McCarthy Area Council Meeting Minutes
March 28th, 2019, Tony Zak House

Members present: Trig Trigiano, Laurie Rowland, Keith Rowland, Natalie Bay, Kelly Bay, Dave Hollis, Malcolm Vance, Michelle Latvala, Pete Senty, Stephens Harper, Chris Chester, Greg Fensterman, Livvi Lantry-Wacht, Kaleb Rowland, Britt Rowland, Mark Vail, Patt Garrett and Sally Gibert (via phone), Tamara Harper

Others present: Joe Macchina, Jurgen Ogrodnik, Jarret Hoffman

President Mark Vail opened the meeting at 11:40 am with a quorum of nine members present. A voice recorder was used to record the meeting and two members called in by phone. Motion was made to approve the September 2018 minutes. The minutes can be viewed at the MAC website www.mxycouncil.org.

Mark reminded us that bears are out early this year; protect your food and garbage.

MAC meetings will be at 6:30 pm in May, June, July, and August. April and September meetings will be at 11:30 am.

McCarthy Creek and Clear Creek flooding, road/bridge issues
Mark reminded us that MXY Creek flooded in August 2018, flooding downtown properties along the banks and causing Clear Creek to back up over the road into town near the water hole. DOT raised the roadbed in September (this is only a temporary fix, as Clear/MXY Creeks continue to change and flood, this area is still vulnerable to higher water levels). MXY Creek remains dynamic, as the creek bed continues to rise due to gravel deposition, posing increased flood risk to our road access into town, over MXY Creek and to MXY properties. As deposition continues, MXY Creek will further alter Clear Creek as well, increasing future flooding potential along the main road into town. When the east channel of the Kennicott was active, it would clear away gravel deposited by MXY Creek, but this action no longer exists, thus the gravel builds up, the floodplain expands towards MXY and flooding increases. Rowcon installed a dike along the south edge of town and raised the bridge-access road last fall, and raised the bridge height over the winter due to the higher creekbed level beneath. The Rowlands have written an open letter to the community about MXY creek, to spur community discussion about possible actions we could take to prevent loss of bridge access during the next flood. Please see attached letter with Rowcon's suggestions for remediations.

Past studies of MXY Creek have predicted our current situation; a USDA-NRCS 2005 study is especially helpful in understanding the dynamics of what is occurring and is attached. The creek wants to flow between the Powerhouse and the Commissioner's cabin, as this area is lower than the current creekbed. We need to consider short-term fixes before we have an emergency flood that could strand south-side residents and flood downtown properties. How to fund? Stakeholder contributions? Increased bridge pass costs? Grant? MAC public funds? Barry Hecht, a hydrologist, weighed in with his thoughts also—letter attached.

Flooding at Clear Creek water hole last year shows the road's vulnerability and its potential to block access to town. Should we consider building up the road higher at the water hole? At the swimming hole? Re-route the road back into the DOT right-of-way (ROW) along the footbridge over the east channel? DOT is currently calling for applications for local transportation projects, due May 15th. In late summer 2018, the road was flooded and caused access, water, and health problems, including vehicle accident/bodily injury, and we need to prevent this in the future. Businesses and locals suffer when we and visitors cannot reliably get into MXY/Kennecott/Park. Could we apply for funding to improve the main road by raising its level, installing larger culverts, and possibly realigning it to the ROW? (it currently goes across NPS land).

We discussed the importance of taking action on both areas before there is an emergency situation and whether state project money would be a good fit for either/both. MXY Creek options range from the cheapest/fastest fix of raising road bed leading to bridge, reinforce and remove gabions above bridge (approximately $100,000), to a dike running from upstream of Barretts' land to town (at least $700,000). The bridge also needs to be longer to span increasing/changing creek width. Possible groups that could help split costs…MCLOA, MAC, MXY landowners, Nizina landowners, Dan Creek landowners. It was noted that it's a

private bridge across private land that provides access to landowners who will need to pay to maintain that access. Grants/public funding sources will need to be pursued/applied for to help with costs. Private property owners that may be impacted by road/bridge work should be notified.

The road into town is a public road and DOT has a responsibility to maintain. Different funding sources and strategies may be needed to tackle each issue. The two areas are related hydrologically, and when MXY Creek floods, we'll likely have access issues again along the road into town.

We created a small working group to review documents, research options on both issues, and explore funding sources, including Greg Fensterman, Sally Gibert, and Keith Rowland as a technical advisor. They will report next meeting; if anyone wants to help them, contact Sally or Greg. sgibert@aol.com, greg.fensterman@gmail.com

Resources related to the MXY and Clear Creek issues include:
http://www.dot.state.ak.us/stwdplng/cip/stip/projects/2023_ctp_peb.shtml
the DOT website explaining the application process for local transportation projects, due May 15th.

See attached documents:

- Rowcon MXY Cr. letter
- Hecht MXY Cr. suggestions
- 2005 Inter-Fluve MXY Creek Mgmt. Study
- MXY Creek elevation map post-2018 flood (provided by Mike Loso, WRST geologist. This data is provisional, with elevations that are not yet tied to a local benchmark, so they're all very accurate relative to each other but may differ slightly relative to other maps. Please contact Michael_loso@nps.gov for more information.)

NPS Update—Stephens Harper
The Superintendent's letter to our community will be ready at the April meeting, full of plans and updates for the season.

Stephens addressed a local rumor that the NPS purchased the land at the end of the MXY road. This is not true. The NPS was in negotiations with the estate executor, who approached the NPS a year ago and asked that the potential land sale remain confidential. The NPS was interested in buying, had an appraisal done, and made an offer which was not accepted. Another buyer is now in process of purchasing the land. Stephens said it would be inappropriate for the NPS to share the identity of the buyer. When the sale is completed and the deed is recorded with the state, it will be public knowledge.

He touched on the recent Supreme Court decision on the Sturgeon vs. NPS case, which allows hovercraft use on navigable waterways within national parks in Alaska. He'll keep us updated how this will affect NPS regulation as he gets direction and information from NPS leadership. The Court said the Katie John case remains law, allowing the federal government to manage subsistence fisheries.

The Kennecott Operations Plan (KOP) 5-year review/revision started last year and continues this year.
The first public workshop about the KOP will be after next MAC meeting on April 25th, at Tony's. Anyone interested in how Kennecott is managed in the future is welcome to participate. Friends of Kennicott will host a second workshop on May 29th in Kennecott. The NPS will hold another public workshop on August 27th at the Kennecott Rec. Hall and another on Sept 12th at Tony's. Stephens encouraged participation in these meetings; community involvement is critical to effective management of Kennecott.

NPS and MXY EMS are sponsoring a WFR recertification class in Kennecott, May 17-19th for $375. You can register here: https://eastbasinco.coursestorm.com or email the instructor Steve Lanwermeyer at eastbasin@gmail.com.
Jacob Shultz will teach a CPR/AED class on June 18th in Kennecott. Anyone who was on the community EMS call-out list last year can take this class for free. Otherwise, the class costs $100.

Westside Road Maintenance 2018 report and project proposal 2019—Keith Rowland
Keith reported he did three summer gradings and two plows on the westside road in 2018. They received donations from 17 people and will submit their bill to MAC for project funding approved last year. He submitted a project proposal for continued gradings and plowing this year, requesting $1,920 from MAC, which is 50% of project cost. We will vote on this proposal at the April meeting. Please see proposal attached with minutes: Westside Maintenance.

Financial/Treasury Report—Tamara Harper
Community assistance money from the State of AK is available through MAC for projects that benefit the community. We received $25,654 from the state for 2019, $7,500 goes for operation expenses, $6,154 will be saved and $12,000 will be allocated for projects. Each project proposal may request up to $2,400 this year, and all projects must show at least 30% of costs are from sources other than MAC. Guidelines for applying for project funding are at the mailshack and on MAC's website, www.mxycouncil.org.

Financial activity since our last meeting, September 2018.
Checking account balance: $9,802
Savings account balance: $96,995
1, 2 and 5-year CDs balance: $104,677

Deposits:	$1,131	all interest
	$25	dues
	$6,000	private donation
	$317.50	reimbursement for ½ AED for University subdivision, from MCLOA
Expenses:	$40	EMS phone fee
	$139	14 folding chairs for Tony's
	$2,260	2018 MAC secretary salary to Tamara Harper
	$24	office supplies
	$237	website domain/plan fees

Motion made to put another $25,000 in a 5-year CD, so that we have a CD coming due each year.
Motion seconded and passed.

Announcements:
Many people needed assistance on the MXY road this winter. Please be aware that the MXY road can be hazardous to travel in winter and drivers should be prepared with chains and rescue equipment. We cannot count on DOT road maintenance, due to lack of funding, so we must prepare ourselves adequately for unpredictable road conditions.

Mark Vail adjourned the meeting at 1:25 pm.
Next MAC meeting will be Thursday, April 25th, 2019 at 11:30am.
Minutes taken by Tamara Harper, Recording Secretary.

Proposal for MAC Revenue Sharing Funds

Sponsor: **Keith Rowland**
Box MXY #51
McCarthy, AK 99588
(907) 554-4498

Date: **March 28, 2019**
Project: **West Side Road Maintenance**

Explanation: The West Side Road provides year-round access for many McCarthy area residents.

This proposal would fund two summer bladings and three winter plowings, from John Adams' residence to the end of the West Side Road (Welty's driveway).

Cost Breakdown:

12 hr	14G Road Grader (summer blading)(6 hr ea)	$1920.00
12 hr	14G Road Grader (winter plowing)(4 hr ea)	1920.00
	TOTAL Cost for one year	$3840.00

Requested funds from MAC: **$1920**
Matching funds solicited (50%): **$1920**

Respectfully Submitted,

Keith Rowland
Member, McCarthy Area Council

OPEN LETTER REGARDING McCARTHY CREEK

PLEASE NOTE: The following information is in response to requests for what I see happening and what I would do about it. This info is respectfully submitted and is not a solicitation for work. I welcome your input on this topic and hope it will generate proactive discussion among user groups.

"Current" Situation: This past summer the McCarthy Creek floodplain near McCarthy aggraded (raised) a significant amount. This was predicted in a hydrologic study years ago, and it presents potential problems for those who rely on access to the south side of the creek. The floodplain has elevated so much that summer creek levels are just below the bridge deck. The floodplain has crested many of the upstream finger dikes, and the current wants to cut behind them, flow across the road, and run downstream between the Powerhouse and the Commissioner's cabin. So far ROWCON has prevented this by "plugging holes" as they have developed. However, this is strictly a stop-gap measure. It's only a matter of time before we experience a large-scale breach that could leave McCarthy Creek impassible—and then everyone across the creek will be impacted!

Initial Remediation: ROWCON is raising the bridge 3 feet in order to allow flood waters to safely pass. The work is expected to cost approximately $94,980, and is now in progress (12/18). To partially offset cost, McCarthy Creek bridge passes will be increased by $75. We regret the necessity of this, but can see no other way around it.

Raising the bridge, although necessary, does not address the issue of the expanding floodplain.

Long-Term Remediation: Here's a proposed scope of work to prevent McCarthy Creek from bypassing the bridge:

- Raise the road approximately 8 feet so that it would be level from Seltenreich's cabin to the bridge.
- Line upstream side of raised road with riprap.
- Remove gabions above the bridge to allow water access back to the main floodplain.

The creek would be allowed to claim the low area above the road and then be forced out under the bridge. This fix would protect road/bridge users, Powerhouse, and Comm'r's cabin, but not upstream properties. (See diagrams.)

Cost: ROWCON estimates this remediation project to cost $95,000 – $115,000.

Be advised that road repairs are not the responsibility of ROWCON, the Powerhouse, or the Commissioner's; neither are they linked to management of the bridge. The responsibility lies with all those who use the road.

Implementation & Payment Options which acknowledge this communal responsibility:

1. **Do Nothing Now.** If and when the creek reroutes on the town side of the bridge, ROWCON will likely be called in to do emergency work with no responsible party to pay the bill. The total cost of repairs would be higher due to the emergency nature of the work. ROWCON would probably be inclined to do the work, passing on the cost by increasing bridge rates—probably nearly double the current rate.
2. **Stakeholders Pool Resources.** McCarthy Cr. Lot Owners Association, as an organized entity and the largest contingent of bridge/road users, could organize all stakeholders (i.e. Univ. Subd., Powerhouse & Commissioner, Nizina Sub's., Dan Creek miners, etc.). Each pays their part, the work gets done and paid for before the emergency, and bridge rates remain unchanged.
3. **A grant** is pursued to cover the cost of the work, and bridge rates remain unchanged.

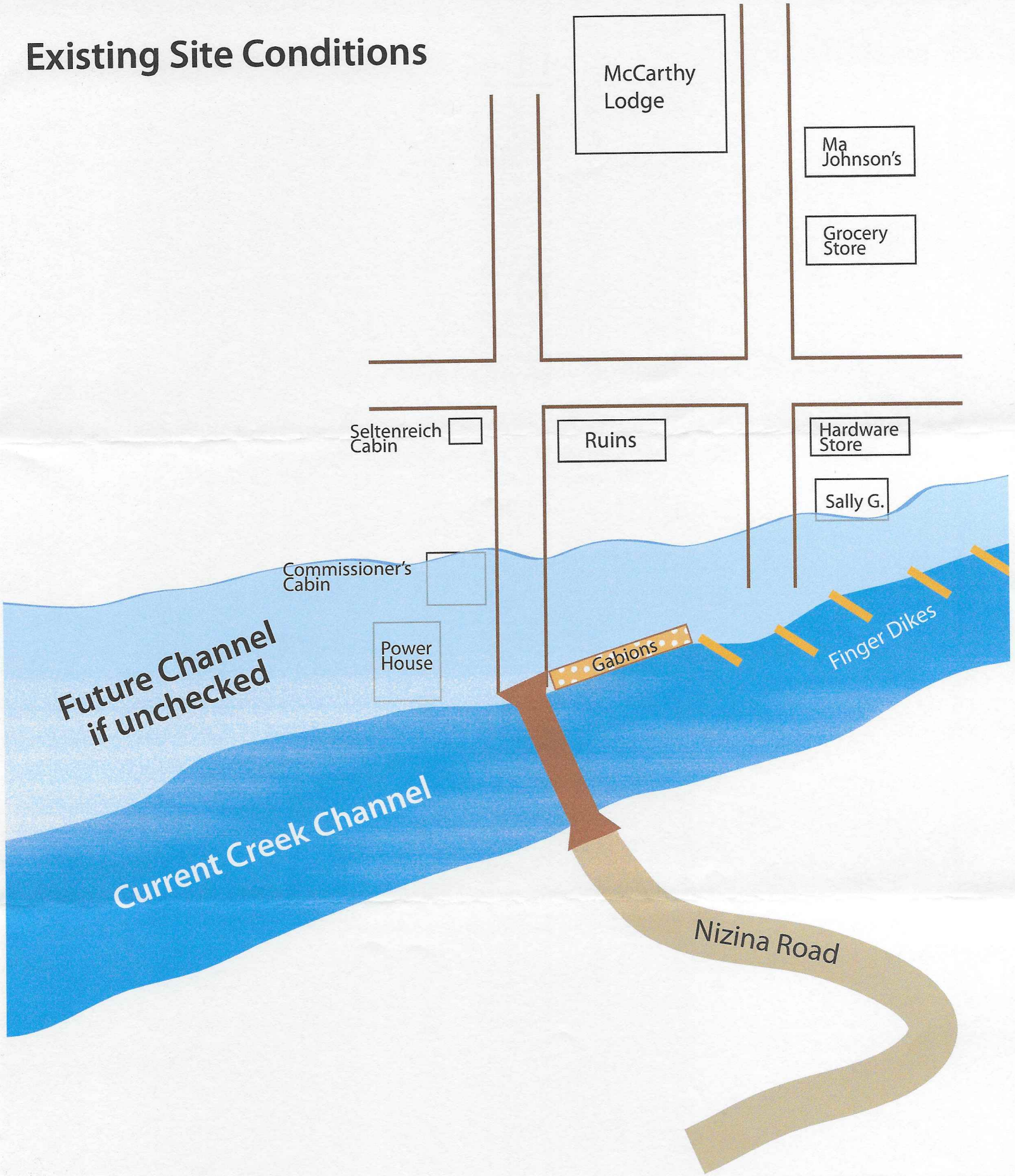
In conclusion: It's probably not a matter of if but when there will be a catastrophic breach of McCarthy Creek that will leave many residents stranded. If we act now, then the work can be done at a time of our choosing for minimal disruption to users of the road and bridge. But if we take the "do nothing now" approach, then at some point the creek will breach, necessitating emergency remediation. It is highly plausible that this could occur during summertime, as was the case with the recent flood event. Acting now rather than in a crisis also allows for more payment options.

