggestions:

Alternative 4 with modifications is the better choice than 2 and 3.

Modifications are

- Switch dropoff and loading to opposite sides of the teardrop from what is proposed in the DEIS. Place pickup on the east side because (1) people arrive early to wait for buses and need weather protection; (2) passengers disembarking buses move immediately to their destination. The mountain side offers more weather protection.
- See my hillside Welcome Center illustration which shows a cantilevered roof adjacent or affixed to the bedrock slope that would provide rain protection. Ceiling heaters such as the ferry solarium units could be added. Place several benches along the bedrock/east side.
- Separate motor coaches from shuttle buses and vans. Each vehicle category needs its own designated area to avoid overwhelming congestion and passenger confusion. This separation is done presently and makes it much easier for passengers to locate their transportation. Wayfinding improves. Vans need smaller areas. Neither vans nor shuttles need front lot access because their passengers are typically more able-bodied, as seen by their choice of transportation service. Ensure handicap access for all vehicles and be sure sidewalks are wide enough for mechanized lifts to operate.
- Remove the bump out curbs. Make curbs straight to avoid tripping hazards and to eliminate problematic snow removal. This prevents buses from protruding into traffic zones, as is depicted in the images.
- Relocate the smoking shelter and bike racks away from the front area. Place them far away from all other visitors. [These two items show me that the landscape planner has no grasp of our visitors' needs! Cigarette smoke and vaping particulates do not dissipate, even outdoors. The selected location is in the absolute heart of guest walkways where all visitors would be needlessly affected by smoke. Likewise, the bike rack needs to be relocated where riders and their equipment do not block the most key access area. Unless for special handicap needs, most cyclists are physically capable of walking from a farther bike parking area.]
- Require all transport permittees to use only electric buses and vehicles by 2030. Install a fast-charging station in the bus parking lot.
- Discontinue CBJ snow removal storage in the bus parking lot to protect fish habitat in Dredge Creek which flows into Mendenhall Lake

Retain the existing information kiosk. It is centrally located, doesn't require visitors to enter a building, and can easily be seen for quick directions and contact with a ranger and wayfinding signs. It is valuable.

Alternative 4 private vehicle lot: make it one way counterclockwise angled parking only. This improves safety, reduces the size needed for the lot, and minimizes environmental impacts.

AIR QUALITY

Air quality information is out of date and inaccurate. Section 3.10.4.3 discusses air quality measurements taken during 2018 and 2019 when summer weather was warm and relatively sunny and dry. **The worst air quality occurs on rainy days when diesel fumes from motor coaches does not escape upward.** This section cites a 2007 report mentioning that 10 or more buses lined up constitute conditions regarded as "busy days;" that is not busy conditions. This section also mentions days of 142 and 300 daily buses.

I have counted 23 buses queued and waiting alongside the road, all with diesel engines idling as they waited to access loading/unloading zones. The line of buses reached south to the Steep Creek culverts. No other vehicles were able to move due to the coaches plugging up the road's inbound lane. These situations often resulted in frustrated drivers passing in the outbound lanes, making dangerous road conditions for other drivers, pedestrians, and bears.

Heavy traffic conditions occurred frequently on Monday afternoons when four ships arrived in Juneau at noon and their compressed visitation schedules forced all tour activities into a few hours. On those days, I worked traffic to manage vehicle ingress and egress around the unregulated traffic pattern. I was affected by the concentrated diesel fumes. The day following this work, I was coughing; by Thursday, the harsh exhaust fumes gave me a sore throat. These cannot be considered 'good' air quality. It is definitely unhealthy.

Bus queues can be regulated effectively with a manager on site to not allow departing buses to line up too soon. Incoming buses must also be regulated to create a fairness and balance of traffic. MORE PARKING FOR BUSES WILL NOT CURE THIS HEALTH AND EQUITY PROBLEM. Management and regulation is the only solution. The Forest Service must control bus traffic for safety, health, NOISE, and congestion.

3.10.6 DIRECT AND INDIRECT EFFECTS

I strongly agree with this statement about the proposed action:

> "The project component with the greatest potential to impact local air quality is the increase in special use permit service days, specifically those that allow gas and diesel-powered transportation vehicles into the MGRA Visitor Center."
>
> *(Section 3.10.6.3 Alternative 2, Proposed Action, p 3-162)*

I intensely oppose increasing service days, as Alternative 2 proposes, to 49% of current use.

No hydro seeding or invasive plant species should be introduced by construction materials or activities.

FISH

Three proposed docks, motorized commercial tour boats, shoreline trails, and other access trails negatively impact salmon spawning and rearing habitat. A biological assessment must be performed on the lake and fish habitat before any decision on infrastructure or creek realignment is made.

The key damage occurs at the mouth of Steep Creek where fish gather in Mendenhall Lake before entering Steep Creek to spawn. This is also where outmigrating smolt adjust to silty glacier water from the clear natal stream water. Thus both adult salmon returning to spawn and juvenile salmon exiting for rearing in the lake (Sockeye) or swimming through the lake to Mendenhall River, its estuary, and Gastineau Channel salt water (Coho) would be adversely impacted.

Alternative 2 places a dock very close to the creek mouth which would harm fish. Trails — up to 14-feet wide which may also serve as vehicle access — from the Welcome Center and shoreline would impact the creek regardless of whether or not the trail is elevated. This is critically sensitive habitat that supports multitudes of wildlife dependent on fish: bears, otters, harbors seals, herons and other wading birds, mink, fishers, and future generations of salmon. **No docks should be built on the shoreline of the lake.** Beavers had built and maintained dams for decades in this location. The deeper water created coho rearing habitat. Recently the beavers have departed this area. Is manmade dam destruction the cause? Did Forest Service staff hasten the loss by manipulating these dams? The cause of beaver desertion of this area must be investigated.

A thorough survey of all creeks draining to Mendenhall Lake must be conducted before any projects are approved.

There are new areas serving as salmon rearing pools along the beach to Nugget Falls. This is noticeable in the slower-flowing, slightly warmer water flowing from the creeks created by AJ Falls. In 2021, Nugget Creek became diverted to flow through a 107-year-old hydropower tunnel. The 650-foot long tunnel and the entire pipeline (deteriorated) about a mile long were originally constructed to channel Nugget Creek water to the power generating plant near today's bus parking lot.

This diversion has occurred occasionally in the past. It was documented in a *Juneau Empire* article published on December 12, 1993, titled "Wandering Waterfall." Although some facts are incorrect, the information is important to know for several reasons. Currently, juvenile fish may be using the outflow from AJ Falls as rearing habitat. These new locations are where the clear water enters silty lake water. The slower rate of flow, compared to the steep rushing waterfall of Nugget Falls, means new rearing habitat may be pioneered by salmon. Because this activity is noticed by experts in accessible locations, what is occurring in other similar new areas?

Additionally, we have seen salmon attempting to spawn in the Zigzag Pond and along the shoreline where the docks are planned. Juvenile salmon are easily seen in this pond. This information needs to be documented by scientific studies with support of anecdotal observations. Also, adult sockeye salmon are seen easily as they spawn in a creek near the start of West Glacier Trail. This place is where major industrial dock facilities would be located under Proposed Alternative 2 and 3. Alternatives 2 and 3 should be permanently discarded from consideration. Alternative 4 also damages this important Steep Creek mouth zone with the Welcome Center which should not be built in the proposed location.

Neither alternative 2, 3 or 4 should be approved until a comprehensive survey of all creeks around the lake is completed. Likewise, insects provide forage food for juvenile salmon. There has not been a thorough analysis of insects which are the foundation for the life of salmon. Insects feed the fish which provide essential food for bears, otters, mink, herons, ducks (eat the eggs and maggots), American dippers, and other known species that would be adversely impacted.

Steep Creek realignment is a major component of this project. Sufficient data is not provided to describe the proposed connection with the Backside Pond.

How will a realigned creek build natural habitat that supports life for salmon? Would the sockeye and coho runs, already weakened by climate change, be absent during creek rehab? How many years would be required for salmon to colonize and spawn in the new creek? Where has such realignment been successful in the past for sockeye and coho? Would two parallel creeks — old and new — be retained until the new stream is habitable by insects and fish?

This should prioritize Alternative 4 which eliminates boats and docks. No welcome center should be built in the proposed location for this and other reasons.

A Supplemental EIS is needed to complete a survey of all creeks and drainages to determine how any development would impact fish. In particular, sockeye deserve special attention because **Mendenhall is one of only three Juneau lakes where sockeye are present and visible.** The other two are Windfall Lake and Auke Lake. Steep Creek sockeye are genetically related to Windfall Lake sockeye (pers. comm., Bruce Wing, retired Auke Bay Lab biologist.)

What comparison of data have you done with Auke Lake? That waterbody has seen significant increases in motorized personal watercraft (jet skis and jet boats) usage in recent years. With decades of baseline research about water quality and effects on sockeye prior to increased motorized watercraft, that information could be helpful in understanding the potential impacts of many larger boats on the larger Mendenhall Lake.

Harbor seals forage for fish at the mouth of Steep Creek and along the shoreline.