I hope you'll give some time and thought to this issue. Constructive feedback will be welcomed!

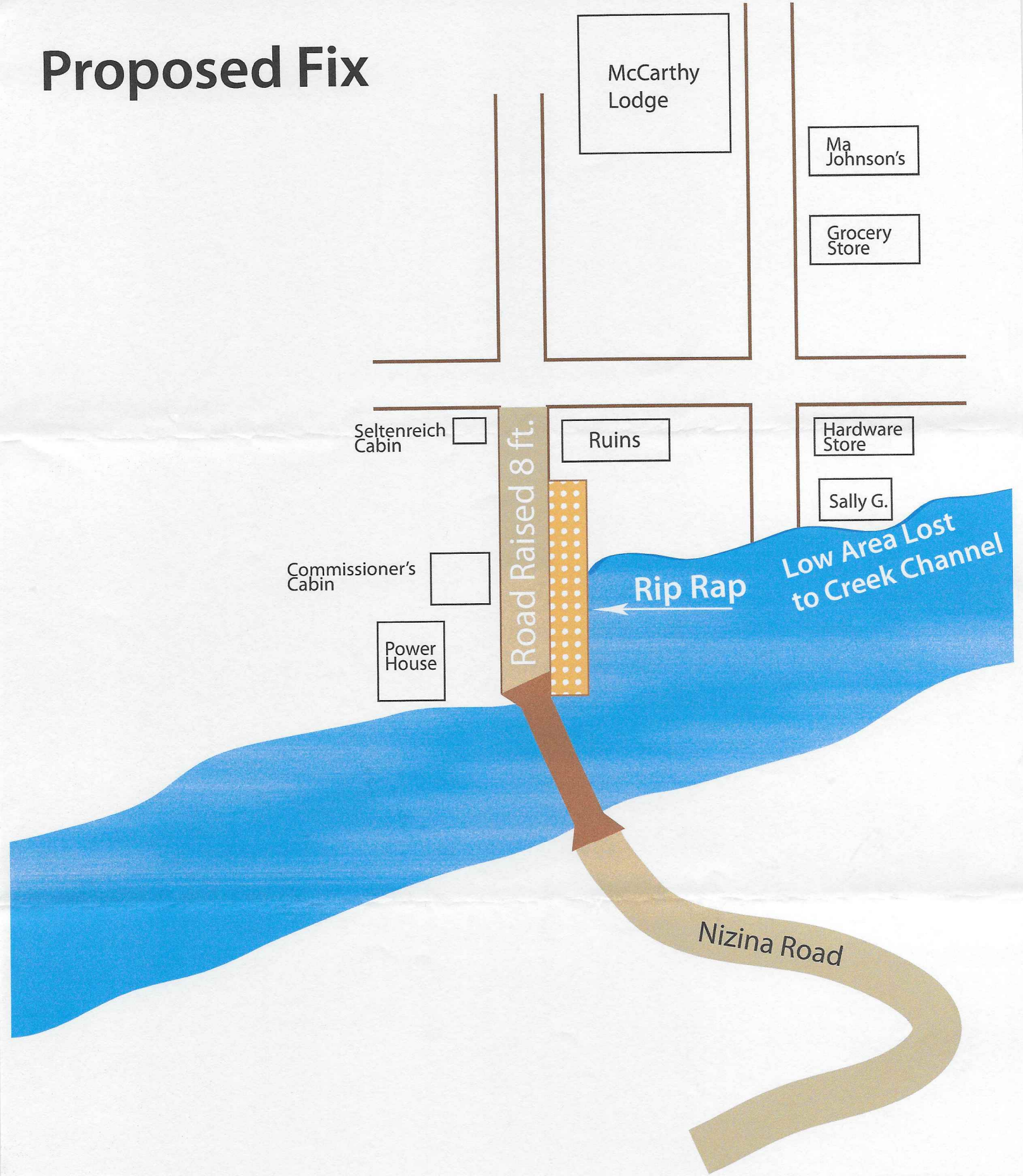
Respectfully Submitted,

Keith Rowland, ROWCON

Existing Site Conditions



Proposed Fix



219035 MXY Cr immediate suggestions(3)

March 26, 2019

Dear Sally and Dave:

Thanks for sharing with me some of the ideas swirling around. I wish I had more time to respond more fully. It is raining hard right now, and I have a storm day tomorrow. And, Sally, you're right, I have been away. So, reality is brevity.

First, Keith's letter strikes a great tone. McCarthy Creek's floodplain is going to widen, and rise over the foreseeable future. And it is up to us to find answers of some kind. And pulling ideas from various places and people is a good start, as long as we keep moving ahead. [I'm sorry that I was away when MAC was discussing these issues]. I only wish that Keith (and friends) were part of some of the other communities where I've worked.

I have a few suggestions re how to approach the geomorphic setting and time, hydraulic design, approaches to bridge design, on responsibilities and on tasks going forward.

Geomorphic setting and time frame

We need a better understanding of the rate at which aggradation is occurring, and where.

There is legitimate question over what the rate of aggradation has been and will be. Aggradation during August 2018, Keith reports, was about 3 feet at the bridge. My observations indicate similar accumulations on the bars at and upstream from the bridge. That doesn't mean, of course, that we should expect 3 feet of buildup each year. Briefly, long-term aggradation **on average** is expected, as McCarthy Creek's coarse sediment load is no longer being swept away by flow in the East Kennicott River. A different view finds that the 2018 aggradation is due to so much coarse sediment entering the stream, much as occurred in 1981, and which gradually cut down to the former base level. That is of more than academic consideration because it affects (a) how high raise improvements, and (b) of perhaps equal importance, whether improvements (including bridge supports) should be designed for scour. Protection of proposed improvements from downcutting or even transient scour may or may not be warranted under the second

scenario; conversely, improvements might not need to be built so high. In reality, the truth is likely somewhere between the two extremes, and without further answers at this time, we may need to prepare for both.

For those who believe that upstream deposition is the main driver of aggradation in lower McCarthy Creek, it may make sense to consider moving the crossing site upstream, perhaps on the order of a quarter mile.

We need to know where the sediment and water will be going after they pass the bridge.

Most planning to date has been faced upstream from the bridge. Yet we do need to know where sediment, water, and energy may go after they pass the powerhouse. It may be that channel behavior at the bridge may be influenced as much by aggrading elevations moving up the river as by what happens upstream of the bridge.

One way to address that question is to map where deposition occurred last summer. Keith is proposing to close (or restrict) the channel which ran between the Commissioner's House and the Powerhouse. It would help to know how much sediment was deposited at the west end of that channel last year, so that allowances can be made for that sediment where that sediment would be deposited in the future. A number of similar questions can be asked. A reasonable estimate can be made using a LiDAR map (discussed more below).

Early and effective input from NPS

Again, looking downstream, the National Park Service owns much of the land west of the Powerhourse, basically from the former course of Clear Creek. I may not be up to date on NPS thoughts on routing floods, sediment and water through these lands. If there are habitat values, elevation thresholds to manage for drainage, or equipment access corridors which they seek to sustain, this would be a good time to bring these to the fore. Conversely, it could be harmful to wait until the community and individual neighbors have expended resources to raise concerns which might be effectively integrated at this time. As noted above, bridge and floodplain planning is best done when considering the channel reach about 20 channel widths upstream and downstream of the bridge.

It is not inconceivable that NPS will seek monitoring of the bridge's effects on this reach. Particularly if so, specifying or providing a basemap is a useful step. Conversations last year indicated that NPS had contracted for a LiDAR base; although it may not be to survey grade, a strip map of the river could be very, very useful at this stage, as well as identifying the positions of facilities (such as Porphyry Place, or individual existing groins) not on Keith's colorful cartogram.

Southern Rampart slide

One alternative to consider is widening the channel to the south. The 30-foot-high bluff opposite the Powerhouse appears to be the toe of a large, slow landslide slipping gradually into McCarthy Creek. Large, deep and fairly fresh cracks can be seen about 100 yards to the south on either side of the road going up the hill to the "small airstrip" mark the scarp at the head of the slide. At the creek, the toe of this slide is perpetually eroding; almost every photo that I have seen of this area over the past 100 years shows the dark-grey glacial till raggedly falling into the creek. It may be that the creek will continue migrating to the south. Or, the rate of migration might be accelerated with earth movers. Because the widening would be on the inside of a bend, movement of cobbles and small boulders would tend toward this side. I do not know who owns or controls this block of land; that and many other considerations would need to be explored.

This slide(?) does not appear to affect the alignment of the existing bridge or the south approach.

I had planned to map the purported slide in greater detail this summer, anyway. If anyone wants to join me during the day or so that the mapping may take, please let me know.

Hydraulic design

This all leads to questions about several specific steps or locations in the present design approach. Any such comments rest on what the reviewer is assuming you envision doing in final design to address the issues (those follow in italicized parentheses):

a. Possible undermining of 8-foot raised road levee: How might scouring under the riprap armoring the 8-foot raised-road levee be prevented (cutoff wall?)
b. If road is overtopped, how is it protected from backscour (build it higher? But theres not much higher to go?)
c. Point scour at corner getting under road, riprap or gabions/groins built to protect Powerhouse (Build riprap and road on very large riprap)
d. Flooding Pat's house, which sits low in a swale.

To my mind, c. is especially problematic, as it looks as if you are creating 5+ feet of head ready to flow around the corner, undermine facilities and then flow directly toward the Powerhouse.

Also to my mind, these design approaches, issues, and questions are best addressed with basic hydraulic models, such as one of many versions of HEC-RAS. The model will answer questions about how high water levels may come relative to the buildings or levee(s), and how much freeboard you may have beneath the bridge deck. Cost of such models have dropped sharply over the past several years, and I believe there are several folks in the valley who can run them. This is the right way to go.

Future water-supply pipeline.

As part of the 1997 aquifer study, Ed LaChapelle and I identified the west end of the small airstrip as one the best potential water-supply sources for the community of McCarthy. There is no imminent need to move the community water source, but if there were, this location has marked reliability, water-quality, and distribution advantages over other potential water sources. It would be logical for any insulated pipeline would be "hung" on the bridge. While neither a major nor urgent consideration, it would be useful if the bridge design or planning for the bridge approaches were not constrained or precluded.

Responsibility Framework

A team framework is warranted. Keith's idea have a lot of merit, and his concepts should be considered and tested by individuals with different skills and perspectives. A framework is needed.

A framework worked well on the 1997 Aquifer Protection program, for which MAC coordinated contacts from beyond the immediate McCarthy community. That included raising nominal funding, but the funding carried with it responsibility for mutual attention and respect.

Closing

Thanks for the opportunity to comment, and to help move action along appropriately. Let me know how I can help.

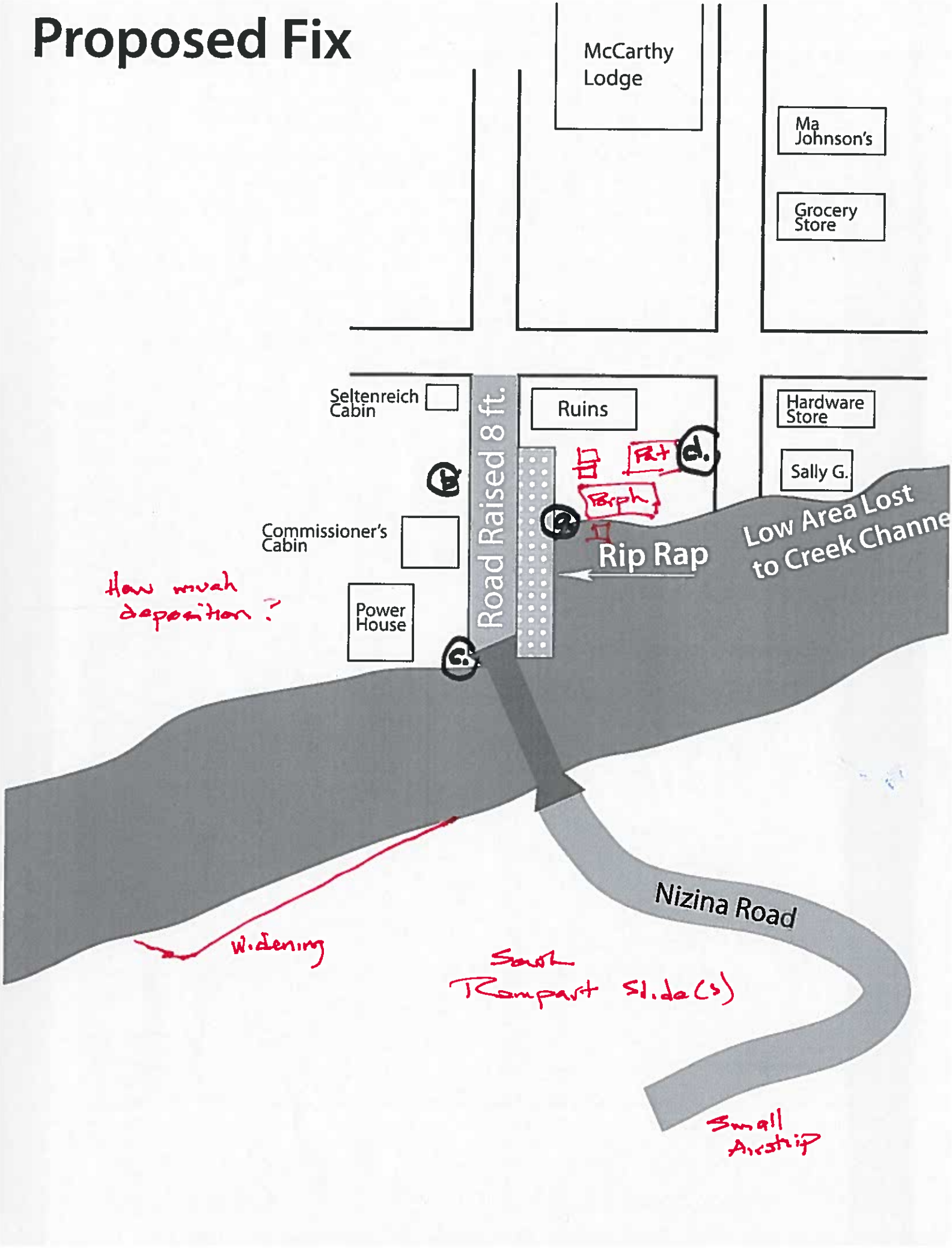
I will not know for a couple of weeks whether I will in town during my envisioned June 10 to June 30 window, or if I will have to postpone to the second half of July. But I do intend to be there.

I wish that I could join you today.

Cc: R. Fensterman, R. Mylius, B. Shaine

Attached: Markup of Keith's map

Proposed Fix



McCarthy Creek
Floodplain Management Study
RFQ AK-04-019

(Photo by AeroMap, Inc., Anchorage, Alaska)

Prepared for:
USDA Natural Resources Conservation Service
590 University Ave
Fairbanks, AK 99709-3661

Prepared by:
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June 28, 2005

inter·fluve, inc.

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Request and Authority for Study

This study was conducted under contract to the USDA Natural Resources Conservation Service (NRCS) Contract RFQ AK-04-019.

Study Area

The study area is located at the Town of McCarthy, Alaska. McCarthy is located in the Wrangell - St. Elias Mountains. The Town of McCarthy was founded in the early 1900s as a mining town near the confluence of McCarthy Creek and the Kennicott River. The study is centered around the confluence area of the McCarthy Creek valley and the Kennicott River valley. The Kennicott River flows into the Nizina River which flows to the Chitina River which flows into the Copper River ultimately discharging into the Gulf of Alaska. Additional information on geologic and hydrologic conditions of the McCarthy area is well documented in publications by Jones and Glass (1993) and Rickman and Rosenkrans (1997).

This study considers the McCarthy Creek watershed (as shown in Appendix 1, Figure 1) with focus on the reach extending from the current confluence of McCarthy Creek and the West Fork of the Kennicott River upstream approximately 5.6-miles (as shown in Appendix 1, Figure 2). To provide the authors with a better regional perspective of the study area, an overflight of the creek was conducted that included 14-miles of McCarthy Creek above town as shown in Appendix 1, Figure 2 and down the Kennicott River to the confluence with the Nizina River. The primary stream section of concern is located at the historic Power House at the south edge of town near the Nizina Road crossing and extending immediately downstream through an area where McCarthy Creek sediments are depositing and forming an alluvial fan.

Purpose of Study

The historic status and tourism based economy of the Town of McCarthy depends on reliable access to and maintenance/protection of historic structures within the town. These issues came to the forefront recently as the historic Power House was inundated during the September 2000 flood and is at increased risk of flooding as McCarthy Creek aggrades. In addition, the town's water supply comes from an adjacent drainage, Clear Creek, which is also being impacted by the instability along McCarthy Creek. Changes in the sediment regime and hydrology of McCarthy Creek and abandonment of the East Fork of Kennicott River have created a change in sediment transport process that has and will continue to create local bed aggradation near the Town of McCarthy.

In an effort to understand conditions that are causing this change in river process, the study presented in this report includes a site investigation conducted in October 2004; interpretation of historic aerial photographs; review of existing

literature; and, analysis of local geomorphic, hydraulic and sediment transport conditions.

Existing Conditions

McCarthy Creek has been downcutting through lacustrine and glacial outwash sediments following the recession of a Pleistocene periglacial lake. The terraces formed by the downcutting are steep and as much as 200 feet higher than current creek elevations. The terraces are composed of poorly consolidated sand, silt, clay, gravel and boulders and become unstable when saturated.

Although McCarthy Creek has had a historical trend of downcutting through previously deposited sediments, air photo and field evidence indicates large volumes of sediment have been delivered to the channel from landslides and debris torrents from valley wall and unstable terrace sources in the last 25 years. This recent increase in sediment supply seems to be promoting deposition within the study area. There appears to be two main processes behind the sediment deposition causing flooding near McCarthy. The first is due to increased sediment delivery to McCarthy Creek as evidenced in Appendix 1, Photos 1 through 4, 7, 9 through 15 and 20. The second is a reduction in the sediment transport ability of McCarthy Creek above town (the supply reach) to McCarthy Creek below town (depositional reach).

The following sections discuss processes and reasons behind elevated sediment loads near McCarthy that are filling the channel and creating flood problems. Historical aerial photos, previous study reports, personal interviews, field survey and aerial over flights were used in the analysis and conclusions presented in this report.

Sediment and Stream Processes

Basic geomorphic stability in alluvial river channels is maintained when the type and quantity of sediment entering a reach of river equals the type and quanity transported out. Therefore, one could expect lateral and/or vertical bed instability to occur if watershed scale erosional processes increase the amount of sediment supplied to a channel without an equal increase in the ability to transport it away. Instability could also occur if existing sediment supply is maintained but the the ability to transport it away is reduced. Both conditions would cause incoming sediment to deposit, raising local streambed elevations. As sediment accumulates, flow capacity within the channel boundaries is reduced. The accumulations increase the tendency for a given stream flow to flood adjacent surfaces or increase potential for lateral erosion. Eventually if sediment supplies increase further, alluvial single thread channels reach a threshold and develop braided channel patterns and avulse across former floodplain surfaces. Braided channels often have highly erodible and unstable banks and are common in high sediment load environments.

Field Analysis of Sediment Sources

Accurately quantifying rates of sediment supply and transport abilities to determine channel stability is difficult without long term measurements of discharge, sediment, topographic survey and hydraulic data. However, it is possible to deduce general trends in relative transport and supply conditions through field analysis, hydraulic and sediment transport analysis, historical air photo records and local knowledge.

To that end, field visits and interviews with local residents were completed along McCarthy Creek in October 2004 to help gain an understanding of the causes of local instability near the town of McCarthy. Slope failures and debris torrent tracks were observed in the field and during aerial and field reconnaissance of the watershed. One recent debris torrent track was observed exiting the Nikolai Creek tributary channel as shown in Appendix 1, Photos 1 and 2. Nikolai Creek has been previously identified as a major contributor of sediment due to large concentrations of landslides within the watershed (Jones and Glass, 1993). Bank erosion is evident throughout the McCarthy Creek system, examples are shown in Appendix 1, Photos 3, 4, 7, 12, 13, 14, 15 and 20. Landslides and slope failures were observed approximately 2.2-miles upstream of the town of McCarthy on a lacustrine terrace forming the south side of the valley as shown in Appendix 1, Photos 9 through 11. Measurements of a remaining tree covered segment of the old slope surface of this terrace indicates a 8-10 foot depth by approximately 200 feet wide block of terrace has been eroded and the material transported downstream.

Tributary and upslope landslides within tributaries such as Nikolai Creek and adjacent valley terrace slope failures appear to be contributing large volumes of sediment as observed aerially and on the ground. Obvious sediment levees parallel to the Nikolai drainage were observed during aerial reconnaissance indicating that Nikolai Creek has produced significant debris torrents in the recent past as shown in Appendix 1, Photos 1 and 2. Nikolai Creek was not observed from the ground.

Sediment sampling

Five bulk gravel samples were collected during the field investigation. These samples were collected to provide a basis for determining McCarthy Creek's ability to transport sediment. An additional sample of source material was also collected to characterize materials delivered to McCarthy Creek, Four samples (MC-1, MC-2, MC-4 and MC-5) were taken from the stream bed gravel bars. These four samples can be considered representative of frequently mobile material sizes. Approximately 50- to 70-pounds of gravel was dug by hand from an area approximately 18- to 24-inches in diameter and placed in a canvas ore sample bag. Samples were a composite of the surficial layer and underlying

gravels. The other sample (MC-3) was taken from a bank exposed from a terrace landslide and viewed as a sediment source. A description of the gravel sample locations is provided in the table below. Photos of the sample locations are included in Appendix 1, Photos 3, 6, 11, 20 and 25.

Sample ID	Location	Description / Photo no.
MC-1	At upstream limit of field investigation. Approximately 4.1-miles above town	Gravel bar. Appendix 1, Photo 3
MC-2	Approximately 2.6-miles above town	Gravel bar. Appendix 1, Photo 6
MC-3	Approximately 2.2-miles above town	Terrace bank exposed by landslide. Appendix 1, Photo 11
MC-4	At town opposite the Power House	Gravel bar. Appendix 1, Photo 20
MC-5	Approximately 0.5-miles below town	Gravel bar in abandoned East Fork Kennicott River. Appendix 1, Photo 25

NRCS staff transported the samples to Fairbanks for mechanical sieve testing (ASTM C-136) by Shannon and Wilson, Inc. The sieve testing is conducted by passing the gravel sample through a series of stacked sieves. The sample is passed down the stack through sieves with progressively smaller openings until trapped by the appropriately sized sieve. The gravel retained on each sieve is weighed and compared to the amount of sample with smaller (finer) sizes. The result is a distribution of sizes with the corresponding percent of sample that is finer than each sieve size. This provides a grain size distribution (GSD) of the gravel sample. Results of the gravel sample sieve testing are included in Appendix 2. Streambed samples MC-1, MC-2 and MC-4 were classified as poorly graded gravel. Sample MC-5 is located in the old East Fork Kennicott River channel in a wide, depositional reach and was noted to have more fine sediment as it is classified as a poorly graded gravel with sand. The bank sample MC-3 contains more fines than the bed samples and is classified as a poorly graded gravel with sand.

The gradation of sample MC-3 (material sampled from the bank) fits well as a sediment source for the other stream bed samples. The finest material sizes in the bank sample would likely be wash load and transported through the McCarthy Creek system leaving the larger gravels within the channel.

The GSD results of the stream bed samples were used in the hydraulic and incipient motion particle size analyses to determine frequency of mobilization and tendency towards deposition or erosion.

Historic Aerial Photos - McCarthy Creek Channel Patterns

Historical aerial photos provide information as to the condition and processes that were occurring on the landscape before each photo was taken. Comparing photos within the years of record and combining additional knowledge of historical topographic survey, flood frequency or other pertinent local information provides clues to the process changes that may have occurred through time. A series of historical aerial photo sets from the years of 1957 and 1970 (USGS), 1994 and 2003 (AeroMap, Inc) were utilized in this analysis.

Though not aerials, two photographs taken in 1924 and 1938 from the bluff south of the Town of McCarthy show the Power House and the location of McCarthy Creek. These photos were observed at the Ma Johnson Hotel in the Town of McCarthy and are not reproduced in this report. Both photos show the alignment of McCarthy Creek near the present day northern limit of gravel bars. Both photos show the bed elevation of McCarthy Creek to be several feet below the flood terrace and present day stream bed elevation. Timber retaining walls are evident along the north stream bank presumably to prevent erosion and mass wasting of the bank.

A single thread meandering channel pattern is indicative of a channel moving its sediment load downstream. A braided channel pattern is indicative of a channel with more sediment than can be moved within a single thread channel. Before 1970, the channel above and below McCarthy was beginning to develop some single thread meandering channel pattern within its valley bottom. Following floods in 1980 and 1985, the 1994 air photo set shows very active braiding that is indicative of a channel much more limited in its ability to transport incoming sediment and less vertically and laterally stable than the channel observed in the 1970 air photos.

Riparian vegetation is another indicator of relative channel stability. Channels that have vegetated floodplains indicate they are stable enough to allow vegetation to become established and grow. Unstable channels shift so often and rapidly that riparian vegetation cannot become established (e.g. Appendix 1, Photos 13 through 18 show various stages of erosion removing vegetation, sediment deposition and reestablishment of vegetation). The 1957 and 1970 air photos indicate substantial riparian area vegetation adjacent to McCarthy Creek. By contrast 1994 and 2003 air photos (following floods in 1980, 1985 and 2000) show very little vegetation across the McCarthy Creek active channel area and floodplain. The difference in riparian vegetation abundance observed in the air photos in the 13 years between 1957 and 1970 and the 9 years between 1994 and 2003 suggest that a stability threshold was surpassed between 1970 and 1994 that is observable within the air photo record. It is difficult to determine whether this threshold change is caused by a greater frequency of large flood events, greater volumes of sediment entering the stream channel or some combination of both. The poor resolution of potential causal factors and limited

quantitative data make conclusions based on watershed scale sediment and hydrologic processes dependent on field observations, air photo evidence and experience.

McCarthy Creek continues to exhibit a braided channel pattern in the lower 3.8-mile reach; above and below the Town of McCarthy.

A comparison of the location of the active McCarthy Creek channel near town in each of the four aerial photo years is shown in Appendix 3, Page 5.

Erosion Processes

Landslides, debris flows and bank erosion appear to be substantial sources of existing and future sediment load to McCarthy Creek. The amount of sediment each source produces is dependent on the degree and intensity of stream discharge associated with each event. Situations that produce landslides or slope failures that are accompanied by large volumes of stream discharge are typically intense, long duration rainfall events, rapid snow melt and/or rain on snow events. Dam break floods caused by earthquakes, avalanche or precipitation related slope failures could also provide large volumes of sediment to the channel.

Several landslides were observed in the field (e.g. Appendix 1, Photos 1, 2, 5 and 9 through 11) and the historic air photo record. Most of these slides have occurred since the 1970 air photo was taken. It appears slope failures and debris flow activities have substantially elevated sediment loading in McCarthy Creek between the 1970 air photos and 1994 air photos.

Recent Flooding

Triggering events that increase watershed sediment and channel instability are long duration high precipitation events, rain on snow or warming with rapid snowmelt. There have been three large floods in McCarthy Creek in recent history. Floods that occurred in September 1980 and August 1985 washed out bridges, caused lateral erosion and scour of McCarthy Creek and sediment deposition near McCarthy. In September 2000 a rain on snow flood occurred in the watershed and conditions near the Power House were captured on video (Marrs, 2000). What can be viewed in the 1994 air photos shows the degree of instability caused by the 1980 and 1985 flood events. Air photos viewed in 2003 show continued instability from the 2000 flood.

McCarthy Creek Flood Responses

Based on analysis of historic aerial photos, it appears the 1980 and 1985 floods destabilized the watershed, floodplain and channel to a point that could not easily be recovered by natural re-colonization processes of vegetation. Local observations determined that following the 1980 flood the channel showed signs

of filling (Edward LaChapelle personal communication, 2004). Landslides are visible in the 1994 photo record following these two floods. These slope failures are continuing to produce sediment, based on 2004 field visits. Local residents describe the 2000 flood as further destabilizing the channel causing the channel above and below the Town of McCarthy to fill and laterally migrate. Most of the town of McCarthy sits on a mid level alluvial terrace. Several structures, including the historic Power House, sit on a low level alluvial terrace that is more frequently flooded by McCarthy Creek as a result of recent sediment deposition.

Analysis

Analysis of hydrologic, hydraulic and sediment transport conditions near the town of McCarthy were conducted. The results of these tasks were combined with field observations and historic aerial photos in order to gain an understanding of the cause of sediment deposition and flooding conditions.

Hydrology

Estimates of McCarthy Creek flood flows were made by the NRCS from Log Pearson Type III from a 9-year period of USGS crest gage data (USGS 15210025 “MC CARTHY C AT MC CARTHY AK”). The USGS gage is located on McCarthy Creek very close to town. Flow estimates are summarized in the following table. The NRCS report and calculations are included in Appendix 4.

Flood Event	2-yr	10-yr	25-yr	50-yr	100-yr
Discharge (cfs)	1709	3172	4050	4768	5540

In addition, a number of smaller flows were included in the model.

No data to define flood hydrographs or flow duration curves from long term daily average flows were available.

Hydraulics

An understanding of the hydraulics along McCarthy Creek provides insight into site sediment dynamics. The US Army Corps of Engineers one-dimensional hydraulic HEC-RAS river hydraulic model was used to generate hydraulic conditions along a 15,250-ft long reach of McCarthy Creek. The model includes a series of cross sections to define the river geometry. These cross sections were generated from LIDAR topographic data collected by AeroMap, Inc. during a 2004 flight. The LIDAR coverage extended across the Kennicott River and McCarthy Creek valleys along this 15,250-ft reach. A map of model cross section locations is included in Appendix 5.

Boundary conditions for the model assumed normal depth flow calculated from channel slopes. The effects of this assumption extend to no more than a few sections within the model boundaries.

The McCarthy Creek and East Fork Kennicott River channels are braided and very complex in shape and drainage pattern. An effort was made in the model to contain flow within channels which physically convey flow by placing artificial levees and flow blockages in the model cross sections. This modification of the actual dimensions of the physical model is common practice to allow the model to faithfully reproduce actual or observed conditions output. Additional work may be necessary at the design level to further 'tune' the model to remove numerical instabilities that also appear in the model results.

Resistance to flow by boundary materials, changes in flow conditions and obstructions is represented in the model by Manning's n roughness coefficients. Values of Manning's n roughness coefficients were estimated based on typical values for gravel/cobble bed streams and various vegetative conditions of the flood terraces (Arcement & Schneider, 1989).

The model was not calibrated to a flood event. A plot of the 9-years of stage versus peak discharge data collected at the USGS crest gage provided a very scattered pattern with no discernible trends. Other data usable for calibration is limited to high water marks as captured by home video taken during the 2000 flood event (Marrs, 2000); however, corresponding river flows were not available. For this study, the model was used primarily to evaluate relative differences in sediment transport capability above and below town. For this comparison, errors associated with not calibrating the model would be largely consistent along the study reach and not have an impact on overall results of sediment transport trends.