Frequent summer visits to Mendenhall Lake by one or two harbor seals have been documented over several years. They are seen at the mouth of Steep Creek. What analysis has been done to estimate the impact on this important marine mammal? Seals likely swim up the river on a high tide, chasing salmon destined to spawn in Steep Creek. The seals must swim about five miles in fresh water to forage at the mouth of the creek precisely where the Forest Service proposes to install an industrial grade dock, loading/unloading facility and 14-foot wide elevated access road/trail for passengers en route to the Remote Visitor Center complex 1.5 miles north across the lake to the glacier rubble field at the terminus.

Seals have been seen chasing salmon near Photo Point as well as along the shoreline.

This is one more reason to eliminate motorized commercial tour boats and docks in Mendenhall Lake.

How does the Marine Mammal Protection Act impact decisions about developments at Mendenhall Glacier? How can the Forest Service comply with the regulations?

A complete survey of creeks draining into Mendenhall Lake could locate other areas of sensitive habitat for salmon rearing. Juvenile salmon are likely to colonize new areas of recent deglaciation. Although rare, we have seen chum and king salmon in Steep Creek during spawning time.

One possible new rearing/spawning site system is the increased drainage from AJ Falls which now shows two robust streams of clear water crossing the beach below East Glacier Trail and parallel to the Nugget Falls Trail.

REMOTE VISITOR CENTER FACILITIES AND DOCKS

Laurie Craig, May 6, 2022

I strongly object to a Remote Visitor Center and its associated facilities. It is not necessary to meet the stated purpose and need. The remote visitor goal is to allow people to 'touch the ice', as FS representatives stated publicly.

Do not expand the Visitor Center Unit Boundary to include this area.

Mendenhall Glacier is receding at a rapid rate. Extraordinary expense would be required to create trails, warming pods, interpretation, staffing, safe walking surfaces, docks, floating docks connecting pilings to shore, restrooms and human waste storage and removal, sanitary washing facilities, and temporary respite in the very likely event that katabatic winds prevent safe boating conditions on the lake and force unplanned longer stays. Windy conditions and calving/rolling icebergs have resulted in lake fatalities and injuries.

Tour operators told McDowell researchers they had mixed opinions about the need for boat access and remote facilities. Safety, public perception and local opposition, limited demand and impacts on other users were cited as reasons for their lack of endorsement of the boat-remote idea. **Community perception is very important to tour operators.**

This survey also said their tour customers wanted the trip to the glacier completed in an hour. That is not possible. Their customers also don't have the interest, physical capability, or time to take this proposed boat-and-hike tour.

It is unrealistic to assume an operator could serve 1000 passengers a day with only two vessels. The noise and other impacts would negatively affect all other visitors.

Remote facilities are unsustainable and create the potential of costly litigation fees for U.S. taxpayers.

'Touching the ice' or 'chasing the ice' is unsafe and expensive. Touching the ice is a stated goal in the MGRA Master Plan, page 5:

> "Both visitors and residents have the opportunity to experience glacial ice, either up close or from afar as their time and abilities allow. We will offer opportunities to 'Touch the Ice' in ways that people desire."

This opportunity already exists. Currently, several helicopter tour companies with operating permits from the USFS, and a few sled dog companies offer tours on the solid glacier surface so people can safely touch the ice. These tours generally do not expose their guests to unpredictable terminus ice that can result in severe injury from glacier collapse.

Moreover, the proposal is counter to what the Forest Service has defended in the past. In a legal ruling in 1980 after a fatal Mendenhall Glacier calving in 1975 that killed a woman and seriously injured her companion, Judge von der Heydt said the people should have known the signs of danger and avoided them. The judge relied on the following case law at the time:

> "The Ninth Circuit has held that a duty to warn is not owed if plaintiff '…knew, or, in the exercise of ordinary care, should have known of the dangers inherent in the condition.' *Harmon v. United States, 532 F. 2d 669 (9th Cir. 1975)"*

The Anchorage federal district court judge in *Hogberg v. United States, US District Court of Alaska, J78-2, J78-3, Consolidated*, filed February 12, 1980, said the **plaintiffs "should have known of the dangers inherent in their close approach to a nine story wall of glacier ice, undercut by water, and recently calved in a close by area."** The judge dismissed the Hogberg/Bresnan case and ruled in favor of the Forest Service.

This judgment could be interpreted as saying the Forest Service as landowner should not knowingly entice people to approach the glacier. **Yet by constructing the proposed remote visitor center facilities, the agency is intentionally inviting people to abandon their sense of danger and trust the federal agency to protect them from potentially deadly conditions**. By building trails to the glacier terminus ice, the Forest Service is promoting risky behavior and denying "*the inherent danger in the condition*."

The Forest Service is reversing the logic that visitors should be aware of risk; instead they are saying visitors should assume that officially sanctioned remote access would not endanger them.

How will the Forest Service protect people by inviting them into inherently dangerous conditions with trails and facilities built solely for that purpose? How can that be justified? What legal liability is the agency agreeing to by encouraging visitors to touch the ice of an active glacier?

The remote visitor center concept is the opposite of what we were told for years as park rangers about why the Forest Service refused to improve trails from West Glacier to the glacier terminus: **the agency did not want to accept the responsibility and liability for creating an attractive and potentially deadly nuisance.**

Eliminate the remote facilities, motorized boats, and docks.

Justification for the Remote Visitor Center was given verbally during the webinar by a Forest Service spokesperson as this: staff heard comments from visitors that we are too far from the glacier, they want to get closer, asking "How do we get there?" and touch the ice.

As a long term MGVC staff member, I have also heard visitors say they want to pet the bears. Yet common sense determines this is foolish, just as common sense determines that touching the ice of an active glacier is dangerous. We do, however, provide excellent access to Nugget Falls and AJ Falls, the lakeshore, forest, bear viewing, salmon spawning observation, nesting Arctic Terns, porcupines, ravens, eagles, waterfowl, etc. without endangering the animals or the curious people who desire better experiences.

Furthermore, regarding visitors' desires to get closer to glacier ice, most cruise ships visit Glacier Bay, Tracy Arm or Hubbard Glacier. All of these locales offer safer, more substantial views of glaciers.

Glacier recession increases the potential for landslides. Landslides could seriously impact visitors using the remote facilities. The pressure of the glacier on the mountain slopes has very recently been removed due to Mendenhall thinning and melting. The ice supported the mountain slope. Numerous 300-foot-plus slides have come off Bullard Mountain in recent years. The same is likely to occur on the lower reaches of Mt McGinnis which is above the proposed remote sites.

Climate change and rates of Mendenhall retreat suggest the remote facilities would cause very expensive construction to move the facilities closer so visitors can touch the ice. **University of Alaska Southeast glaciologists predict ice terminus retreat ranging from 69 feet per year up to 276 feet per year.**

What are the estimated costs of extending and building trails, providing sewage and water, seasonally relocating visitor 'pods' and docks, in order that visitors can touch the ice? What

percentage of other Forest Service and MGRA needs would be unfunded so this remote concept can be maintained?

Heritage resources such as the ancient forest that was revealed when the glacier receded must be protected.

The Remote Visitor Center and affiliated facilities could impact historical resources. What survey has been done near the glacier terminus to assess whether additional intact upright ancient trees have been found recently? In September, 2013 the *Juneau Empire* published an article on these unique ancient trees. The trees are historical evidence that a mature spruce and hemlock forest existed prior to the most recent advance of Mendenhall Glacier. The discovery was made nearly ten years ago. What updates have occurred?

How has this deglaciated forest information been disclosed in the DEIS? Has the Forest Service dispatched researchers to assess the newly exposed land to analyze the potential? Or have safety practices prohibited such close examination?

Is the State Historic Preservation Office (SHPO) aware of the intact ancient forest? Have they sent a representative to determine if the remains of the forest are to be preserved and protected as a natural cultural phenomenon? Have they done a report so the public can review their findings and comment on the impacts of building and continuously relocating a mobile remote visitor center closer to the glacier? Is the planned trail avoiding the ancient sheared-off trees? How can the access trail protect the ancient forest if no survey was conducted?

The SHPO should also investigate the historic resource of the **kames** near the pavilion. These are unique glaciological features containing remnants of glacier ice calved off when the terminus was located in that area. In 1985, the main kame, now a popular kids' winter sledding hill, was drilled. Three feet below the gravel surface, glacier ice was discovered. Historic photos from the 1960s and '70s show a much larger kame. As interior ice melted, the kame shrank.

One of the most severe impacts of the Remote Visitor Center is on birds colonizing and nesting on the rock peninsula and the newly-exposed terminal moraine. This is another impact that cannot be reduced without eliminating the associated facilities for this area.

LEGAL ISSUES

1) The Forest Service failed to comply with the National Environmental Policy Act in the design and siting of the Welcome Center and the curved bridge attachment by

1. Failing to offer any alternative locations
2. Presenting three alternatives showing the welcome center in the same location
3. The scoping site was not this location
4. The scoping site was the hillside above the kettle pond
5. No rationale was given for discarding the hillside site
6. The Forest Service spokesperson during the March 31, 2022 webinar stated this hillside location "would compromise the historic visitor center." No professional architectural opinion is provided to justify his statement.

2) ** Webinar was NOT recorded despite the printed statement on the required Cover Page of the DEIS that "The webinar will be recorded and posted to the project website for future viewing."