Results of the HEC-RAS model are summarized in Appendix 5. The results include profile plots of flow velocity and bed shear. For a given stream width, both parameters are proportional to size and quantity of sediments transported. Velocity and shear are higher along McCarthy Creek above town than below the alluvial fan indicating there is a lower sediment transport capability along the East Fork of the Kennicott River than along McCarthy Creek. Values of velocity and shear are lowest through the alluvial fan area indicating a strong tendency towards deposition.

A second series of profiles are included for top width. Top width is typically inversely proportional to velocity, shear and often sediment transport capability. In general, flow is more confined along McCarthy Creek above town than along the East Fork of the Kennicott River. The top width increases noticeably through the alluvial fan area. These trends support observations from velocity and shear results and field observations of areas of sediment depositions.

Incipient Motion Particle Size Analysis

For each flow, HEC-RAS estimates of channel bed shear were used to calculate incipient motion particle size. The incipient motion particle size determines the size of particle at the threshold of mobility. Smaller particles would move, while larger particles would be expected to remain in place. The incipient motion particle size is calculated from the Shield's equation:

$$\tau^* = \frac{\tau_o}{(\gamma_s - \gamma_w)D_s}$$

Where:

τ^* = dimensionless Shield's parameter, varies widely but approximated as 0.030 for gravel bed (Maidment 1993 p 12.19, Klingeman et.al.1998 p 555, Buffington and Montgomery, 1997)

τ_o = channel bed shear, lbs/ft^2

γ_s = unit weight of sediment, assumed to be 165 lbs/ft^3

γ_w = unit weight of water, 62.4 lbs/ft^3

D_s = size of sediment at incipient motion in feet

The incipient motion particle size at each cross section and for each flow was compared to the size of substrate sampled during the field analysis. Results are included in Appendix 5. This comparison provides insight on frequency of bed mobilization. In summary, the gravel material sampled is very mobile. For the lowest flow included in the model of 250-cfs, many cross sections have a mobile sediment size up to the D_{20} (20-percent of the bed substrate material is finer). . While most cross sections have a mobile sediment size up to the D_{50} (50-percent of the bed substrate material is finer). For the study reach, most cross sections along the lower half of the East Fork of the Kennicott River and McCarthy Creek from town and upstream are capable of mobilizing the entire size distribution sampled during a 2- to 10-year event.

Further, comparison of incipient motion particle size results for the cross sections provides insight on areas prone to erosion (high shear and larger incipient motion particle size) or deposition (low shear and smaller incipient motion particle size). There is a marked reduction in the ability of flows to mobilize the bed substrate through a wider section of channel from near the Power House extending downstream about 2,250-ft to where the channel begins to narrow. The upper third of this subreach corresponds directly to the area of the developing alluvial fan with channel braiding evident on the lower portion. As flows spread out over the fan's surface, the sediment transport capability decreases and sediments deposit. With the abandonment of the East Fork of the Kennicott River these sediment depositions will not be removed. As a result the alluvial fan would be expected to continue to increase in elevation and grow in breadth and extent.

Sediment Transport

A planning level assessment of sediment transport conditions for McCarthy Creek and the East Fork of the Kennicott River was conducted using the U.S. Army Corps of Engineer's SAM sediment transport model (Thomas et. al. 2002). SAM is an at-a-section model that includes the ability to analyze a suite of sediment transport functions that was used to generate rating curves of water discharge to sediment discharge. Further, reach-averaged hydraulic parameters can be calculated from HEC-RAS model results and used as input for the SAM model. The Parker 1990 equation was used for this study because it is based on sediment sizes 2- to 102-mm, which most closely corresponds to the range of the McCarthy Creek sediments. Although it is based on gravels smaller than 10-mm, SAM has a variation on the Yang 1973 and 1984 equations. This additional analysis was also included as a comparison.

The rating curves generated with the Parker equation, shown in Appendix 6, provide an estimate of the sediment transport ***potential*** for given hydraulic and sediment size information. Comparing rating curves of an upper supply reach (upper McCarthy Creek) to a lower transport reach (East Fork Kennicott River with and without Kennicott River flows) provides a trending tool of potential for deposition or erosion. If the rating curve of the supply reach is greater than the rating curve of the lower transport reach then theoretically the lower reach is not capable of transporting all of the sediment supplied and deposition would be expected. Conversely, if a lower transport reach is capable of moving more sediment than is supplied (supply reach rating curve is the lesser) then erosion or armoring of the lower reach would be anticipated. These comparisons were applied to the confluence of McCarthy Creek and the East Fork of the Kennicott River to evaluate the trends towards deposition or removal of sediments delivered by McCarthy Creek from above the town. Flows along the East Fork of the Kennicott River before and after the East Fork Capture were considered.

SAM was applied to average hydraulic conditions along two reaches contained within the HEC-RAS model: 1) McCarthy Creek above town and 2) along the active channel from below the alluvial fan to the confluence with the West Fork of the Kennicott River. HEC-RAS output for cross sections 47 through 84 and 3 through 12, respectively, were averaged to provide input to the SAM model. Sediment gradation information was obtained from gravel bulk sample MC-4. Water temperature was assumed to be 45-degrees Fahrenheit.

SAM was also applied to the East Fork Kennicott River using hydraulic estimates based on a normal depth analysis using WinXSPro of a cross section taken from LIDAR topographic data below the bridge. Channel slope was estimated to be 0.01-ft/ft from LIDAR topographic data along the active channel below McCarthy Creek. In order to assess the fate of McCarthy Creek sediments delivered to the East Fork of the Kennicott River, sediment gradation information was obtained from gravel bulk sample MC-4. Water temperature was assumed to be 45-degrees Fahrenheit.

Plots of the rating curves based on the Parker equation are included in Appendix 6. (Rating curves using the Yang equation provided similar trends as shown by the Parker equation.) As demonstrated by the plots, the East Fork with Kennicott River flows at a slope of 0.01-ft/ft has a significantly greater sediment transport capability and would easily remove sediments delivered by McCarthy Creek. Thus, sediments delivered by McCarthy Creek to active Kennicott River flows along the East Fork would be transported, preventing the development of an alluvial fan at the confluence.

Further, a comparison of existing conditions indicates that McCarthy Creek below the developing alluvial fan has a lesser sediment transport capability than the reach of McCarthy Creek above town. As evidenced in the profile plots of velocity and shear in Appendix 5, the reach corresponding to the actively developing fan has less hydraulic capability to move sediments than the reach below the confluence. Given the large volume of sediment sources upstream, it can be expected that the alluvial fan will continue to develop and the active channel below the confluence with the East Fork will continue to deposit sediment and aggrade or narrow. Field evidence of this can be seen in Appendix 1, photos 21 through 23 and 25 through 28.

Quantitative estimates of depths of sediment deposition or erosion and rates of infilling are flood event driven and based on sediment budget principals estimated by relative volumes of sediment transport capabilities along supply and transport reaches. A hydrograph is required to estimate flow event sediment volumes. Hydrographs from a series of return period floods or a flow duration curve are required to estimate average annual sediment volumes. Hydrograph and flow duration curve data were not available for McCarthy Creek. There were no hydrograph or long term average daily flow gage data of similar nearby drainages available.

Sediment deposition that has occurred since the 1994 air photo is evident on the 2003 air photo. The 1994 air photo represents stream conditions at the time of the abandonment of the East Fork of the Kennicott River. From the 2003 air photo, it appears that approximately 26-acres of gravel bars have formed along the reach from the Power House downstream approximately 3,800-ft as shown in Appendix 3, Page 5. Over a 26-acre area, approximately 42,000-cy of sediment is deposited for each 1-ft of depth. Near the area where McCarthy Creek sediments are infilling the abandoned East Fork of the Kennicott River (as shown in Appendix 1, Photo 23) it appears from the LIDAR topographic data that the average depth of deposition ranges roughly between 2 and 4-ft. Admittedly, depths of deposition vary by an unknown amount over this 26-acre area. However, by this very rough estimate, 84,000- to 168,000-cubic yards of gravel have deposited between 1994 and 2003. During this time period, there was one large flood in September 2000, two days of which were partially captured on home video (Marrs, 2000). The degree to which this flood and other smaller

magnitude flows have contributed to this volume of sediment accumulation is unknown.

Given the distinct reduction in grade from 0.0158-ft/ft along McCarthy Creek above town (the supply reach) to 0.010-ft/ft below town (the depositional reach); continued deposition is expected to occur over the long term. As a result, an alluvial fan is expected to continue to grow in breadth, extents and elevation. The rate of growth of the alluvial fan will be dependent on rate of sediment delivery into upper McCarthy Creek and sediment delivery along the stream which is dependent on magnitude and frequency of flows (flood event dependent). An equilibrium condition is not expected to develop in any foreseeable future. It is highly likely that gravel will continue to deposit at this grade break. As the alluvial fan grows over time stream course changes are to be expected as topographic low areas fill become topographically high then shift to adjacent low areas. The breadth of the fan would be confined by the higher elevation valley wall. By these processes, the low terrace on which the Power House is located is at risk of long term and continued (flood event dependent) sediment deposition, flooding and channel migration.

Kennicott River Influences

It is possible to disrupt sediment transport continuity by increasing sediment load or decreasing transport capacity. Discussion regarding an increase in sediment load from the McCarthy Creek watershed has been provided. The following section will discuss the loss in sediment transport capacity near McCarthy following the abandonment of the East Fork Kennicott River; a mechanism which may now be permitting the development of an alluvial fan.

Glacial Outburst Flooding

Before 1994, the Kennicott River had East and West Forks draining the glacial lake at the head of the Kennicott Glacier. Both channels were subject to glacial outburst floods. The East Fork formed a confluence with McCarthy Creek approximately 1600 feet downstream of the historical Power House near McCarthy. The Kennicott River flows that scoured and maintained a deep East Fork channel were supplied by outburst flooding from Kennicott glacier. As noted in Jones and Glass (1993), in 1986 the West Fork carried 68% of the water and the East Fork carried 32%. An instantaneous peak discharge for the East Fork during the 1991 outburst flood was estimated at 4,560-cfs based on a slope area calculation (Jones and Glass, 1993). 1970 and 1957 air photos indicate the East Fork was effectively transporting McCarthy Creek sediments from the confluence down valley. Much of this is due to the limited volume of bedload available along the East Fork in the 3500-feet between the glacial lake and the McCarthy confluence. Sediment was likely limited to wash load in suspension as heavier bedload would have a tendency to deposit in the lake at the base of the glacier. Channel dimensions and bed substrate size observed in the field suggest floods

much larger than 4,000-cfs occurred in the East Fork of the Kennicott River as shown in Appendix1, Photo 24.

Avulsion and Base Level Lowering

During the period 1990-1992 the East Fork was being abandoned and in 1994 the West Fork captured the East Fork. When the channel capture took place and with the increase in flow, the West Fork quickly down cut into existing valley sediments. Between May and October 1994, the West Fork entrenched into the valley bottom approximately 6 feet near the old railroad bridge (Rickman and Rosenkrans, 1997). The lower elevation of the West Fork effectively caused the abandonment of Kennicott River flows along the former East Fork alignment and its influence on McCarthy Creek sediment transport was lost.

Sediment Transport Alterations

Survey and sediment transport data near the confluence of the East Fork of the Kennicott River and McCarthy Creek before the early 1990's does not exist. Therefore, the discussion regarding the changes that have occurred since 1994 are qualitative as they relate to the site but based on basic principals and simple analysis of sediment transport, air photos, recent survey work and field observation.

Gradient plays a large role in sediment transport continuity. Alluvial channels attempt to establish stream and valley gradients that are in equilibrium with the type and sediment volume associated with the discharge that moves it. Discharge and sediment are commonly referred to as independent variables. In contrast, the slope, width and depth (bedforms created by a stream) are referred to as dependent variables. Dependent variables (width, depth, and slope) adjust to changes imposed on a stream by independent variables like discharge and sediment (Leopold et. al., 1964).

Conditions Before Capture of the East Fork of the Kennicott River

If one assumes conditions visible in the 1970 air photo were in equilibrium, one assumes that McCarthy Creek and the East Fork of the Kennicott River had slope and channel dimensions that were not substantially changing as a result of changes in sediment load and transport capability in both channels. The gradient of McCarthy Creek above McCarthy was determined from LIDAR topography to be 0.0158-ft/ft. LIDAR topography data collected in 2004 indicates that from the McCarthy Creek fan downstream along the abandoned East Fork of the Kennicott River to the confluence with the West Fork of the Kennicott River has an average gradient of about 0.010-ft/ft. At the McCarthy-East Fork confluence there is approximately a 60% reduction in slope. For the channels to be in equilibrium in 1970, the flatter sloped reach had to be capable of moving McCarthy Creek sediment load via an increase in discharge (independent variable) since dependent variables (width, slope, depth) were not rapidly changing and assumed to be in equilibrium in both channels. This is

qualitatively true in that outburst floods in the East Fork were estimated to be greater than 4000-cfs on an annual basis with bankfull dimensions of 20,200-cfs.

Air photo's indicate the East Fork Kennicott was capable of moving McCarthy Creek's sediment loads at the reduced gradient found where the two valleys meet. We do not know whether the East Fork of the Kennicott River was near its transport capacity but it appeared capable of transporting McCarthy Creek sediment in 1970 based on air photos. Field evidence as seen in Appendix 1, Photo 24 indicates that McCarthy Creek-sized gravels were winnowed from the bed of and were easily transported by the active East Fork of the Kennicott River. As previously noted in the SAM sediment transport analysis discussion, the East Fork has a greater sediment transport potential than the sediment delivered from McCarthy Creek. This supports the observation that the East Fork Kennicott is capable of transporting and removing sediments delivered by McCarthy Creek, thereby slowing or preventing formation of an alluvial fan

Conditions After Capture of the East Fork of the Kennicott RIver

After the East Fork capture in 1994, sediment delivery from McCarthy Creek did not change appreciably (beyond changes in watershed delivery) but the discharge along the East Fork of the Kennicott River decreased significantly. Following the abandonment in 1994, Kennicott River flows along the East Fork had effectively disappeared and the new McCarthy Channel confluence was approximately 1.3-miles further downstream along the old East Fork of the Kennicott RIver. The sediment loads delivered to the new 1.3-mile reach of McCarthy Creek were similar as they had been at and above the old confluence but the increased flow to transport that load along the same gradient and channel shape created by the East Fork of the Kennicott River was gone. As stated previously there is a 60% reduction in slope as the McCarthy Drainage enters the Kennicott valley. The loss of Kennicott River flows along the East Fork was a rapid and substantial change of an independent variable (East Fork discharge) near and below the confluence with McCarthy Creek.

As a result of this change in flow availability, it appears that McCarthy Creek has responded by depositing sediment, widening, laterally migrating and aggrading in the reach adjacent to and below McCarthy. The loss of flow along the East Fork of the Kennicott River has resulted in sediment deposition causing the local stream bed base level to rise or rebuild near the confluence due to the loss of sediment removal by outburst floods along the East Fork of the Kennicott River. This is observed in Appendix 1, Photos 21, 22, 23 and 25 through 28. McCarthy Creek is essentially building a valley and channel slope similar to the one that exists upstream of McCarthy in order to effectively transport the type and load of sediment delivered from the watershed. This observation is supported by the observations discussed in the hydraulic and sediment transport analyses.

It is difficult to determine the degree of future rebuilding or stream bed base level rising since the rise is associated with the loss of discharge and hydraulic scour associated with Kennicott River outburst floods. There is no historical survey data and this analysis would have to be synthetically derived and estimated if it were completed.

Bull and Leopold (1979) stated that changes in base level have limited upstream influence. To what degree base change impacts the reach adjacent to McCarthy is difficult to quantify. However, alluvial fan development at and below the Power House is evident. The question is to what degree this is influenced by: 1) the result of the headward migrating base level rise from sediment deposition enabled by loss of East Fork discharge, or 2) elevated watershed sediment delivery loads.