Why was this decision not to record such an important event changed after advertised otherwise? Why was public access blocked from future viewing when the opposite was stated clearly on the primary "Dear Reader," page? A suspicious or curious person could question motives about the agency not wanting relevant questions and answers preserved for the record.

This is a conscious decision that fails to preserve promised public information when it was written that it would be available for later viewing.

Who made the decision to intentionally ignore this important public information? If it was not intentional then it was obviously an arbitrary and capricious decision to prevent preservation of official responses to questions submitted during the webinar. Those answers were the basis of some people's comments. My notes clearly state that the agency spokesman said, "The hillside location would compromise the historic visitor center."

NEPA requirement under Section 106 is incomplete

3) The National Historic Preservation Act (NHPA) Section 106 and NEPA must coordinate to determine impacts to historic properties. Similarly, the State Historic Preservation Office plays a vital role, but that response is not available.

1. Alaska State Historic Preservation Office (SHPO) programmatic agreement is incomplete
2. DEIS says the SHPO agreement will be provided at a ***future date***, leaving the determination unreviewable by the public during the official comment period for the DEIS
3. Without evidence, DEIS inappropriately states, "…the discovery of additional undisclosed historic properties in the MGRA is unlikely."

What comprehensive survey has been conducted, and by whom, to make such a categorical exclusion statement? "Previous cultural resource surveys," p S-7, have not been provided to establish this determination.

As an example, a local historian found the most recent ICE LIMIT rock carving on the Trail of Time and informed MGVC staff. Additionally, Forest Service staff constructing Nugget Falls Trail in 2007 discovered a 1970s era 'ice danger' sign that was obscured by successional vegetation. Has there been a study of the perimeter to assess if there are additional historic signs?

Has the SHPO signed off on the statement that it's unlikely to locate additional historic or cultural sites? The public cannot know the answer because that office's determination is unavailable. **Thus, the DEIS fails to meet NEPA requirements for a complete analysis of impacts to the human and natural environment.**

DEIS Section 3.9.1 Scope of the Analysis states:

> "Project activities have been identified in Alternatives 2, 3, and 4 that ***have the potential to affect historic or traditional cultural properties located within the project's expected, but yet to be defined, area of potential effect (APE).*** The APE will be determined prior to project implementation and is expected to consist of the limits of construction disturbance and staging areas for each of the project components." [emphasis added]

Again, this unknown information is not reviewable by the public because it is not revealed during the public comment timeframe. Details about alternatives 2, 3, and 4's impacts to historic resources should be explained now rather than later after decisions are made and public comment is closed.

For the reasons above, the Forest Service fails to comply with Section 106 of National Historic Preservation Act in a timely manner to ensure compliance with NEPA that information is provided to the public for review and comment during the DEIS comment period

- the Forest Service predetermined the location and design of the Welcome Center by directing ECI to design a fully schematic structure
- providing substantial funding to one firm for a complete architectural design for one location
- advancing one location as the de facto preferred alternative
- NEPA requires alternatives be presented. Only one welcome center design and location has been presented in all alternatives except the No Action alternative

4) The Forest Service provides no justifiable rationale for dismissing alternative locations for the Welcome Center

- no alternative sites such the bus parking lot or the hillside were examined or analyzed
- other sites could reduce environmental and socio-economic impacts of noise, congestion, air pollution, scenic viewing, fuel spills into Steep Creek and other waters, limit disruption of known bear movement corridors, or impact fish and wildlife habitat
- failure to comply with NEPA 1502.14, 1502.15, 1502.16, Alternatives Including the Proposed Action, that requires agencies to

> "(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated."
>
> Also, "(b) Devote substantial treatment to each alternative considered including the proposed action so that reviewers may evaluate their comparative merits."

To achieve compliance, the Forest Service must provide this information in a Supplemental EIS.

The Forest Service acted in an arbitrary and capricious manner by neglecting to follow NEPA requirements.

5) The DEIS failed to provide a functional assessment analysis of disruptions to bears, fish, and other wildlife caused by siting the Welcome Center in one location

- multiple tracking maps (apparently not consulted by DEIS authors) covering nine-plus years show the Welcome Center and Steep Creek mouth/dock area is an essential transit corridor for bears and their cubs between Nugget Falls, Photo Point and Steep Creek
- the beach/kettle pond corridor provides safe distance between visitors and bears thus reducing human-bear conflicts that could endanger visitors and bears
- the location, and its inclusion of a cafe, presents the high probability that bears could become food-conditioned when the wild bears currently are not food-conditioned at MGVC
- increases the potential for aggressive bear behavior due to crowding in confined naturally forested habitat in the narrow critical transit zone between the kettle pond and the mouth of Steep Creek
- endangers all visitors by introducing human food in critical bear habitat

6) Welcome Center location prioritizes immediate cruise passenger comfort over destructive environmental impacts, recreation values, natural view sheds, and local preferences

7) The Purpose and Need of visitors' restrooms and warmth can be achieved by provided reduced facilities in another location; restrooms don't need windows.

8) The DEIS fails to comply with NEPA by not analyzing alternative bus loading/unloading locations

- introduces serious health complications of concentrated air pollution from multiple buses in a confined area
- the sole bus transfer location results in loud and disruptive noise in a key natural area
- prioritizes commercial tour motor coaches in the primary access location
- disregards consideration of using an electric circulator system because industry says visitors don't have enough time allotted by industry, i.e., the ships and bus companies, for transfers; they need to cooperate so glacier visitors and bus passengers can breathe clean air
- displaces other visitor demographic classes, regardless of their mobility capabilities, to accommodate wealthy ship passengers
- disrupts the natural awe and wonder by blocking the viewshed with many buses

See other legal issues under Remote Visitor Center

See also legal issues on missing webinar recording

> **Failure to record the webinar** despite the published statement on the Cover Sheet (required by NEPA 1502.11) that "The webinar will be recorded and posted to the project website for future viewing." By not preserving this record, the agency responses to questions in the Chat segment are not saved, not reviewable, and eliminate accountability during an official government public information event.

9) State of Alaska cease and desist order of April 25, 2022 for Mendenhall Lake and River

The Forest Service's ability to regulate any boats — motorized and non-motorized — on Mendenhall Lake and River is threatened by the State of Alaska's assertion that only the State can regulate such activity on these waterbodies which flow over submerged lands claimed by the State.

In his April 25, 2022 cease and desist order to the Forest Service, Alaska's governor, through Department of Natural Resources Commissioner Corri Feige, declares the State is the owner and manager of state-owned submerged lands and the water flowing over them. The governor/commissioner states that motorized watercraft or aircraft using the lake and river are exercising allowable uses and that no permits are required. The order tells the Forest Supervisor to stop issuing permits for boats on the lake.

This charge significantly halts progress on the DEIS. A protracted legal argument is likely to ensue. Moreover, it jeopardizes current Forest Service permittees who would normally be conducting 2022 canoe, raft, and kayak tours through the FS outfitter/guide permit process. How will this last minute issue be resolved? Will the Forest Service defend these long time non-motorized businesses if they continue their operations? Similarly, how will the Forest Service respond when someone uses a motorized watercraft on the lake by running up the river from private land?

Until this important legal issue is resolved, the DEIS/FEIS and ROD decisions should be suspended. Use the delay to gather data for a Supplemental EIS that would make the project components more complete and defensible.

This legal issue affects many crucial aspects of the project. What should the public expect the Forest Service to do about the proposed actions under these new circumstances? Will our comments still be relevant? If the State of Alaska prevails, an entirely new project and EIS process must be presented, along with adequate public review for a new proposed alternative.

Despite the State's claim, I support the USFS retaining ownership and management control over motorized watercraft on the lake and river so these activities can be prohibited.

TRAILS

Elevated sections of trails need more than 3 feet of vertical clearance to separate bears from people. Although bears can pass in that small a space, they may avoid the area or behave aggressively due to being too close to people. Three feet is insufficient vertical separation.

Decking should not be galvanized steel. That material is too noisy underfoot and if something is dropped. Items dropped when bears are nearby would clatter loudly and disrupt viewing for bears and other watchers. It is also too slippery in water and ice. Use pultruded fiberglas or similar material.

STEEP CREEK

I support demobilizing the back side of the Steep Creek Trail. That segment of trail must be eliminated to provide undisturbed ingress and egress for bears. While the existing trail is naturally revegetating, **the seasonal closure must continue to provide adequate people-free space for bears. No commercial tours on Steep Creek Trail.**

The backside trail has been the site of numerous confrontations between bears and people. In the early years of the trail (opened on July 31, 2005) when we did not understand how the new 'fish viewing' trail was actually a major travel corridor for bears, we learned the hard way that people do not know how to behave around wild animals. It is also extremely difficult to manage visitors there. It is an area where blind curves, thick brush and no fences allow people to get very close to bears. People have chased after bears and gone down into the creek when sows and cubs are present. I encountered this one day when I saw five tourists exiting the creek bank while a family of bears tried to catch fish. We discovered that closing the backside trail ensured better bear viewing because the animals had safe escape routes from people and other bears. Therefore, the bears appeared to be more willing to be seen in safe areas.