Conclusions

Aerial photo, field observations, LIDAR topographic survey and analyses indicate the reasons behind bank instability and flooding near the town of McCarthy are due to a combination of watershed scale and reach scale physical processes. Changes in climate may or may not have an effect. What is known and observed is:

- Kennicott River flows along the East Fork that previously removed McCarthy Creek sediments from the confluence have been lost due to channel capture by the West Fork of the Kennicott at the terminus of the Kennicott glacier.
- Air photo evidence shows a substantial increase in sediment generated from the McCarthy Creek watershed and increased instability along McCarthy Creek between the 1970 air photo and 1994 air photo (floods occurred in 1980 and 1985). Following the 1994 air photo, instability appears equal to or slightly less with increases in vegetation in the 2003 air photos (a flood occurred in 2000).
- Air photo interpretation, direct field evidence combined with hydraulic and sediment transport analyses shows substantial sediment deposition and development of alluvial fan morphology into and extending below the old confluence of the East Fork Kennicott River and McCarthy Creek. The channel and valley formed by the old East Fork of the Kennicott River is filling up with sediment produced by the McCarthy Creek watershed and delivered by McCarthy Creek flows.
- Due to sediment aggradation, the flood conveyance capacity of McCarthy Creek is less than it appears to have been in the 1970 air photos with increased frequency of flows inundating the adjacent flood prone surface on which the Power House was constructed. This condition is corroborated by local observations.
- Air photo and anecdotal information suggests the loss in capacity began to change following the 1980's era flooding and has continued to change and become worse since that time.

Based on field observations, historical survey, air photos and discussions with local McCarthy residents, the two prominent reasons behind the flooding and bank instability near McCarthy appear to be an increase in sediment produced by the McCarthy watershed and the abandonment of the East Fork of the Kennicott River channel segment.

Although speculative and difficult to demonstrate quantitatively, it is possible that global climate change or cyclic shifts in warming and precipitation could contribute to increased sediment production in the McCarthy watershed. Such a change in cyclic climatic patterns could cause changes in precipitation and corresponding changes in watershed runoff and stream flows that result in the destabilization of watershed sediment supply processes as discussed above.

McCarthy Creek Channel Future Conditions

McCarthy Creek is in the process of developing a new equilibrium based on elevated sediment load from watershed sources and the loss of sediment removal along the East Fork of the Kennicott River. No flood hydrographs or long term flow data to construct a flow duration curve are available to conduct sediment budget estimates and predict depths of erosion/deposition or rates of infilling. Thus, the degree and rate of further channel infilling, lateral migration and flooding in and around McCarthy is difficult to predict. Analysis in this report is based primarily on qualitative trends and limited field investigation and modeling.

As discussed in the Sediment Transport Section, hydrographs or flow duration curves would be required to predict estimated volumes of sediment deposition. These hydrologic characteristics are not available for McCarthy Creek or other nearby gaged basins. Air photo and LIDAR topographic information were used to roughly approximate the area and volume of gravel deposition that have occurred between the 1994 and 2003 air photos. Given the distinct change in grade from 0.0158-ft/ft along McCarthy Creek above town (the supply reach) to 0.010-ft/ft below town (the depositional reach); continued deposition is expected to occur over the long term with an alluvial fan continuing to grow in breadth, extents and elevation. The rate of growth of the alluvial fan will be dependent on rate of sediment delivery into upper McCarthy Creek and sediment delivery from the stream (which is dependent on magnitude and frequency of flows - flood event dependent). An equilibrium condition is not expected to develop, with gravel continuing to deposit at this grade break. As the alluvial fan deposits sediment and grows over time, McCarthy Creek is expected to change course and fill in topographic low points. The breadth of the fan would be confined by the higher elevation valley wall. By these processes, the low terrace on which the Power House is located is at risk of long term and continued (flood event dependent) sediment deposition, flooding and channel migration.

To determine a relative risk of future infilling, the upstream valley and slope dimensions could be continued downstream to the new confluence with the Kennicott River. The average slope of McCarthy Creek is shown in Appendix 1, Figure 5. If the upstream valley and stream segments are near equilibrium, one could assume that in order to maintain sediment transport through the town of McCarthy the same slope would have to be continued downstream to the new McCarthy Creek Kennicott River confluence. There is a substantial reduction in channel gradient from McCarthy Creek above town to the reach from town downstream to the present day confluence with the active Kennicott River. This change in gradient coupled with the loss of Kennicott River flows along the East Fork is causing aggradation. Therefore, it is likely McCarthy Creek which now flows down the abandoned East Fork Kennicott, will continue to aggrade in order to develop a steeper channel that can transport sediment through the reach near the Power House all the way to the new Kennicott River confluence. Determining when this may be achieved is difficult to quantify because it is not possible to predict the flood magnitude and frequency responsible for moving sediment and building a surface of similar slopes upstream of the Power House within the abandoned East Fork Channel as viewed in Appendix 1, Figure 5.

Clear Creek

Clear Creek is the water supply for the Town of McCarthy. Clear Creek is located on the eastern flood plain of the Kennicott River and discharges into the confluence area of McCarthy Creek and the East Fork of the Kennicott River as approximately shown in Appendix 1, Figure 3. Based on the LIDAR topographic survey data and the discussions above, McCarthy Creek flood flows will continue to spread across the alluvial fan, depositing sediment across the fan and into Clear Creek. Currently, developing fan topography favors a new McCarthy Creek channel north of the existing channel into Clear Creek. Capture of Clear Creek by McCarthy Creek is quite possible during the next few flood events. Over time, the channel here will likely fill with sediment as McCarthy Creek migrates west to the far side of the former East Fork of the Kennicott River. As it migrates, McCarthy Creek will most likely continue to build out and extend the alluvial fan currently being developed at the break in slope between the McCarthy and Kennicott valleys. This process will bury a portion of the Clear Creek channel. Deposition is expected to occur near the outlet of Clear Creek and progress upstream as the McCarthy Creek alluvial fan grows. Growth of the fan is not expected to extend far enough up Clear Creek that it no longer is functional as a water supply source.

Power House

Further sediment deposition and growth of the alluvial fan is to be expected. This deposition will increase the bed elevation and decrease the flood capacity of

McCarthy Creek. Subsequently, the flood terrace on which the Power House is located will flood more frequently. With deposition in McCarthy Creek, the channel would be expected to migrate laterally to the north encroaching into the terrace that the Power House and other structures are built upon. With time, growth of the fan may encroach into the flood terrace on which the Power House is located.

Next Steps

It is recommended that the next phase of study on McCarthy Creek should consider a number of alternatives to remedy the flooding and erosion risk outlined by this report. An alternatives analysis should look in greater detail at feasibly, benefits and costs and efficacy of implementation. Some initial considerations for alternatives include:

- Do nothing. Accept the loss of historical structures.
- Buyout properties at risk and allow the properties and structures to be impacted by McCarthy Creek.
- Construct berms or levees to keep flood flows out and possibly provide pumps to structures at risk. (Note that continued deposition along McCarthy Creek will eventually make these structures ineffective}.
- Channelize McCarthy Creek to maintain transport capacity through the accreted fan deposits, based on equilibrium slope concepts.
- Commence gravel mining to maintain pre-abandonment elevation at the confluence of McCarthy Creek and the East Fork of the Kennicott River.
- Bank and bar stabilization along McCarthy Creek upstream of town may reduce the volume of sediment entering the fan area. However, sediment delivery is dominated by slope failures and upstream sources. Deposition and growth of the fan would continue to occur, albeit at a slower rate.
- Re-align and extend McCarthy Creek to the west across the island directly into the West Fork Kennicott River. The profile of this alignment appears favorable for passing sediment to the current alignment of the active Kennicott River which would remove sediments and limit formation of an alluvial fan. This option would be large scale and require consideration of land ownership along the future alignment to determine if it is feasible.
- Re-establish flow along the East Fork of the Kennicott River.

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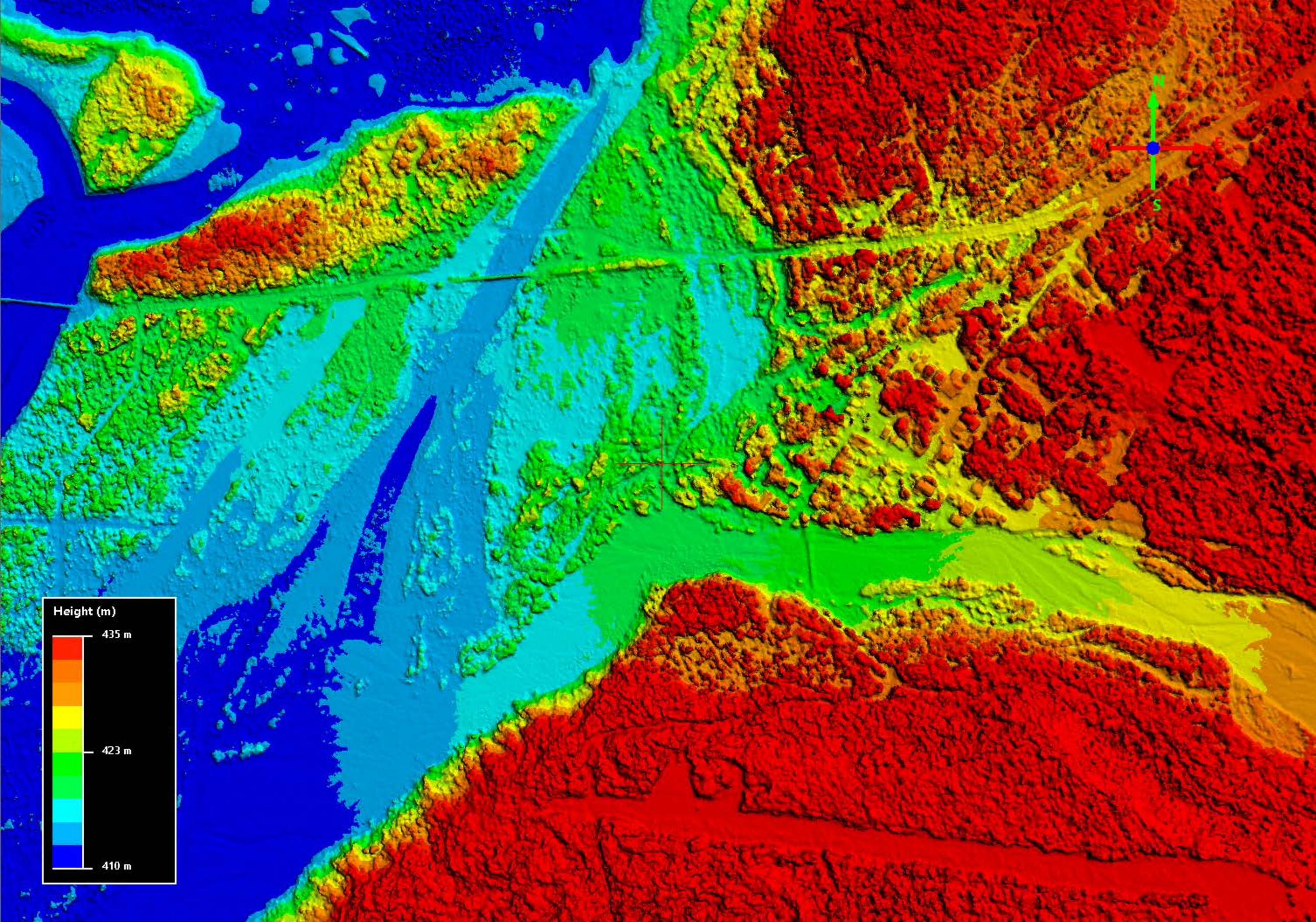
Appendices

1 - Figures and photos
2 - Sediment samples –data and plot
3 - Aerial photos – historic series
4 - Hydrology
5 - Hydraulics
6 – Sediment Transport – SAM Qw –Qs Rating curves


N
W
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Height (m)
435 m
423 m
410 m

McCarthy Area Council Meeting Minutes
April 25th, 2019, Tony Zak House

Members present: Trig Trigiano, Laurie Rowland, Keith Rowland, Michelle Latvala, Pete Senty, Stephens Harper, Greg Fensterman, Kaleb Rowland, Mark Vail, Hannah Rowland, David Rowland, John Bosshard, Christine Johnson, Erin McKinstry, Charlie O'Neill, Lyn Plomaritis, Greg Runyan, Jamie Mace, Stephanie Sever, Tamara Harper | By phone: Patt Garrett, Dave Syren, Ray Kreig

Others present: Morgan Gantz (NPS) | By phone: Kristin Carpenter (CRWP), Andy Linton, Jason Lobo

President Mark Vail opened the meeting at 11:40 AM with a quorum of nine members present. A voice recorder was used to record the meeting and six people called in by phone. Motion was made to approve the March 2019 minutes. The minutes can be viewed at the MAC website www.mxycouncil.org.

Property at the end of the McCarthy Road
The property at the end of the road was recently purchased by Dave Syren and Ray Kreig. They are inviting local businesses and the NPS to have a presence at the end of the road. Both Syren/Kreig and the NPS are interested in local input about the NPS and discussion followed. A request was made that MAC craft a resolution in support of an NPS presence as quickly as possible, preferably this summer. Stephens Harper explained that there are fiscal constraints this year and staff have already been hired for 2019, so they may not be able to move this summer. The NPS encourages community opinion on the subject before they make any decisions. We talked about moving the small visitor kiosk from its current location to the end of the road, but people thought it should be staffed if so. The current cabin/kiosk may not be sufficient in the long term, but there was also concern that new buildings not be too big or not fit in well. We agreed on the importance of friendly NPS staff giving good information to help visitors experience the park and access local businesses. People want NPS staff to share information about all businesses/recreational opportunities in the area; NPS does this in Kennecott and would do it also at the end of the road. Local businesses can also establish their own presence/information. Syren said they have two attendants hired for the summer, outhouses will be the same as in the past, and garbage should be hauled out, as there will be no garbage service. Could CVT provide a pay phone used with a credit card for those whose cells don't work here? Kreig emphasized their willingness to work with NPS to accommodate park visitors.

We voted and agreed on a draft statement of "strong support of members present at the April 2019 MAC meeting for an NPS presence at the end of the road in a most timely fashion". This statement will be shared at the May meeting for further discussion and input before a final vote to adopt a resolution.

Keith Rowland said that he, Syren, and Kreig would like to submit a separate statement to be discussed at the May meeting. This statement was sent to the MAC secretary after the meeting and was not shared with or discussed by the MAC membership: "The McCarthy Area Council encourages the NPS to make arrangements promptly with the landowners for space at the footbridge for a modest welcoming center, so that this summer's visitors could be served if possible."

Contact Ray Kreig or Dave Syren with input or questions: ray@kreig.com, 907-276-2025 and akflyer00@gmail.com, 907-440-2982.
Contact Park Planner Morgan Gantz at NPS with suggestions: morgan_gantz@nps.gov, 907-822-7213.

McCarthy Creek and Clear Creek flooding, road/bridge issues
Clear Creek is almost at the level of the road already. The water hole culvert is plugged. Two beavers have been killed recently and no beaver activity noted since. The beaver lodge close to the culvert remains and the dam has been partially removed; the water level continues to be too high on the upstream side due to the plugged culvert. MXY Creek gravel deposition and Clear Creek hydrology are the larger issues, but beaver activity exacerbates the problem. The 2018 flood caused MXY Creek to flow mostly into the east Kennicott River channel pool below the footbridge and piled gravel up in Clear Creek higher than the beaver dam level. The changes from last year continue to increase flooding potential of the road and our water source. Greg Fensterman has been in touch with DOT about how to deal with road flooding at both Clear Creek and the

swimming hole. We can apply for funding through the Statewide Transportation Improvement Program (STIP), which is a lengthy application for part of $50 million dollars, due in Sept. We would compete with all other communities in the state and this money would not be available in the short-term.

Greg outlined the two areas of concern: 1) the swimming hole, where the road goes across NPS land and has the potential to flood in the future as creek dynamics change and 2) the water hole, where the road flooded last year. The swimming hole is more complicated and likely more expensive, including the possibility of realigning the road back into the 100-foot DOT right-of-way along the existing footbridge. Options include raising the roadbed 6-8 feet, which may require a 70-foot wide base, or installing a vehicle bridge over the span (the footbridge is not rated for all vehicles), which could be millions of dollars. The stretch near the water hole would need to be raised significantly, as the water level is already close to the road surface.