The closures we institute every year improved bear behavior and reduced conflict incidents. Allowing people to connect with the Moraine Ecology Trail via the meadow platform would hasten potential harm to people and bears from unnecessary confrontations.

DEIS proposals 2 and 3 create a significant human-bear conflict location again by introducing a 14-foot wide elevated and at-grade trail to the proposed dock and shoreline trail. I oppose this aspect of the plan. Moreover, potential passengers would

venture into bear habitat as they await or return from their motorized commercial boat tours. Bears need a wide buffer zone around the creek.

No trail should be extended around the beaver lodge to the beach. This is critical bear habitat. There must be a large no-people buffer zone around the kames and the old beaver dams. These areas are essential for safe bear travel, to ensure access to salmon, and to prevent aggressive behavior among bears that would be caused by stress. Visitors will surround a bear and her cubs if they are allowed to do so. **At-grade trails near the mouth of Steep Creek, and around the pavilion pond must be human exclusion zones.**

Alternative 4 limits the extent of elevated platforms for Steep Creek on the west side of the road. That is a better plan than alternatives 2 and 3 that build too many elevated platforms that would disrupt bears using the creek banks and water. The size of the platforms is too large; they are the size of my living room. Bears need more privacy. There is insufficient space between the elevated trail and the proposed berms; that would force bears to walk on top of the berms and be too close to the road. Make the platforms smaller to reduce noise and threats to bears and other wildlife. Platforms should not extend over the creek, but remain back from the water. The animals need discreet quiet places. This is not a zoo.

The underpass beneath Glacier Spur Road must be for bears and wildlife only, no people. I support replacing the culverts with a bridge. It should be slightly arched to serve as a subtle speed bump and an attractive entry to the front area of the glacier.

It is dangerous to introduce bears and people into a confined space together. I believe bears will successfully adapt to using the underpass. Two known female bears have frequently passed through the culverts to avoid the road. However, their cubs are very reluctant to follow through the scary tubes. Cubs have been heard bawling inside the metal culverts. Mother bears had to cross the road to fetch and escort their cubs safely to the other side of the road.

On the east side of the road, I support Alternative 4's proposal to retain and improve the dike trail. Minimize disturbance to vegetation as much as possible. DO NOT build elevated platforms in and above the creek as Alts 2 and 3 propose. There should be no elevated platforms between the road and Dipper Falls. **Explain better how the elevated portion over Steep Creek would be designed and where it would be built**. This information is missing yet it is more important than the fully design floor plans for the Welcome Center Complex. Why is one aspect so overly developed while a crucial aspect of salmon-wildlife habitat destruction so incomplete?

I oppose a blind at Dipper Falls. This is very sensitive habitat for fish, birds, and bears, and a nesting site for American Dippers, the namesake of the area. Rock terrain at the falls is steep on three sides and very confining for any animal especially bears and otters. We should not introduce people into such critical habitat. This place is critical to spawning salmon; coho are reactive to people overhead and will turn back or hide. People would threaten coho salmon; they are more sensitive than sockeye.

A better place to create a viewing area would be to attach a small platform to the proposed elevated bridge section south of Dipper Falls. It should be minimal in size. Do not crowd the bears who need access to salmon in this essential zone.

The Dipper Falls bridge was built in 2007. It replaced a long wooden bridge with an elbow bend that had blind access on each side. A well-known Juneau photographer chose to leap over the railing into the creek to avoid a mother bear who had entered the bridge from the other side. Neither could see the other until they were very close. The bear did not back down so the man

exited over the side a short distance below. Let's not remake those mistakes in new construction.

POWERLINE TRAIL

Relocate the parking area proposed for Powerline Trail 500 feet or more south. On the DEIS map the proposed location is at the junction of Spur Road and the bus parking lot on the east side of the road. There is a better option.

The present site was not designed to be a trail head. It was the delivery site for gravel to build the accessible grade mossy trail just inside the woods. It was used for equipment to move the gravel. That is why the trail segment is muddy and not gravel.

- relocate to reduce conflicts with buses entering and departing the bus parking lot. It would improve safety. It is hazardous to have private vehicles moving in and out where buses are doing the same on the other side of Spur Road.
- relocate to provide a more substantial buffer zone for bears who use the south bank of the creek as a travel and fishing corridor. That zone should be a people exclusion zone. It has an obvious bear trail. More space needs to be given to bears. Demobilize this area when the trailhead moves to a proper location.
- a more appropriate entry to Powerline Trail should be near the old power plant foundation.
- most importantly, a historic assessment must be conducted for the power plant foundation vicinity to ensure no artifacts are impacted.
- speed limit at this point (entry to power plant foundation) should be reduced to 20 mph

PHOTO POINT TRAIL

We can improve access and pedestrian flow on Photo Point without a full loop. **I recommend widening and leveling the grade of the existing trail.**

This trail provides direct access to a spectacular view of the glacier, waterfall, tern nesting area, mountain goats on Bullard, and the peaceful lake. **This is a perfect place for visitors to rest, be curious and hear great ranger talks.**

There is a small loop at the end. The steep section (leading directly north) needs to be reduced in grade to be less steep, widened, and replaced with safe asphalt. (Do not use concrete; it breaks down in the freeze-thaw conditions) This straight segment could be given a slight switchback to ease the grade's steepness. **Consider a slight expansion of the seating area at the end of Photo Point Trail to accommodate people.**

Photo Point is an important bear foraging zone. Keeping people on the trail, not climbing on the rocks, allows good bear viewing and ensures safe transit for bears and visitors.

- Build to the minimum accessible standard for width to ensure wheelchair guests can use Photo Point Trail. Do not make it 8 feet wide; choose five feet width which is sufficient for rescue four wheelers.
- Do not build a bridge connecting to the beach below the visitor center (between the USA and Photo Point).
- **Elevate the junction of Photo Point Trail and Nugget Falls Trail. This is a bear corridor.** With an elevated section, bears can pass below. It would be easy to bring two connecting parts of the Photo Point Trail to the same grade.
- Widen the approach to Photo Point Trail from below the visitor center northeast to this junction. Ensure the edges are safe.

- Do not obstruct bear passage in the sloped brush area between the inlet pond of the lake and the walkway; **that is a critical bear zone.**
- **There is a rare orchid growing at the base of a spruce tree near the beginning of Nugget Falls Trail. Be sure it is protected or relocated if possible.**

Develop only the upper plaza area (below the visitor center), with temporary structures to allow for snow storage. Do not develop the lower plaza by the USA. It is a bear transit corridor and important habitat.

NUGGET FALLS TRAIL

I support creating a minimal loop trail on the beach side of the Nugget Falls Trail.

The beach portion simply **needs four small bridges to cross streams.** Currently, some of those streams have stepping rocks. Not all visitors are comfortable using them.

- Make this area accessible with open places where people can walk to the ponds and lake surface. **This is popular local access. Let's keep it that way.**
- This sandy beach is a recent (1970s) remnant of the glacier terminus. Manage vegetation for sightline visibility.
- **Ensure protection for ground nesting birds,** such as Arctic Terns and Killdeer, by constructing **attractive fencing to block access.**
- The beach allows people to see the open expanse of landscape, lake, and waterfall which are obscured on the hardened trail. For that reason, visitors can walk a shorter distance to see the glacier and Nugget Falls. Motorized tour boats on the lake would destroy the ambiance of this view and walk.
- Make this a minimally structured trail to allow the sense of freedom for walkers.
- Widen and level the hardened Nugget Falls trail. Two people walking abreast take up the whole surface. That forces others to walk on the sloping sides.
- Consider enlarging or replacing with a bridge the culvert that lies under the trail between the chasm bridge north to the fork where the hardened trail and the beach diverge. The grade could be increased to make a level trail there. This area floods in jokulhlaups. Raising the grade could make the trail more usable.
- The **scour pond in the chasm,** where the elevated bridge curves through the narrow canyon, is an **important glaciological feature that should be preserved and interpreted.** This small basin was created when the glacier drained through this area in the 1940s. A visitor (Dr. Yoder) donated photos of himself and fellow sailors in 1944 standing on the now-vegetated slope watching the raging flow of water from 'Mendenhall Falls' as it coursed through the chasm. This would make a fine interpretive sign.
- Beware that the steep mountainside slope adjacent to the waterfall collapses with catastrophic effect, sending shattered rocks a distance that could impale fragments into visitors. A large landslide occurred there in October 2005 or 2006, sending new boulders the size of cars down the hill. Frequent large landslides have occurred recently north of the waterfall, breaking winter ice and causing tsunami-like waves.

DREDGE LAKES TRAILS

The "hidden" perimeter trail proposed in alternative 4 makes a better choice for hikers than the shoreline trail. That option preserves the natural view of the lakeshore from the visitor center. I strongly oppose any commercial tour groups using Dredge Lakes trails. I strongly oppose the view-obstructing shoreline trail.

I do not support the foot bridge over Mendenhall River. This is key foraging sites for swans and other birds such as white-fronted geese.

GLACIER SPUR ROAD AND TRAILHEAD PARKING

By introducing three new parking areas along Glacier Spur Road, the speed limit must be reduced to accommodate increased ingress and egress.

- Reduce the Spur Road speed limit in stages as drivers approach the glacier. Reduce to 30mph at the middle new parking area. From the approach to the new Powerline Trailhead at the old hydropower plant, reduce speed to 20mph. From the bus parking lot to the end of Spur Road, reduce speed to 15mph.
- Install three permanent asphalt speed bumps, similar to those on Riverside Drive near the elementary school, at the usual speed hump sites and farther south near the power plant. The Forest Service installed asphalt speed bumps on the West Glacier Spur that do not adversely affect snow removal.
- Enforce speed limits with USFS Law Enforcement officers.
- Continue to display the digital speed readout device to encourage adherence to speed limits
- Reduce private vehicle lot size by making parking diagonal, one-way, and counterclockwise
- Determine a new, non-obstructing, minimal parking area for a couple of day-use motorhomes

BEARS

Bears are the treasured natural feature that makes visiting Mendenhall Glacier unique in Alaska. MGVC is one of the best places to see wild black bears behave in a calm, unthreatened manner. It wasn't always like that.

Few bears were seen in the 1990s and early 2000s. There was one sow who occasionally brought her cub in early 2000s to the accessible ramp (known for years as the EZ Walk Ramp) that connects the kiosk up the hill to the visitor center. They were known for snoozing there. Rangers directed visitors to the elevators or entry stairs to avoid the sleeping bears. (See daily visitor center logs now stored in the archive room at JRD for more details.)

Everything changed in 2005. A Forest Service trail was constructed in a short loop around Steep Creek with platforms to allow visitors to look down on spawning salmon. There had been a primitive dirt trail, mashed eroded streamside vegetation, and a short wooden bridge over the creek as the previous access to the Moraine Ecology Trail. The brush was so dense at grade level that close encounters with bears often resulted in terrified people and panicked bears. Noise from the rushing creek prevented either species from hearing the other until they were too close. This former trail was closed and the new trail was under construction when I began working at MGVC in April, 2004.

When I first arrived in Juneau in 1969, the Steep Creek area was recovering from recent deglaciation. The terrain was open, sandy gravel with sparse willow and alder clumps scattered around. There were no cottonwood or spruce trees. No protective cover for fish or bears. It was likely bears came out at night when no one could disturb them.

The fish trail/Steep Creek Trail opened on July 31, 2005. **Trail builders didn't know how bears used the creek perimeters so they unknowingly put people into bear habitat.** The growth in vegetation gave cool cover for sockeye and coho salmon that attracted the bears. Sockeye generally arrive the third week of July and are spawned out by mid-September. In October the creek is taken over by big coho salmon who will spawn there into freeze up. We've watched eagles catch coho in January.

After a series of human-bear conflict episodes in 2005-07, we realized we had to actively manage people to prevent them from walking up to bears. One key incident happened in 2007 when a bear grabbed a fish from the creek, walked under the platform to an at-grade knoll and lay down to share the fish with her cubs. **There were NO fences to separate people from bears.** Visitors surrounded the bears on three sides at less than 15 feet! I arrived to join another ranger and we moved the mass of people away from the open ground and onto railed platforms. People crowded the railing of the elevated platforms and pressed forward. One man extended his long camera lens to within 10 feet of the mother bear as she and the cubs chomped a sockeye. **The mother bear sprang up and lunged at the railed platform where the photographer threatened the bears.** She was incredibly fast. We moved all visitors against the far railing.

Thus began our proactive management of bears and people on Steep Creek Trail. The day after the incident, we installed temporary fencing on both sides of the trail to block the open ground. We recognized the intense role we had to play to control human access to bears. Ranger presence became essential. We re-examined every portion of the trail for similar places of unprotected contact. **We began closing the backside after similar incidents occurred there.**

At this point, experienced Pack Creek bear manager John Neary was consulted for recommendations on site management and ranger skill protocols to keep bears and people apart. **Managing visitors at Steep Creek became the main visitor contact location to prevent people from getting too close to bears and harassing them.**

During these early years, we found residents to be helpful in conveying Forest Service messages about behavior to other guests. Staff departed at 7:45pm when other visitors rolled into the parking lots. We would receive 'morning after' reports from upset local visitors about people frolicking in the creek, harassing bears, fish, and other visitors who remained confined to the platforms. USFS law enforcement did not respond. Eventually, peer pressure overcame Alaskans' typical live-and-let-live reluctance to intervene. Locals began speaking up for the bears.

Within a short time, a few dedicated Juneau residents approached the MGVC director about volunteering to assist overwhelmed ranger staff. There was a brief testing period to see how such a program could work. **The next year, the bear volunteer program was formalized.** All of the volunteers joined staff in April seasonal training to be sure their interpretation information was accurate on bears and other topics. All four volunteers were local retired professional women. They gained the respect and confidence of other residents. I coordinated the bear volunteer program for three years until it was disbanded by leadership over my strong objection.

Neary gave us a new philosophy for managing people and bears. His approach was a quiet, strong stance that would subtly intimidate a bear in the same manner other bears exerted their dominance: no fast movement, just focused attention, keen alertness and preparedness to move slightly forward into the bear's space. Stand your ground. This was delicate work that required subtle movements and careful learning. We influenced a population of calm bears who responded to our calmness. We learned that quiet, non-threatening human behavior keeps the bears calm. The animals learned to ignore us as we stood quietly on the platforms overhead. We managed visitors' behavior by teaching them how to reduce their impact. Calm bears don't run away.

Before John Neary guided our philosophy, certain Forest Service staff had urged us to be aggressively dominant toward bears. This other person promoted rifle training for staff which included bean bag shooting experience. We bought high powered squirt guns. The man was a

weapons fanatic. I soon realized he was inappropriately coaching us to use paintball guns and other aggressive tools in close proximity to guests who could easily be injured or knock a weapon from our hands. **With thousands of people onsite, no weapon should ever be used unless a serious incident was pending.** Gratefully, Neary's approach prevailed. We continue to rely on bear spray as a deterrent of last resort. It has rarely been deployed.

Minimal hazing was adopted to preserve non-aggressive human reactions to bears. When so many people are nearby, hazing bears can increase the bears' stress and make their movements erratic and unpredictable. Bears could be driven into crowds if hazing is conducted inappropriately. **It is safer to manage people. The bears have learned the secure places to move. We have new visitors every hour; we have the same bears for years.**

Neary's teaching meant learning more discreet management methods. We read literature on other bear viewing sites' experiences. **The most dangerous situations occur when bears become food-conditioned so we restricted food.** Bear-resistant trash cans had been installed in 2003. We made sure they were secure and emptied frequently. We cleaned up any food spills.

To increase my own expertise, I devoted significant effort to learning about bears and bear management. I attended several conferences and workshops. I joined the professional organization International Association for Bear Research and Management. When MGVC leadership would not fund my travel, I spent my own money to attend several Human-Bear Conflict Workshops in Canada, Montana, Utah, and Tennessee starting in 2009 and ending in 2018. An article I authored on MGVC bear viewing was published in the Spring 2022 issue of International Bear News. It explained how our bear viewing area evolved and the hard lessons learned. For the three years I managed the MGVC bear volunteers' program, the volunteers contributed over 800 hours assisting visitors with information and ensuring safety; they helped guests see bears, as well, by sharing locations and monitoring both visitors and bears. They were a tremendous asset and complement to seasonal staff. All of them were long time Juneau residents with experience at MGVC and working with our practices. I participated in field work on the 2008 black bear mark-recapture study with ADFG. I joined state biologists in bear collaring events several times. I was a co-author on the bear-cottonwood study with lead author Mary Willson. I assisted in training seasonal MGVC staff in bear behavior and site usage. I shared knowledge with audiences in hour-long Fireside Lectures on Bear 153 and her family history, and on Bear 25, the popular cinnamon colored black named nicknamed "Nicky" for the noticeable nick in her ear, and her life and legacy of cubs.

My most enduring contribution to MGVC is nine years of daily bear movement maps. I started this project in 2009 to record each bear sighting with different colored pens to distinguish individuals and show their travel pathways. Busy days with 8-10 bears are colorful traces of the direction of the bears' movements. This project continued for the remainder of my employment at MGVC and was maintained by work leader Amy Sherwin after my departure. Amy has become the visitor center expert on bears and bear behavior with many years of experience and knowledge. Maps are superior to words or spreadsheets because they show patterns at a glance.

Unfortunately, the DEIS states the contractor "conducted a review of <u>existing information [ONLY]</u> regarding biological resources for the project to analyze species of interest or concern and habitat availability within MGRA (ABR 2021.)" [emphasis added]

There is no reference to the bear movement maps which reveal the conflict sites with proposed developments. There is no listing of the 2009-2018 illustrated bear movement maps in the appendix of resources. Were these items made available to ABR? **<u>No field studies were</u>**

conducted. Therefore, the information is incomplete and does not meet the requirements set forth in NEPA.