Realistically, we have a slim chance of receiving STIP funding, but Greg said strong community support (including financial) and picking one project (Clear Creek is more pressing and less complicated) for the application could raise our chances. New road construction that would occur if we rerouted the road at the swimming hole, is not suitable for a STIP project and a bridge increases DOT maintenance requirements, also not helpful for a STIP project. The Clear Creek project lends itself better for STIP funding, yet STIP-funded projects take years.

Kristin Carpenter, Copper River Watershed Project (CRWP), called in to offer support organizing stakeholders, accessing potential sources of funding and advising on culvert design for fish passage. Broad support is important for the application, but we need to balance that with including too many entities that may slow the process.

The workgroup started by Greg should continue with help from stakeholders, including CRWP, DOT, NPS, MAC, local businesses and citizens, to pursue how to keep the three areas of concern (swim hole, water hole and MXY Creek bridge) accessible and viable into the future. It is important that DOT know we, as a community, are in full support of such projects and we need to educate them with the past studies showing how MXY and Clear Creeks are changing. We will request a letter from NPS (Mike Loso, geologist) explaining to DOT how hydrological changes on parkland may affect access to town. Some people in town do not support spending so much money on projects that may be a waste when we don't know for sure what will happen with the creeks or if such projects will fix the problems, when we can't control nature. How much do we do, how much do we spend?

Greg said it would be helpful for our application and for working with DOT in general if he had tangible support from our community, such as a resolution from MAC or letters/lists/petitions of support from businesses, locals, and organizations. Everyone present at the meeting was in support of Greg's group/MAC pursuing the STIP funding from DOT for roadwork to maintain access to town at Clear Creek. We will pose this question again at the May meeting. In the short-term, we are susceptible to flooding again, as the culvert is plugged and the water is high already. The culvert needs clearing. If cleared, grates may be helpful to prevent further damming if beavers return. We did not agree on a plan of action. A pipe has been installed upstream of the water hole that funnels flowing water for collection, thanks to Gary Green. And thanks to Greg Fensterman for jump-starting the STIP process with DOT. To help Greg, contact greg.fensterman@gmail.com, 907-795-5252.

Westside Road Maintenance 2019 project proposal vote
We voted on Rowcon's proposal for $1,920 toward westside road maintenance. Proposal passed unanimously.

NPS Update—Stephens Harper
Stephens handed out the annual letter to our community from NPS Superintendent Ben Bobowski. Letter is attached or hard copies are at the mail shack. He announced that Matt Smith has been hired into the permanent job to lead the maintenance crew in Kennecott. The NPS has produced a book, *For the Love of Freedom: Miners, Trappers, Hunting Guides and Homesteaders*, which is free to the public. He handed out copies and will bring more to the May meeting.

State of AK Community Assistance Program Application and Treasury Report—Tamara Harper

We are scheduled to receive $25,452 from the state for fiscal year 2020, and we filled out the required application, discussing how we might spend the money. We allocated money for roads, EMS, VFD and general administration.

We again discussed funding options for roadwork at Clear Creek. Motion was made to reserve $10,000 in matching funds as part of our STIP application to raise the roadbed at Clear Creek to prevent future flooding and maintain town access. Motion seconded and passed unanimously. $10,000 will be set aside in the event that we are awarded the STIP project funding in March 2020.

Financial activity since the March meeting:

Checking account balance: $10,262
Savings account balance: $97,000
1, 2 and 5-year CDs balance: $104,885

Deposits:	$213	all interest
	$475	dues
Expenses:	$5	EMS phone fee
	$1,504	Rowcon-westside road maintenance 2018
	$11	printer ink

Wrangell Mountains Center update
Evergreen College will join the WMC this summer hosting the Summer Field Studies program. Eight students are enrolled.
Sunday, May 26th, 10 AM will be the volunteer work party at the old Hardware Store, please come help the WMC get ready for the season and meet the new summer staff.
The first Artist in Residence arrives June 2nd.
WMC is looking for more community involvement with the Summer Arts and Lectures Series, if you are interested in presenting, please contact Stef, stefanie@wrangells.org, 907-554-1035.

KMVFD announcement
Warmer, drier conditions are occurring. Please be aware and careful when burning. Burn permits are now required, you can get them online here: https://dnr.alaska.gov/burn or call 907-822-8665(TOOL).

Announcements:
An excavator slipped off the ice on the Nizina Road and is now on its side. The parties are working to remove it, but it may take some time. No one was injured and they self-reported the fuel spill to DEC.

Thank you to whoever fixed the snow groomer, we appreciate it!

Please drive slowly along our dusty roads… if you can only see dust in your rearview mirror, you're going too fast!

Bears are out and spring is here, enjoy the season!

The MAC meetings in May, June, July and August will be at 6:30 pm.

Mark Vail adjourned the meeting at 1:40 pm.
Next MAC meeting will be Thursday, May 30th, 2019 at 6:30 pm.
Minutes taken by Tamara Harper, Recording Secretary.

Wrangell-St Elias Newsletter

National Park Service
U.S. Department of the Interior

Wrangell-St. Elias National Park & Preserve

Kennicott Glacier and Fireweed Mountain/Photo by Mike Townsend

Dear neighbors of McCarthy/Kennecott, April 2019

Happy Spring! It's hard to believe that I've already experienced my third winter with you as Superintendent at Wrangell-St. Elias National Park and Preserve. Time goes by quickly, when you're having fun! I hope each of you have wintered well and that this early spring is inspirational.

I'm pleased to announce that we have a new Chief Ranger, our Team Lead for Visitor and Resource Protection – Brad Honerlaw. Most recently Brad was our North District Ranger, in Slana, and has been stepping up to lead the team for most of last year. He will begin his new role immediately. Look for him when he visits this summer! And look below, to learn about another very important and recent hire in Kennecott!

Over the last months we have made significant progress on topics of life, health and safety for park operations to better serve our visitors and neighbors. Focused training, updated policies and procedures, evaluations, as well as developed situational awareness have increased our preparedness for Search and Rescue (SAR), Incident Management, fire management, assessing and management of contaminants, and aviation safety. These have been good investments of time and energy. We appreciate all the volunteers and partners in these annual efforts and look forward to, what we hope will be, a productive and safe season.

There's much going on in the park this year. I encourage you to find our local Kennecott Unit Manager, Stephens Harper, to learn more. Or stop me if you see me walking about – I am planning several trips to the area, June through September. But, to get you started with updates, here are a few specifics, by topic:

Public review/revision- Kennecott Operations Plan (2013) and Kennecott Support Facilities Plan (2007):

The Kennecott Operations Plan is our primary planning document for management of the Kennecott Mines NHL. The plan directs us, once every five years, to initiate a review and seek full community input in advance of adopting any revisions. Changes have occurred and management issues have arisen that should be included and addressed. Our strategy going forward is to combine the two plans to create one comprehensive guidance document for park managers to utilize as the primary site management tool, and to further clarify the management goals and actions for the next phase of Kennecott management. This process will be guided with extensive public involvement. We began the public engagement process in 2018 are going to continue throughout 2019. The following dates are scheduled public work sessions:

Thursday April 25th, just after the MAC meeting – Tony Zak building, McCarthy
Tuesday May 29th, 6 pm – Kennecott, hosted by Friends of Kennicott location TBA
Tuesday August 27th, 6 pm – Kennecott Rec Hall
Thursday September 12th, 6 pm – Tony Zak Building, McCarthy
For more information: Outdoor Recreation Planner, Morgan Gantz, 822-7213, morgan_gantz@nps.gov

Facilities Management

Staffing Updates. Last fall we hired our new Chief of Facility Management, Chris Wilcox. Chris came to us from Port Alsworth, AK in Lake Clark NP&P where he also served as Chief of Facility Management. Chris has a strong background in historic structure preservation and plenty of experience overcoming the challenges of complicated logistics in remote Alaska settings. We are excited to have him on the team.

Matt Smith was recently selected as the new, permanent, Kennecott Maintenance Team Lead! Matt has worked at WRST in maintenance seasonal positions for multiple years . His skill and local knowledge will be a great asset to the stabilization and maintenance program in Kennecott.

Kennecott Mill Building Stabilization. We intend to solicit construction bids for the continued stabilization of the Kennecott Mill Building in the latter half of 2019. If successful, construction will begin in Mid-May 2020 and is anticipated to take two summers to complete. This work will include the structural stabilization of Levels 8-11 in the Mill Building and the full reconstruction of the High Grade Ore Chute. Additional work in Kennecott will include; replacement of flooring on the third floor of the General Store; replacement of deteriorating roadside cribbing; exterior repairs to the Transformer building; painting of multiple buildings including the Dairy Barn and foundation repairs on the Sacking Shed/Scale House. Application of a dust abatement product, Dura Soil, is planned for the main roads in the Kennecott Mill site.

Tram Line / Tower Vegetation Clearing. This project will remove and dispose of vegetation around the tram lines of the Kennecott Mine site. This project covers approximately two acres in size with extremely thick vegetation on a steep hillside; work will be completed using hand tools. Clearing along and around tram towers and cables will allow visitors to see the pathway of ore as it came down from the mines 5 miles away.

In addition to establishing the view shed, clearing around the towers will protect them from encroaching vegetation and future degradation. Work will focus on Jumbo Tram Towers and Bonanza Tram Towers.
For more information: Chief of Facility Management, Chris Wilcox, 822-7246, christopher_wilcox@nps.gov

Interpretation and Education:

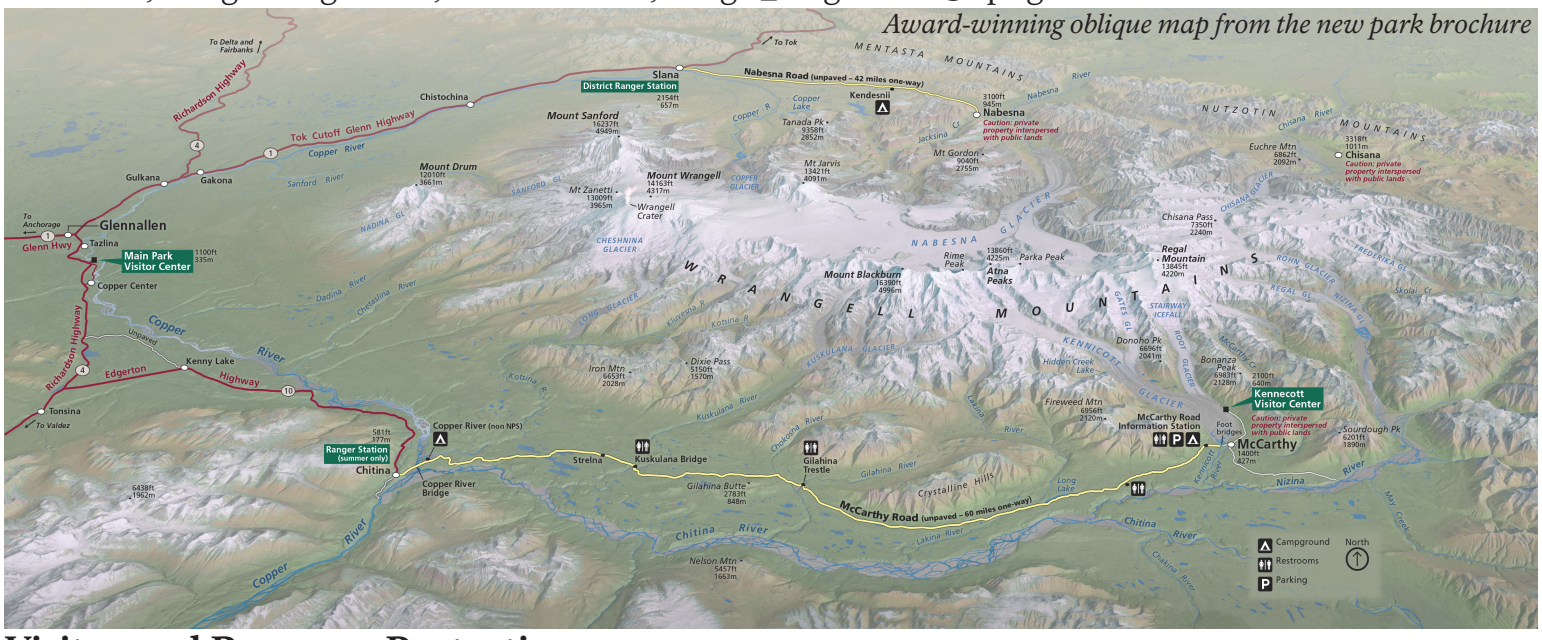
The Kennecott Visitor Center (in the Blackburn School) will be open daily 9 a.m. to 5 p.m. May 24 to September 8, 2019 under the direction of Jamie Hart.

At the Visitor Center in Copper Center, we recently welcomed back Carrie Wittmer as our new permanent North District Interpretive Supervisor. Carrie comes to us from C&O Canal NHP in Maryland. She has also worked at Grand Canyon NP and Crater Lake NP and was here on detail in summer 2018.

The Chitina Ranger Station will be open daily 9 a.m. to 5 p.m. with returning ranger Vicky Berger and new local hire Larry St. Amand. During the summer the log cabin ranger station will get an exterior overhaul (chinking and painting) which will not affect visitor services.

This year we have a new park brochure. The brochure is one-third larger than the old one and features an award-winning map with an oblique view of the McCarthy Road, and many Ahtna place names. The new brochure is available in English, Spanish, French, German, Korean and Chinese via mail, on the website at https://www.nps.gov/wrst/planyourvisit/maps.htm or at any of the four visitor centers including Copper Center, Kennecott and the Ranger Stations at Slana and Chitina. For more information: Chief of Interpretation & Education, Margie Steigerwald, 907-822- 7251, margie_steigerwald@nps.gov

Award-winning oblique map from the new park brochure



Visitor and Resource Protection

Staffing Updates. The South District protection ranger staff includes returning rangers Kirin Riddell, Elizabeth Schafer, Jon Cooperman and Stephens Harper. New to the staff this year is Sharon Tingue. Sharon comes to us most recently from the Bureau of Land Management (BLM) in Fairbanks. Before her work with BLM, Sharon was a district ranger at Glacier NP in Montana and a protection ranger at Denali NP.

Nyssa Landres, park wilderness coordinator, will also be helping with South District VRP operations for part of the summer and is our deputy SAR coordinator. Protection rangers provide emergency medical, search and rescue, public use management and law enforcement services. Rangers place an emphasis on enforcement of regulations and education of practices that protect visitor safety and public resources.

WRST Search and Rescue (SAR) Team. SAR team sign up and training attendance was strong last year and we plan to build upon this momentum. We will be hosting training sessions each month through the summer. We appreciate the dedicated local residents who volunteer their time to be on this important team.

To report an emergency or violation on NPS managed land call 907-683-2276. This number reaches our 24/7 NPS dispatch. Please only call them to report an emergency or violation. NPS rangers often respond to emergencies outside of NPS areas, but do so at the request of other agencies. To report a medical emergency on private land call MXY EMS dispatch, 554-1240. For law enforcement issues on private land call 911, or fire on private land call 554-2102. For more information: South District Ranger, Acting Kennecott Unit Manager, Stephens Harper, 707-9739, stephens_harper@nps.gov

Resource Stewardship and Science

National Creek Preliminary Water Testing. NPS collected water samples from National Creek in 2018 to obtain preliminary information regarding water quality. The samples were analyzed for heavy metals (arsenic, cadmium, chromium, copper, lead, and mercury) that are known or suspected to be present in association with historic structures at Kennecott. Samples were not tested for any biological contamination. Water samples were collected over a four-month period (July through October) from four locations both upstream and downstream of the trestle. Based upon this data, National Creek surface water currently appears to be a safe drinking water source in terms of metal concentrations. However, NPS recommends that park employees and the public refrain from obtaining water at locations that are adjacent to or downstream of historic structures until NPS has more fully evaluated the nature and extent of metals contamination and associated potential human and ecological risks. Users of water obtained from National Creek should also be aware of the potential for biological contaminants to be present. More information about results of this preliminary water testing will be made available to the public in a forthcoming factsheet.

Next Steps for Kennecott Environmental Investigations. Because hazardous substances that may pose a threat to public health or the environment remain at Kennecott, NPS will be proceeding with a Remedial Investigation/Feasibility Study (RI/FS) pursuant to its authority under the Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA, commonly known as the Superfund). The RI/FS is a comprehensive investigation that will include sampling of various environmental media (e.g., soil, National Creek surface water and sediment, groundwater, air, etc.) and potential source areas (e.g., mill tailings, building materials) to fully characterize contamination; an assessment of potential human health and ecological risks associated with exposure to hazardous substances that may be present; and an evaluation of remedial actions that may be necessary for addressing identified risks. NPS currently is in the planning stages of the RI/FS.

Volunteer Work at the Cemetery. On July 13th, Cultural Resources Program Manager Greg Biddle will accompany a volunteer group from the Pioneers of Alaska (including the Pioneers' Grand President Jim Casement) to clean up vegetation at the Kennecott Cemetery. The volunteers may be doing some very light fence maintenance as well. The Pioneers did work similar to this in recent years at the McCarthy Cemetery. Once the work plan has been developed in greater detail, Greg will attend an early season MAC meeting to share project information and solicit input.

NPS Fire Management Program. At this time, there are no formalized plans to conduct any fuel-reduction work this season around the McCarthy/ Kennecott area. However, funding has been requested for a fuels project at the University Subdivision. If funded, we would like to implement the project in the fall. NPS fire staff will continue to support our partners, State of Alaska - Division of Forestry, in wildland fire response throughout the park. In collaboration with the Strelna Volunteer Fire Department and the McCarthy/ Kennecott Volunteer Fire Department, we are planning to assess fire danger and fuel conditions along the McCarthy Road. To increase our situational awareness and collaborative planning efforts, NPS fire staff may also be continuing efforts to conduct wildland fire risk assessments of NPS structures throughout the park.

Glacier Monitoring. This summer will begin the fourth year of including Kennicott Glacier in the NPS Inventory and Monitoring Program's long-term glacier monitoring study. As part of this effort, we will be maintaining and re-measuring stakes (short pieces of metal conduit) at 5 locations on the Kennicott Glacier and Gates Glacier tributary to measure snow accumulation and snow/ice melt. Collaborators from University of Alaska Fairbanks and the Chinese Academy of Sciences will be doing additional complementary work on and around Kennicott Glacier as well.

Kennicott River Gaging. Collaborators from the U.S. Geological Survey will again be making periodic direct measurements of river discharge from the footbridge and (during high discharge events like the Hidden Creek Lake flood) from the freight bridge. We will aim to notify the community in advance about use of the freight bridge for river monitoring efforts in order to minimize disruptions. Boaters and flood watchers- -please remember that real-time stage and discharge readings from the Kennicott River are available online: http://waterdata.usgs.gov/ak/nwis/uv/?site_no=15209700. Finally, for those that are interested, we know peak river discharges during the Hidden Creek Lake jokulhlaup over the last three years: On July 26, 2016, river flow peaked at 24,300 cubic feet per second (cfs). 2017 was smaller (13,600 cfs on July 17) and the 2018 flood was the same as 2017 (13,600 cfs on July 18).

Mitigating and Interpreting Consequences of Kennicott Glacier Retreat. This year we will continue our 3-year effort to better map, understand, and interpret the consequences of changes at the terminus of the Kennicott Glacier. Last year (in year 1) NPS successfully acquired two new kinds of data: a complete map of the bathymetry (water depths) of proglacial Lake Kennicott, and aerial photographs that were used to generate a very detailed topographic map of the lower Kennicott Valley. This data is really interesting, and we are happy to share it with any community members that would like to see it before the final report comes out in a couple years. The data will help as we work this year to understand how the glacier, the lake, and the rivers (including lower McCarthy Creek) are changing, and to consider how those changes may affect park resources, private infrastructure, visitor safety, and the community.

Through the Geoscientists-in-the-Parks program, we have hired a recent Ph.D. level geophysics graduate, Lia Lajoie, to work on this project over the summer. An important component of the Kennicott Glacier project is the development of a valley-wide (and to some extent, park-wide) plan to interpret glacier and related landscape change. Jamie Hart is our park lead on that piece of the project and there are two key components: The first is that we are developing a plan. Second, this summer in the visitor center, we will be testing the use of virtual reality equipment to help visitors view and understand the Kennicott Glacier.

Brown Bear Surveys. In May, Resource staff will conduct aerial surveys of brown bears to collect data that will be used to develop estimates of population size and density in a large portion of the park. Surveys will begin on May 13th and continue for approximately seven days. The survey method employs a photographic mark-and-re-sight approach using physical characteristics and spatial locations to identify individual bears. Each of two pilot/observer teams will independently search each cell of a 4-cluster unit, one team acting as the 'mark' and the second as the 're-sight'. Each team will obtain a GPS location and take high-resolution photos of all bears observed. Dens observed will also be recorded. Survey units will extend as far as the McCarthy-Kennecott area.

Other Research and Monitoring Activities. In addition to research and monitoring projects conducted by park staff, the park issues permits for a number of projects that are conducted by external researchers from academic institutions or the NPS Inventory & Monitoring Program. Park staff work closely with these researchers to ensure that permitted research activities have minimal impacts on park resources, values, visitors, residents, and operations; and that projects are well-designed and meet professional standards for scientific and scholarly activities.

New Ethnographic Publication. Wrangell-St. Elias National Park and Preserve, in cooperation with the Oral History Program at the University of Alaska Fairbanks, recently completed work on an ethnographic overview and assessment that documents the culture and traditions of non-Native communities and occupational groups traditionally associated with what is now Wrangell-St. Elias National Park and Preserve. These communities and occupational groups include, but are not limited to, small-scale miners, trappers, sport hunting guides, and homesteaders. Several people with ties to the McCarthy/Kennecott area were interviewed for the project. *For the Love of Freedom: Miners, Trappers, Hunting Guides, and Homesteaders* by Karen Brewster, along with an associated annotated bibliography, are now available for download from this webpage: https://www.nps.gov/wrst/learn/historyculture/miners-trappers-hunting-guides-and-homesteaders-an-ethnographic-overview-and-assessment.htm.

For more information: Resource Stewardship & Science, Mark Miller, 822-7212, mark_e_miller@nps.gov

Sincerely,

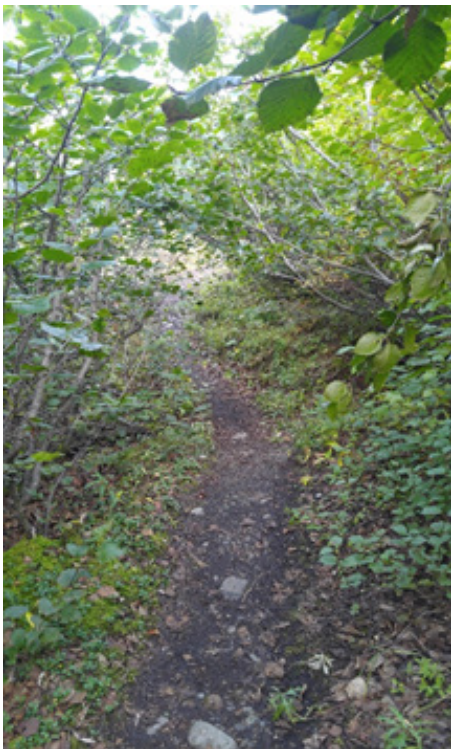
Ben Bobowski, Superintendent
Wrangell-St. Elias National Park and Preserve
PO Box 439 Copper Center, AK 99573
(907) 822-5234
https://www.nps.gov/wrst

Wrangell-St. Elias
National Park & Preserve

Wrangell-St. Elias National Park and Preserve

NATIONAL TRAILS DAY 2019

McCarthy/Kennecott Area Volunteers Needed
Saturday, June 1st
9 am to 3 pm



The park will be clearing the Root Glacier/Erie Mine Trail corridors and conducting minor trail maintenance on the Root Glacier access trail. Last year, crews cleared the trail corridor from Erie Mine back towards Kennecott. This event will continue the work, starting near Jumbo Creek.

Details:
-Hand tools and personal protective equipment will be provided.
-Closed-toe footwear is required (sandals or flip-flops are not allowed).
-Bring food and water for the day.
-Meet at the Erie/Jumbo/Bonanza Trailhead for sign-ups and a safety briefing.
-Contact Tim George for more information (907) 822-7497 or tim_george@nps.gov

McCarthy Area Council Meeting Minutes
May 30th, 2019, Tony Zak House

Members present: Laurie Rowland, Keith Rowland, Michelle Latvala, Pete Senty, Stephens Harper, Kaleb Rowland, Britt Rowland, David Rowland, Christine Johnson, Erin McKinstry, Charlie O'Neill, Lyn Plomaritis, Elizabeth Schafer, Thea Bemben, John Rice, Dianne Milliard, Bryan Kerr, Cody Simmons, Anya Voskresensky, Nancy Rowland, Dave Syren, Neil Darish, Paul Barrett, Glenda Barrett, Steve Richards, Andrew Linton, Mike Loso, Karen Loso, Sally Gibert, Shannon Robel, Austin Robel, Chris Chester, Mark Vail, Tamara Harper

Others present: Molly Davis, Kayla McGrath, Sharon Tingue, Jonathan Cooperman, Paul Hanis, Isabela Abad, Alexander Plomaritis, Lindee Robel, Ben Shaine, Charlotte Henson, Michael Chambers

President Mark Vail opened the meeting at 6:40pm with a quorum of 9 members present. A voice recorder was used to record the meeting. Motion was made to approve the April 2019 minutes. The minutes can be viewed at the MAC website www.mxycouncil.org.

MAC Bylaws Review Committee
A committee was formed last August to review and recommend changes to MAC's bylaws, to be voted on at the August 2019 meeting. The committee consists of: Trig Trigiano, John Rice, Christine Johnson, Jason Esler, and Chris Chester. President Vail asked the committee to meet within the next month and provide the MAC Board of Directors (BOD) with proposed revisions. The MAC BOD will then review/revise and present to the membership in August for approval.

McCarthy Creek and Clear Creek flooding, road/bridge issues
President Vail reminded us that the road at Clear Creek flooded last year for about 6 weeks. Beavers plugged the culvert earlier this season and the water at Clear Creek was stagnant and coming onto the road again this spring. Since the last MAC meeting, a conference call was organized by Kristin Carpenter of the Copper River Watershed Project, including MAC members/MXY locals, DOT and NPS staff. We discussed possible solutions to the road flooding problems and strategies for funding. We asked DOT about their plans for roadwork to prevent flooding and they had no plans. They emphasized the role of the beavers over McCarthy Creek floodplain deposition as the main cause of Clear Creek flooding. They have not been out to MXY to assess the situation and currently have no money for such a project. After the call with DOT, locals worked to clear the culvert and install grates to prevent beaver activity. Many thanks to guides from McCarthy River Tours and Outfitters for going inside the culvert to clear the dam and for helping install grates, to Matt Vial for building the grates, and to locals who removed the remaining beavers. We still have the challenge of getting DOT to recognize the greater hydrologic issues and how they affect the road. Mike Loso, NPS geologist, wrote a letter to MAC explaining his professional observations and concerns about changes to MXY and Clear Creeks and the Kennicott River and the impacts these changes may cause. (See NPS to MAC letter attached.) This letter will help explain the hydrologic situation and its impacts on our roads, water supply and town, as we work with DOT and apply for grant money. We will apply for money from the Community Transportation Program, but it's very competitive. The application is due in September and Greg Fensterman is leading this effort. This money would not be available until at least 2020, so we still need to advocate for roadwork in the shorter-term. MAC will send a letter to DOT noting the work we have done here and asking them to fix the road to prevent repeated flooding. See attached letter to DOT. MAC will also send letters to our legislators, Senator Click Bishop and Representative Dave Talerico, asking them to fund the roadwork and direct DOT to do it ASAP. It could be helpful if local residents and businesses call or write our legislators to request the same thing--the more requests the better. Last year's roadgrade raise in the same area cost $10,000, we should request $50-100K to improve/raise the road more significantly. Points to mention: our access, water supply, livelihoods and safety are at risk if the road floods again.
Senator.Click.Bishop@akleg.gov 907-465-2327 Representative.Dave.Talerico@akleg.gov 907-465-4527
We discussed scheduling a meeting to brainstorm strategies for preserving southside access and dealing with south-town flooding caused by MXY Creek. Meeting will be announced to the public when time is chosen, likely in mid-June.

Property at the end of the McCarthy Road
We continued the discussion from last meeting about an NPS presence at the private property, owned by Dave Syren and Ray Kreig, at the end of the McCarthy Road. Michael Chambers introduced himself; he's managing the property for the summer and has long-time ties to the area and local residents. We reviewed the statements of support for NPS presence. There was "strong support of members present at the April 2019 MAC meeting for an NPS presence at the end of the road in a most timely fashion". Keith Rowland, Dave Syren and Ray Kreig's statement "The McCarthy Area Council encourages the NPS to make arrangements promptly with the landowners for space at the footbridge for a modest welcoming center, so that this summer's visitors could be served if possible" was also discussed. The NPS does not have funds nor staff for the end of the road this summer, and federal government leases take time to arrange; therefore, NPS will not be there this season. NPS wants locals' ideas about structures' appearance, size, location and layout. There was general agreement that any new building need not be too large, but able to accommodate visitors' inquiries about the park, businesses, activities, and transport and dispense adequate information; this contact station is not meant to replace the main Visitor Center in Kennecott.

People voiced support for NPS presence as a "gateway" welcome to park visitors, to give out information in a consistent, neutral, reliable manner. A suggestion was made to design the NPS buildings/structures distinctly from private businesses that may be located there in the future. There will be 2 more NPS-hosted Kennecott Operations Plan (KOP) meetings in August/September where the public can provide input about Kennecott management for the next 5 years, including this visitor contact station. These meetings will enable the NPS to collect public comments and ideas as they plan a future operation at the end of the road; these ideas can be added to the larger KOP. Comments/ideas can be submitted at anytime to Park Planner Morgan Gantz, morgan_gantz@nps.gov, 907-822-7213.

Motion made to send resolution to the NPS stating: "The McCarthy Area Council encourages the NPS to make arrangements promptly with the landowners for space at the footbridge for a modest welcoming center, so that visitors can be served as soon as possible. MAC encourages the NPS to engage locals, the public and the landowners in ongoing dialogue to solicit ideas and comments about end-of-road design, function and operations. The upcoming Kennecott Operations Plan public meetings are an ideal venue to continue a cooperative planning effort." Motion seconded and passed unanimously. The MAC secretary will write up the resolution and send to the NPS on behalf of the MAC membership. KOP meetings will be announced later in the summer.

NPS Update—Stephens Harper
Stephens introduced Sharon Tingue, the new protection ranger working in Kennecott this summer.
The Kennecott Visitors Center has a new phone number, 907-205-7106, and is open 9-5 daily. Interpretive programs are now offered daily. Elizabeth Schafer has fish permits after the meeting. The NPS book, For the Love of Freedom, was very popular and they are doing another printing, but more books won't be available until November. The online version is available here: https://www.nps.gov/wrst/learn/historyculture/upload/For-the-Love-of-Freedom-508-compliant.pdf

The letter to our community from park Superintendent Bobowski is still available in the mailshack. Kennecott Operations Plan public meetings in August and September will be announced later in the summer. The NPS Search and Rescue (SAR) Team has its sign-up party on Friday, May 31st. Saturday, June 1st, is National Trails Day and NPS is hosting a volunteer trailwork event with the NPS trail crew; meet in Kennecott at 9am to help brush the Root Glacier Trail. The NPS trail crew will be working on the Jumbo and Bonanza Mines, West Kennicott Glacier and the Crystalline Hills trails this summer.