Appropriate, site-specific bear management practices are crucial to public safety and quality visitor experiences. During my tenure at the visitor center, as a team we developed key elements of bear management guidance for staff:

- Always be alert
- Communicate your possible moves
- Anticipate the bear's next move
- Know your location by name
- Call for backup when bears and people are close
- Carry bear spray: know when and how to use it
- Wear a vivid safety vest when managing bears and people near traffic or crowds
- Learn how to calm a crowd of visitors regardless of their language preference
- Position yourself to intercept bears or people before they get too close
- Always be prepared for a sudden change
- Listen and look for other bears
- Stay focused
- Interpretation is secondary to safety
- Continue closures of critical bear habitat

The most important factors in keeping bears and visitors safe from interspecies conflict is hiring capable, experienced staff, and keeping food away. This is always challenging. We have difficulty retaining good staff due to lack of winter employment and low pay for the amount of work and degree of expertise needed to manage crowds and bears.

- Emphasize ANILCA hires for seasonal bear specialist staff. We too often send young, inexperienced staff into very difficult situations where they do not have the expertise to manage conditions wisely. Hire retired locals.
- Increase staff pay. Provide incentives for those who show ability to manage human-bear situations successfully.
- Beware that cell phone photos and social media postings dominate visitor desire to capture images with wildlife.
- Send staff to professional Bear-Human Conflicts Workshops held regularly through the International Association for Bear Research and Management (www.bearbiology.org)
- Increase staff pay grades for very challenging work with immense crowds of often uncooperative guests.
- Ensure staff working with bears do not abandon their post until a replacement is in place and briefed.
- Continue site specific management training throughout the visitor season.
- Expect to manage multiple bears simultaneously, especially juveniles who are learning their boundaries.
- Manage site vegetation to curtail access to creek surroundings, to increase visibility, and to provide escape routes for bears
- Work closely with DOT so MGVC vegetation management plans are followed; DOT often bushwhacks roadsides shrubs. Instead, careful pruning serves the MGVC purposes better.
- Construct permanent speed bumps on Glacier Spur Road to slow traffic. This continues to be a serious problem for pedestrian and wildlife safety as drivers often disregard speed limits. Temporary speed humps have proven the positive value of this addition each year. Take back ownership of the last mile (north) of the road to perform responsible traffic management.
- Reduce speed limits at several places along the Spur Road

BEARS AND UNLEASHED DOGS

Unleashed dogs are one of the biggest threats to bears in MGRA. Dogs have caused aggressive, defensive responses in mother bears especially.

Unleashed dogs are also a frequent complaint of visitors who don't want dogs to jump on them, harass them or their children or their leashed pets.

Enforce existing leash laws for USFS developed recreation sites. The agency has the ability to regulate misbehavior. We need to enforce the laws.

I support the proposed Forest Order to prohibit all dogs on Steep Creek Trail "boardwalk". This is essential to protecting visitors and wildlife. Bears do not distinguish between leashed, unleashed, or service dogs.

LACK OF INFORMATION IN DEIS ABOUT BEAR HABITAT USAGE

The Forest Service must conduct scientifically defensible field studies to determine bear usage in areas of planned development. This must include at least two full seasons' analysis and tracking. The information must be presented prior to an FEIS or ROD.

Gathering the ground-truth data is likely to require a Supplemental EIS. Without the facts, the agency has not provided complete information on environmental effects of proposed changes, nor choices to mitigate habitat intrusion. **NEPA requires that decisions be based on data, not assumptions or "available information," as is currently cited in the document.** This lack of research is a legal weakness that just be corrected prior to a ROD.

The DEIS states, in the Biological Resource Report (online, *Supporting Documents*) **that only "opportunistic observations" were made during the April-October, 2019 period**. That is severely inadequate. There was no formal scientifically designed study of sightings, especially in areas that are closed. Those areas would be impacted with new trails, yet we do not know how bears move through the proposed trail areas. Therefore, the information on bears and their habitat impacts are scientifically indefensible.

In this same report, pages 43-49, the habitat assessment presents more reason to conduct field studies:

> **"Despite the collection of static, point in time observations, there remains little detailed information on how bears move through the area and what travel corridors are used most frequently."**

This information must be provided prior to any project approval. Without it, NEPA requirements are not met and the DEIS is incomplete. Data must be collected and presented for public comment in a Supplemental EIS.

Valuable details are available, but excluded, based on ADFG's satellite GPS collar data from the five bears collared at Steep Creek, and other valley bears. This needs to be corrected. ABR, Inc., in their footnote on page 43, state they are capable of extracting this essential usage from collar data points:

> "ABR, Inc. has skills and expertise to analyze relocation data for radio collared large mammals in Alaska, but a data sharing agreement would first have to be negotiated

> with ADFG to allow ABR staff to analyze MGRA and Juneau area bear location information."

Analyzing the GPS radio collar points must be done as the starting point for actual studies. While this is an essential first step it cannot suffice for scientific site surveys. Although the most recent tracking collar was affixed in 2013, the data would be usable to guide further research. Known bear transit routes must be identified and preserved. Bears must be accommodated.

Eliminating docks, boats, and industrial trail developments around Steep Creek and the Shoreline Trail would achieve the essential goal of protecting bear habitat. Developments in Dredge Lakes cannot be undertaken with out more research into critical areas bears use there. No studies have been done.

I agree with the following DEIS statements about bears and the effects of Alternative 2:

> **"The new facilities and trails would cause localized habitat fragmentation within high value areas with observed bear movements between the Nugget Falls area to Steep Creek and the Powerline Trail. In particular, the portion of the Lakeshore Trail that crosses in front of the Welcome Center would directly impact active bear movement between Nugget Falls area and Steep Creek. Collectively, Alternative 2's project components would block or limit access to undeveloped shoreline habitat in the area.**
>
> **"Under Alternative 2, new trails and facilities in the Visitor Center Unit would lead to more visitors within bear habitat and a human presence in new areas, and potentially more bear-human interactions. In addition, food service proposed in the Welcome Center could attract bears and lead to more trail and area closures and bear hazing…**
>
> **"Alternative 2's project components proposed in the currently less-developed outer areas of the Visitor Center Unit and within the Dredge Lakes Unit and West Glacier Unit would have the potential to directly impact bear habitat, disrupt bears, and lead to more negative bear-human interactions. Lakeshore Trail and Welcome Center Dock would introduce new facilities and visitors near the mouth of Steep Creek could block bears' access to the lakeshore or lead to an increase in bear-human interactions at this location. Development-spurred visitor use in more remote portions of MGRA, including Remote Glacier Visitor Center, Remote Glacier Dock, and West Glacier Unit Trails could disturb bears that are less habituated to humans…**
>
> **"Under Alternative 2, more tour buses and vehicles on Glacier Spur Road would potentially increase the risk of bear-vehicle collisions…"**

Assumptions are made about the value of habitat in certain areas because NO STUDY has been done to determine and assess bear usage in the areas of proposed development. For example, there is no analysis of the proposed 'upland facility' associated with the industrial dock proposed for the West Glacier area and how work performed at night on boats would impact bears, recreation, water quality, air quality, noise, light, residential neighbors, or public safety.

> **"Project components would cause overall increases in habitat fragmentation and human use of bear habitat throughout the recreation area, leading to more**

> **negative bear-human interactions and blocking bears' access to important habitat…"**

Statements above in quotes are from *Chapter 3 — Affected Environment and Environmental Consequences, pages 3-37 and 3-38* of the DEIS

I disagree with the DEIS statement that impacts to bears "would have a moderate effect overall on bears" at the forest level. Of the 17 million acres of Tongass National Forest, the areas impacted by the massive development proposed for MGRA would have a major, significant impact on a population of bears that are of great value to people who live here and who visit here. **MGRA bears have great intrinsic benefit as well as a socio-economic value to the Tongass National Forest.** Also, in bear discussion in alternative 3, I disagree that proposals would have a moderate effect. They would have a major effect. That is due to the prominence of MGVC and the million visitors who the agency intends to accommodate as stated in the Purpose and Need. Forest Level impacts are relevant to the integrity of the National Forest System and the citizens and visitors who fund the agency.

Alternative 4 — with modifications plus the elimination/relocation/redesign of the Welcome Center — is the best choice for bears. Nonetheless, more data must be collected. See notes on specific trails for details. **NO FOOD SERVICE**

REPLACE ALL BEAR RESISTANT TRASH CANS WITH NEWER, CLEANER BEAR-RESISTANT RECEPTACLES. PRESENT MODELS ARE GOOD BUT 20 YEARS OLD AND RUSTY, NOT CLOSING PROPERLY, AND NOT AS FUNCTIONAL AS THEY NEED TO BE. Ensure they are emptied frequently and that spilled, leaked liquids are promptly cleaned up. Add bear-resistant trash cans to all new parking areas.

VISITOR CENTER

The historic visitor has been the heart of MGRA for 60 years. It continues to remain a treasured location for Juneau residents as well as visitors. It should remain the key interpretive site with continually updated exhibits. The building anchors us to the site even as we watch the glacier recede from view. I disagree with Statement 6 in the online Historic Visitor Center review that the structure fails to maintain the 'feeling' of the original visitor center. It does to the majority of locals who have bonded with the building and its role interpreting the natural and cultural history outside the windows.

Complete the nomination of the visitor center for Historic Preservation registry.

- The copper-sheathed hearth should be interpreted to explain the bullet hole dents.
- Reopen the fireplace to actual wood-burning logs. For many years we had a propane system using artificial logs. The system and propane tank were removed in 2006 after we noticed soot buildup on the interior windows and walls.
- No public food facility should be allowed in the Visitor Center or Welcome Center. Although I have nostalgic memories of eating cherry pie in the Sit' Ya in the 1960s and early 1970s, today's changes to the natural area that provides ideal bear habitat convinces me that memories are better than food-conditioned bears.
- **I support nomination of the visitor center to the National Register of Historic Places.** The 1993 report for nomination, augmented by the recent report, is a perfect basis for finalizing eligibility.

- **The theater should remain as a place for summer guests to sit and view the movie.** Despite the DEIS stating trends are for more mobile learning, the reality for older guests is that they appreciate and desire a place to sit, rest, and learn.
- Increase the capacity for theater seating.
- Do not replace carpeting; it provides a more secure walking surface than proposed easy-cleanup flooring for a classroom setting.
- Maintain a flexible theater space where chairs can be moved and different arrangements created for educational opportunities.
- Increase observatory level public restroom stalls; they are currently inadequate.
- Provide a family restroom with capacity for large motorized wheelchairs and companion helpers.
- Build a classroom on the east end or attached to the rock hillside above and behind the visitor center.
- Create a green vegetated roof and add solar panels
- Add a private first aid/medical treatment room.
- Replace the in-surface outdoor heating coils to melt ice and snow on the stairs. The system was damaged during new cap rail installation for the center steps. (Glycol leaks) Find less expensive heating sources (heat pumps) for in-surface heating for the main walkway. Currently, visitor center staff are reluctant to deploy this safety feature in winter due to the expense.
- Manage vegetation outside the front entrance to increase sightlines for bears to prevent and monitor close human-bear encounters.
- Improve WiFi capacity.
- Staff office improvements on the first level are good.
- If you remove the bathtub, keep a shower to help visitors warm up after they have fallen through the lake ice. This serves staff also.
- As you increase the staff to accommodate more visitors, be sure there is adequate safe staff room and facilities, including a staff restroom.
- Build sufficient accessible storage for educational and interpretive materials and books
- Rental events are problematic and were deemed inappropriate after several bad experiences. We examined rental opportunities for the visitor center. There was demand but not the ability to charge sufficiently to cover the expense of hosting weddings, dinners, Scout sleepovers, etc. The space is primarily for education. Exhibits were damaged. Rangers had to become security staff and event monitors including entertainment for unruly children of guests. We lack dressing rooms and a commercial kitchen. There are other venues in Juneau that provide these capabilities and charge appropriately; they have professional staff dedicated to event planning, etc. Cleaning the building after rental events is challenging when the center is to be opened the next day for visitors. **Rentals conflict with our primary purpose of providing education and visitor experiences.**
- **Reduce the number of electronic screens.** We have lost the human connection in our rush to provide flashy digital flat screen exhibits. They dominate now. Although flexible for adjusting content, they haven't been upgraded. Keep the salmon forest exhibit and the time lapse glacier retreat video.
- Create an efficient and functional interior heating system. Heating that was located under the window settees regularly froze and pipes burst, creating outdoor cascade that became a frozen waterfall after a night of broken pipes.
- Install remote sensors to alert staff to broken pipes and burglary
- Install windows that can open to allow cross ventilation on hot days
- Blue and gray glacial color scheme is appropriate
- Maintain elevators. New elevators were finally installed in 2017 after many years of frequent summer breakdowns due to overheating. Visitors were regularly trapped inside for up to 30 minutes. On a visit to the center accompanied by the district ranger, Senator Lisa Murkowksi experienced the lurching elevator. The sensation of fear caused her to support funding for the new elevators.

- **Ensure there is adequate operating funds for the MGVC**. The facility and staff have often been starved for money to provide minimal services.

The Discovery Southeast bookstore should remain inside the visitor center and operational year-round with a seasonal outlet in a relocated Welcome Center. The Discovery Southeast-Forest Service partnership has benefited residents, visitors, and especially local artists. The local non-profit has done an outstanding job soliciting Alaska-made books and gifts. The store is well laid out and one of the most successful square footage retail spaces in Juneau. It significantly serves tourists who may have few other shopping opportunities when their tour schedule is full. Furthermore, Discovery Southeast provides excellent educational resources and activities for youth.

FOREST ORDERS

I support all five proposed Forest Orders. They will all lead to safe, fair treatment of users of MGRA.

Dogs must be leashed in the developed recreation areas. All dogs must be prohibited on the Steep Creek Trail boardwalk.

Food regulation outside specified areas is essential to bear-human conflict safety and preventing wild, neutrally-habituated bears from becoming food conditioned. I also object to food service facilities in the Welcome Center or Visitor Center.

Smoking must be restricted to discreet areas designated for that purpose and located away from main visitor areas. The proposed smoking shelter location at the present kiosk site must be relocated far away from that vicinity. Cigarette, cigar, and vaping smoke do not dissipate outside.

Wheeled riding devices in specified areas should be prohibited for safety of all, unless for handicap needs.

Closure of recreation areas is more challenging. Many people find the only quiet outdoor time in summer is early morning prior to 6am. Make exceptions for summer daylight mornings and winter aurora viewing. I appreciate the extension until midnight instead of 10pm.

TRAIL MONITORING

I seriously question the value of trail monitoring by MGVC staff. My observation of this activity was that it was an extra duty for staff when they were actually needed to assist with visitors. They would hike a trail and log encounters. They were not posted at a trailhead for a half day, for example, to count users. They could have been walking in the same direction on a certain trail, such as East Glacier Loop Trail, that was also the same direction as group tours and thus missed many encounters. These trail monitoring reports should not suffice for accurate counts of visitors on trails.

Trail monitoring must be conducted using a scientifically defensible protocol over a period of time when normal cruise ship passenger counts are typical. This material should be added to a Supplemental EIS to accurately assess impacts. The monitoring information in the DEIS is not satisfactory. Service days should not be increased until accurate data on present use is collected and determined.

National Visitor Use Monitoring System (NVUM) data, collected every five years, is insufficient to document usage.

CUMULATIVE IMPACTS

This DEIS excludes the cumulative effects of existing Forest Service permitted activities for the visitor industry. Those tour companies offer helicopter tours that land on the Mendenhall Glacier, Herbert Glacier, and other allocated places on the Juneau Icefield. Other permittees have transportation permits for the glacier.

The noise impacts of permitted tour operations adversely affect the enjoyment of other activities on the lake, on all trails on both sides of the lake, on recreation in Dredge Lakes, and the Visitor Center as well as most Juneau residents in their homes. Noise is the most commonly reported complaint to the TBMP hotline.

Over the 19 years of reported Tourism Best Management Practices (TBMP) complaints, the highest category was flightseeing with 37% of the complaint calls. The next highest category of complaint calls was for vehicles, at 19%. Both of these activities are directly related to MGRA permittees and should be addressed as cumulative impacts. (Source: *City and Borough of Juneau Tourism Document Archive, TBMP Documents and Reports*)

Motorized boats and additional buses would adversely affect noise and air quality conditions in MGRA yet no cumulative impacts have been provided. Because the Forest Service issues icefield landing permits and allows those commercial operations to occur, there must be comprehensive noise analysis studies that predict the total impacts on the human environment as well as wildlife. The helicopter, lake, and terrestrial operations cannot be looked at separately.

EPA, in its DEIS comment letter, recommends including cruise ship emissions and impacts. I agree.

VISITORS SURVEY

The Visitors Survey is inadequate and should not be used as the basis for any project decisions.

- The survey was answered by only 173 people. That is too limited to serve as the basis for a million visitors.
- The survey erroneously extrapolates that number of 173 to 616 people based on the group size of the respondents. Without those other 443 people's direct opinions, one person's answer is a faulty determination.
- The survey was conducted solely via electronic Survey Monkey application; few of Mendenhall's typical older visitors would use this online survey. They are also more likely to spend time inside the visitor center rather than hiking to Nugget Falls. Nor would they be satisfied spending 3-4 hours onsite.
- Averaging responses fails to give an accurate picture of visitors

The Visitor Survey analysis must be discarded. A new survey should be conducted which will devote proper time and techniques to interviewing visitors. The present survey is unacceptable. Sadly, it is a waste of public funds. How much did this survey cost?

BOATS

This plan proposes commercial motorized tour boats (currently prohibited) on the lake.

They require three large DOCKS:

- on the west side for maintenance, storage, and access for several big boats.
- at the pavilion/Steep Creek mouth area for boat launching and docking for multiple daily trips (leaving 15, 20 or 30 minutes each way carrying 30-50 passengers) across to the glacier terminus. Projected passenger load is for 1,000 people per day averaged over several months including April through October (lake is usually frozen in April so peak summer months would see fleets of boats)
- at the glacier terminus with floating dock, a trail constructed through the terminus scree and gravel to a remote visitor center which is a 'pod' that can be moved closer to the glacier as it recedes. Remote restrooms and warming huts are parts of this facility.

This plan negatively affects other users by causing harm. I oppose/object for these reasons:

- Damage to sockeye salmon who rear in Mendenhall Lake (one of only three sockeye rearing sites in Juneau — others are Windfall and Auke Lake
- Danger to kayakers, canoeists, paddle boarders, and any other recreational users
- Wakes and waves on shorelines
- Noise
- Pollution (could be reduced by electric motors but that is still destructive)
- Obstructs the natural, peaceful view we all seek in the quiet glacier places
- Compromises safety for visitors near the glacier and causes disruption for those who hike to the glacier
- Prioritizes commercial users over all other users and creates congestion at the terminus
- NO motorized boats should be allowed on Mendenhall Lake.
- Motorized boats would harm harbor seals who annually appear in Mendenhall Lake particularly in months of salmon spawning; seals gather at the mouth of Steep Creek where the proposed dock would be.
- Docks would need a new beach trail and elevated walkway that compromises bear access, otters, beavers, mink, salmon and other species that would have access harmed, and cause more destruction of natural areas
- Climate change impacts would be increased and contribute to glacier recession

The DEIS fails to describe how much dredging would be necessary at each of the proposed dock sites. For example, the west glacier area is very shallow. Boat trailers to launch one of the rescue boats has had to back 50 feet into the lake to unload a skiff. The proposed site by the mouth of Steep Creek is essential habitat for wildlife. Any dredging and construction would seriously affect the bears and fish in particular. There is no explanation or detail about this effort.

Why is this critical information missing when compared to the Welcome Center which is so thoroughly designed that we can view where toilet stalls would be located inside the building?

Alternative 4 eliminates any motorized boats on the lake. I support this alternative regarding boats, docks, remote visitor center, and shoreline access trails.

INTERPRETIVE PLAN

I compliment the preparers of the Interpretive Plan. There are many aspects of interpretation that have disappeared from MGVC since we removed the original three-dimensional icefield/glacier map. The map was the perfect interpretive tool to explain glacial processes. Rangers were required to have a "Map Talk" to explain natural features seen out the windows. Recent talks have become more focused on wildlife and ranger preferences. I appreciate that a new 3-D map is planned. It should not be outside, as proposed.

Visitors are keenly interested in how glacier ice, trimlines, moraines, kames, kettle ponds, moulins, erratics and other unique glacial features are formed. The new 3-D map should be placed in the original visitor center or in a new hillside center because the elevated view provides better interpretive vistas than the proposed shoreline Welcome Center.

I especially support the proposal to coordinate messaging with other Southeast interpretive sites, such as Glacier Bay National Park, Icy Strait Point, Juneau-Douglas City Museum, and Alaska State Museum.

I recommend annual interpretive training for bus drivers and other outfitter/guide permittees to ensure correct messaging given to guests on tours in the MGRA. Some guides' knowledge is superior to ours. We should collaborate with them. Many tour companies also provide interpretation such as whale watching tours, cruise ship enrichment programs, helicopter and flight seeing tours. We should assist them in providing accurate information.

Revitalize hosting MGVC onsite familiarization tours for Travel Juneau volunteers who speak with thousands of visitors at Juneau's information kiosks.

"Experience the glacier" p 6. I do not support efforts to allow visitors to 'touch the glacier.' See my extensive comments above. Touching glacier ice samples is ideal, safe, inexpensive, and realistic without harming wildlife and other negative aspects of project proposals. Virtual reality devices accomplish the feeling of approaching the glacier, and is a better option.

AUDIENCE

The Interp Plan relies on the inadequate Visitor Survey (Corvus, 2017) of only 173 guests in August and September, 2017, who responded to only electronic survey questions. A new more complete survey must be conducted to provide accurate details about visitor use of the MGRA. The tour operators survey is far better.

JOKULHLAUPS

The Interpretive Plan — and seasonal staff — should be regularly updated to include timely details on Suicide Basin and the frequent jokulhlaups we are experiencing.

The plan (page 30, *Interpretive Approach*) makes an excellent point of recommending geological connection with visitors' home lands and their effects from glaciers. Glacial outburst floods affected parts of the U.S. For example, Dry Falls in Washington State was carved by ancient glacial floods. Plymouth Rock is a glacial erratic. This connection creates relevance.

CLIMATE CHANGE

This is a very challenging topic to discuss with visitors. Depending on the political landscape more than the physical landscape, rangers find it difficult to explain without depressing listeners or stirring political debate. Yet speaking about the forest succession process only mutes the harsh reality of climate change's wide ranging effects, not just shrinking glacier. I hope you develop clear, useful terminology to accomplish this feat.

NUGGET CREEK HYDROPOWER

The Nugget Creek hydropower facility is an important human history element of Mendenhall Glacier.

I recommend creating a detailed interpretive history on the Nugget Creek Hydropower plant.

Signs could be placed on East Glacier Trail and Powerline Trail that explain the artifacts and the operation of this localized hydropower facility: the generating plant, dam, tunnel, pipeline, hoops, staves, penstock, A-J Falls, head frame, overhead cable, mining history and the reason for the construction elements. There are excellent historical photos available to interpret the artifacts.

I urge consultation with Jim Geraghty, who is the best local expert on this information.

I am happy to offer a 9-page narrative written by Alaska Electric Light and Power (AELP) historians the late David Stone and the late Scott Willis. Because AELP purchased the facilities, the records in their possession are the most complete. My copy is from January 2005 when these two outstanding historians presented Nugget Falls hydro's history in a Fireside Lecture.

David is the author, with his former wife Brenda, of ***HARDROCK GOLD***, the definitive history of Juneau's mining past.

I question the validity of the statement on p 34, *East Glacier Loop/Nugget Creek* about AJ Falls being a diversion for Nugget Creek hydro "to provide water to the caretaker's cabin." Please provide the source for that statement.

I agree that the junction with East Glacier and Nugget Creek Trail continues to confuse and disorient hikers. Improvement needs to be made as soon as possible.

ICE LIMIT SIGNS

Create new ice limit signs for Glacier Spur Road and Nugget Falls Trail. Information about the fast retreat of Mendenhall and photographs showing changes are readily available. Replicate the "danger ice limit" signs that were placed along the Nugget Falls beach and visible in the 1970s and 1980s. An original orange wooden exists in the warehouse (or possibly still in MGVC by the JIRP exhibit). Beware that there is considerable pressure to dispose of old signs by non-historian staff desiring space to store their junk.

CATALOG HISTORICAL DOCUMENTS IN JUNEAU RANGER DISTRICT ARCHIVES

Facilitate volunteers' access to these items. Three former Forest Service staff offered to do this work but were discouraged by onerous security requirements.

TRIBAL CONSULTATION

The two transcribed consultations appendixed to the Interp Plan provide excellent information to build interpretation on the Alaska Native stories and history concerning glaciers and

migration routes. One interview is with Dr. Rosita Worl and Dr. Chuck Smythe of Sealaska Heritage Institute. The other interview is with Elder Fran Houston and Lianna Wallace of the Aak'w Kwaan. Both transcriptions are helpful to lay people who are interested in learning Alaska Native perspectives.

In the past, MGVC rangers have been dissuaded from speaking about Native history due to inappropriate interpretation. I felt like that was a sin of omission when i began working at MGVC and on the state ferry with the USFS Marine Highway Interpretive Program. To learn more, I attended Dr. Worl's UAS class in 2004 on Tlingit History and Culture. Now, with Sealaska Heritage Institute and Walter Soboleff Building resources in Juneau, Alaska Native people can tell their own stories in beautiful facilities. However, we still need to include their history at MGVC. I also attended the 2004 100th anniversary commemoration of the Last Potlatch in Sitka. It was intensely meaningful.

It is important to edit and revise the rough translation of the Aak'w Kwaan interview with Lianna Wallace and Fran Houston. Proper names of important elders are misspelled. Start with an apology and correct the errors as soon as possible.

I support dual language names on signs: Tlingit and English. Adding other languages would be useful also.

TRAIL OF TIME

There are errors in the resource section of the Trail of Time description on page 39. Two items are mentioned together: "Rock gabions/Fish and Game structure for planting eggs/fry in the stream to jumpstart the salmon cycle from the 50s and 60s."

First, the gabions were placed after a severe flood in Steep Creek in the 1980s or 1990s that washed out a portion of the creek and road. The gabions were placed upstream of Dipper Falls within my memory.

Regarding salmon fry: there is a mistaken impression that the salmon in Steep Creek are the result of "eggs from Afognak Island deposited on the Mendenhall bar." This statement comes from author Patricia Ropell's Alaska Geographic Publishing book on salmon fishing. However, the sockeye in the creek are genetically related to Windfall Lake sockeye. It is doubtful that eggs at the mouth of Mendenhall River five miles downstream resulted in sockeye in Steep Creek.

Please clarify the source of the statement that ADFG has a Trail of Time "structure for planting salmon eggs."

PLANTS

Upgrade the illustrated plant identification signs posted on the accessible ramp railing. Signs that no longer represent a plant, such as lupine because it no longer grows beneath the sign, can be unscrewed and affixed to the railing immediately.

This is a worthwhile project but it has not been maintained to accurately identify the plants.

My final request is for a complete financial statement of all the funds spent to date on the DEIS, contractors, designs, plans, research, public outreach, and Forest Service staff time. Where has this money come from? How much remains in the budget to be spent on a comprehensive EIS response to public comment?

How much federal money is budgeted to legally challenge Governor Dunleavy's cease-and-desist order?

Submitted with respect,

Laurie Craig
Juneau, Alaska