On Monday, June 3rd, the SAR incident management team will train in Kennecott. On Wed, June 5th, Stephens Harper and Mike Loso, park geologist, will meet with Superintendent Bobowski to walk around and discuss McCarthy and Clear Creeks, and specifically how they are impacting the east "dry" channel of the Kennicott River, where the road crosses NPS land and may be subject to flooding at the swimming hole. All of McCarthy Creek is currently flowing into the pond below the second footbridge of the east Kennicott channel, so the hydrology continues to change.

On June 20th, MXY EMS will host a public EMS training day at the airport. Ambulance orientation, emergency runway lights and training for new EMS dispatchers will occur. On June 21st, Jacob Shultz will teach an FirstAid/CPR/AED class at the Kennecott Rec. Hall from 10am-2:30pm, free for those on the EMS call-out list and $100 for anyone else.

KMVFD update—Chris Chester
Trainings will start in June, dates to be announced. Plans for a Firewise Day to remove brush from peoples' yards are in the works. Look for notices at the mailshack about upcoming KMVFD events.

Air Medevac Insurance
With two medevac flights from our community in the last month, residents may want to consider insurance to cover possible medical flight evacuations. Two companies offer annual membership plans. Guardian Flight is covered through AirMedCare Network, which also includes service in 38 other states and costs $125/yr for a household. www.AirMedCareNetwork.com
LifeMed also offers insurance for $49/yr for a household. They have more planes available in AK and helicopters. www.LifeMedAlaska.com. Medicaid covers medevac flights.

New owners of St. Elias Alpine Guides
SEAG has new owners! Mark introduced Anya Voskresensky, Bryan Kerr and Cody Simmons. Congratulations on your ownership, and thanks for the work on the Root Glacier trail earlier this season!

Treasury Report—Tamara Harper
Tamara reported on MAC's financial status and our restricted accounts. Since 2008, we've received $397,370 from the State of AK for community use. MAC has spent $171,705 of that money on projects for community improvements. Since 2012, the Board has been setting aside money from these state grants for operations expenses and a savings account, in addition to designating a portion. We've allocated $70,000 towards operations since 2012 and $46,409 towards savings.

Current restricted accounts:
Operations: $19,321
EMS: $6,373
KMVFD: $4,500
Mailshack improvements: $120
Savings: $46,409
Tony's upkeep: $634
Reserved private donation: $6,000
Unspent approved project funding (EMS & w. roadwork): $2,658
Matching funds for CTP roadwork grant application: $10,000
Total of above restricted accounts: $96,015
Remaining funds available for community projects: $109,256

Financial activity since the April meeting:

Checking account balance: $33,437 (another $25,000 CD will come from this total ASAP)
Savings account balance: $72,005
1, 2 and 5-year CDs balance: $105,086

Deposits:	$207	all interest
	$175	dues
Expenses:	$5	EMS phone fee
	$160	2 bridge cart tires
	$8	cable ties for outhouse vent pipes
	$150	2 cases toilet paper

4th of July parade
The concern was raised that the 4th of July parade has not been family-friendly the last few years, and we discussed how to make it so everybody feels comfortable participating. Should we set guidelines? How would we enforce? Will people voluntarily reduce the nudity, sexuality, and lewd dancing that has occurred in the past? Having the conversation and making everyone aware it's a concern was a good first step towards addressing the issue. We agreed we want everyone to feel comfortable, but also that there's no way to have rules or an entity to enforce them. We don't want to infringe on personal freedoms and creativity, but we also want it to be inclusive and welcoming, which can be a hard balance. Community awareness and voluntary action are the best methods of ensuring the noon parade is family-friendly. Could we have another parade later in the evening without restrictions? The 4th of July parade is and will always be on July 4th at noon in downtown McCarthy.

Wrangell Mountains Center update
Our new intern, Ann Robinson, is here and also working at the Potato. Jonathan Douglass is another intern and Daniel Osborne will be a backcountry guide for the Field Studies program. Wendy is our kitchen manager and Sophie Littee is back this year. Thanks to everyone who helped with the work party on Memorial Day weekend, it was a huge success and we got so much done!

Artists-in-Residence are here, Kelsey from Montana and Paul returns from Ireland! We'll announce their workshops and lectures.

Mark Vail's birdwalk is Sunday, June 9th at 8am, meet at the Hardware Store. Mark Vail and Arlene Rosenkrans will teach a sustainable agriculture and composting workshop on Tuesday, June 25th from 10am-2pm.

12 Evergreen Field Studies students arrive June 22 and 6 faculty will be instructing. We are very excited about this partnership.

MaryEllen Scherl is hosting a writing circle every Wednesday from 8-10pm at Porphyry Place, all over 16 welcome.

Jurgen Ogrodnik will perform a concert in the Kennecott Rec. Hall on June 30th.
If you have ideas for Summer Arts and Lectures Series, contact Stef, stefanie@wrangells.org, 907-554-1035.

Announcements:
If you speak another language at conversational level and could volunteer to help in a Search and Rescue when a foreign language is needed, please call Christine Johnson, NPS, at 907-440-8184.

Community yard sale Saturday, June 8th, at 11am. Everyone can bring stuff to sell or give away, everybody is responsible for cleaning up their own stuff.

Shidnerfest also Saturday, June 8th from 6pm-2am. $20 for food, music and a donation for KCHU.

Britt Rowland is baking and selling bread this summer, $5/loaf. She's also teaching a 3-part baking class for kids ages 8-12. Contact Britt at 907-378-3663.

Michael Chambers, the artist who is managing the property at the end of the road, presented the community with his original painting of Tony Zak, who was his dear friend. Come to Tony's to see this beautiful tribute to an honored community member of the past. Thank you so much, Michael!

Mark Vail adjourned the meeting at 1:40pm.
Next MAC meeting will be Thursday, June 27th, 2019 at 6:30pm.
Minutes taken by Tamara Harper, Recording Secretary.

McCarthy Area Council P.O. Box MXY. Glennallen. AK 99588

June 5th, 2019

State of Alaska Department of Transportation
Dan Adamczak
John Bennett
Margaret Carpenter
John Hoffman

Dear Dan, John, Margaret and John,

Thank you for taking the time to participate in the conference call on May 14th, 2019, coordinated by Kristin Carpenter of the Copper River Watershed Project. We appreciate the dialogue between the many stakeholders and hope for continued conversations about how we can work together to address our flooding-related issues. The McCarthy Area Council, which represents many residents of our area, considers this an important and timely issue and strives to work cooperatively with DOT.

After the meeting, local MAC members and residents were motivated to address the beaver-related factors contributing to the high water levels at our Clear Creek water hole, the drinking water source for many residents. Although the beavers are not the main cause of Clear Creek flooding, they may be exacerbating the problems caused by McCarthy and Clear Creeks' hydrologic and geologic changes. On May 18th, 2019, several local residents removed all the debris inside the culvert and it was flushed downstream. We then installed grates made of rebar on both the upstream and downstream ends of the culvert that will hopefully prevent beavers from plugging the culvert again. We believe all beavers in the area have been killed and the dam has been partially removed. The water level did drop immediately after the culvert was cleared, but it has varied in the last 3 weeks, depending on rainfall. Water moves slowly though the cleared culvert and the water level remains high in Clear Creek and within a foot of the current roadbed. We do not think beavers are causing this high water level and we believe we have done all we can to address the beaver issues, as requested by DOT in the meeting. Several studies indicate that McCarthy Creek deposition is causing Clear Creek to flood, an ongoing process that we cannot prevent or reverse. If any of you would like any of the studies about Clear and McCarthy Creeks, please let us know.

We hope to work with DOT to prevent the flooding, safety risks, drinking water contamination and lack of access to our town that plagued us last year. We have done what we can here to address the beavers, and we request that DOT seriously consider this issue and proactively plan to fix the road in this area, before it floods extensively again. MAC offers assistance in any way we can, and we hope to be informed of any plans you have to visit, study or work in the area. We hope to receive more information about the Schedule, Scope and Estimate of the Clear Creek project for our CTP application, as referenced by Margaret Carpenter.

Please continue to communicate with MAC through Tamara Harper, our Secretary, regarding short-term plans for roadwork in the area and with Greg Fensterman regarding our CTP application, which we plan to submit by the September deadline. Thank you for your help on both approaches to this issue.

We do our best to keep our residents informed about DOT plans, and so we hope to hear an update from you as soon as possible. Given that the road is our only access into town and restricted access affects both our entire local population and visitors, we will be contacting Senator Click Bishop and Representative Dave Talerico to request funding for roadwork as soon as possible. Thank you all for your time and efforts.

Sincerely,

Mark Vail
President, McCarthy Area Council

cc: Kristin Carpenter
Greg Fensterman
Mike Loso
Morgan Gantz
Barry Hecht

National Park Service
U.S. Department of the Interior
Wrangell-St. Elias National Park and Preserve

Mark Vail, President
McCarthy Area Council
PO Box MXY
Glennallen AK 99588

May 28 2019

Mr. Vail,

I am writing to you in my role as a Physical Scientist employed by Wrangell-St. Elias National Park and Preserve. This letter is in response to your request, dated April 26, 2019, for a letter describing my professional observations and concerns related to hydrologic changes on McCarthy Creek, Clear Creek, and Kennicott River, near the towns of Kennecott and McCarthy.

I have observed changes in the hydrology of these watercourses, and also in the nearby Kennicott Glacier and its rapidly developing proglacial lakes, since I moved to the area as a seasonal resident in 1991. I was not at that time an NPS employee, but much of what I observed in the early to mid-1990s is pertinent, and is well-summarized in an early report completed by predecessor, WRST geologist Danny Rosenkrans[1]. I will focus in this letter on a brief summary of my more recent observations, and on my perception of impacts relevant to the National Park Service and our neighbors in McCarthy and Kennecott.

For over a decade, McCarthy Creek has been aggrading in the vicinity of McCarthy townsite. The gravel channel has risen close to 10 feet during the course of numerous flood events typically driven by late summer/fall rains. Flooding hazards in the immediate vicinity of McCarthy have therefore increased, not because the sheer volume of discharged water has grown, but because the channel that holds this water is higher, relative to the adjacent land and buildings, than it used to be. An NRCS report completed some time ago[2] concluded that this aggradation trend was primarily the result of abandonment of the east channel of Kennicott River, into which McCarthy Creek flows just downstream of the townsite. This change resulted in diminished discharge and hence stream power in the lowest reaches of the former East Channel (which is now McCarthy Creek), diminishing the sediment carrying capacity of McCarthy Creek and leading it to deposit alluvial gravels in a growing alluvial fan just below (southwest of) McCarthy before it reaches the mainstem Kennicott River. I am aware of no evidence that this trend has diminished, and last fall's flood suggest

[1] Rickman RL and Rosenkrans DS (1997) Hydrologic conditions and hazards in the Kennicott River basin, Wrangell-St. Elias National Park and Preserve, Alaska. Water-Resources Investigations Report 96–4296. US Geological Survey, Anchorage

[2] Inter-Fluve I (2005) McCarthy Creek Floodplain Management Study. RFQ AK-04-019. USDA Natural Resources Conservation Service, Hood River, OR

that the aggradation continues.

As the aggradation continues, McCarthy Creek is increasingly spilling out of its former channel, seeking low-lying areas adjacent to the creek that contain a number of important and flood sensitive resources. These include historic, privately-owned buildings in the townsite; a privately operated bridge across McCarthy Creek, undeveloped camping areas near the East Channel Kennicott River, a popular "swimming hole" in the upper East Channel, a channel of Clear Creek that is commonly used by local residents for their residential water supplies, and the gravel road that connects areas west of the Kennicott River with both the McCarthy and Kennecott townsites. Some of that flooding, particularly adjacent to Clear Creek and the gravel access road, has been exacerbated by beaver activity, but it is my professional opinion that the ultimate cause of that flooding is the McCarthy Creek aggradation problem previously described.

Together, these changes pose a number of distinct but related threats to residents, visitors, and NPS operations in the McCarthy/Kennecott area. The most significant direct threat to NPS operations is the potential flooding of the gravel access road that leads to Kennecott. This can result (as it did briefly last year) in complete interruption of vehicular access to the National Historic Landmark and park lands surrounding the NHL, with consequences for visitors, for NPS operations, and for visitor safety and protection. Some of the other impacts are more directly focused on private land and infrastructure, but because much of the private infrastructure in McCarthy and Kennecott directly supports NPS visitors and operations, these impacts are of concern to NPS as well.

In recognition of the potential impacts of these hydrologic changes on both public and private infrastructure, NPS is presently in the second year of a funded 3-year project dedicated, in part, to studying ongoing changes in the Kennicott Glacier and the impact of those changes on hydrology and infrastructure. I am in charge of that project. The project addresses many of the specific concerns itemized above, but is considerably broader in its overall scope. The project also is focused on identifying hazards and concerns, rather than on prescribing specific solutions. As the McCarthy Area Council works to address the challenges related to these ongoing hydrologic changes, I and my colleagues at NPS welcome opportunities to share our data and our findings. Many of the required solutions will require actions by MAC and its many collaborators that lie outside the NPS decision-making space, but we look forward to cooperating in whatever ways are appropriate to all involved parties.

Sincerely

Michael Loso

Michael Loso
Geologist
Wrangell-St. Elias National Park and Preserve
PO Box 439, Copper Center AK 99573
Michael_Loso@nps.gov
907-529-9372

McCarthy Area Council Meeting Minutes
June 27th, 2019, Tony Zak House

Members present: Laurie Rowland, Keith Rowland, Michelle Latvala, Pete Senty, Stephens Harper, Kaleb Rowland, Britt Rowland, David Rowland, Hannah Rowland, Christine Johnson, Elizabeth Schafer, Thea Agnew Bemben, John Rice, Anya Voskresensky, Austin Robel, Chris Chester, Tom Golden, Mary Kaye Golden, Doreen Sullivan, Leif Mjos, Bill McKinney, Denise Jantz, Craig Neill, Patt Garrett, Mark Vail, Tamara Harper

Others present: Sharon Tingue, Jonathan Cooperman, Paul Scannell, Charlotte Henson, Robin Cole, Greg Biddle, Mary Ellen Scherl, Samantha Martin, Ben Bobowski

President Mark Vail opened the meeting at 6:45pm with a quorum of 9 members present. A voice recorder was used to record the meeting. Motion passed to approve the May 2019 minutes. The minutes can be viewed at the MAC website www.mxycouncil.org.

MAC Board of Directors (MAC BOD) meetings occur one hour before the regular meetings, May through August. Anyone is welcome to sit in.

MAC Bylaws Revisions
The bylaw committee gave suggestions to the MAC BOD and they will review and present proposed revisions to the membership at the July meeting. These revisions will then be voted on by membership at August meeting. If you still have suggestions, please email MAC secretary by mid-July for consideration.

NPS Update—Stephens Harper, Superintendent Ben Bobowski, Cultural Resources Manager Greg Biddle
The NPS maintenance crew is replacing a crib wall that supports the road in Kennecott, and traffic may be delayed at times.
Ben Bobowski reported that NPS and DOT have been working together on road issues in our area. DOT plans to raise the roadbed at Clear Creek in the late summer/early fall. The two agencies are also working to realign the road and widen the DOT right-of-way, across NPS land, along the east channel footbridge to allow DOT to maintain the entire stretch of road. This may take a while, but the process has started. He thinks DOT plans to brush sections of the MXY road to reduce fire fuels and increase visibility.
He reported good fish runs this season so far, especially Kings in the Gulkana.
He acknowledged the NPS did not recycle last year in Kennecott, and they are planning a better system. This year, NPS purchased a trailer, which will be at the westside, for recycling collection and hauling out. A more comprehensive system is being developed for the future. He appreciated having the issue brought to his attention last year.
He thanked us for our recent letter encouraging NPS to contact visitors at the end of the road property. NPS will take public comments and ideas about the presence at Kennecott Operations Plan public meetings later this season. See attached letter to NPS from MAC sent June 20, 2019.
Phase 3, stabilization of the Kennecott Mill building, is in the contracting stage now. NPS hopes to have a more detailed update for the July MAC meeting.
He reminded us that NPS has funds available when fire risk is increased; KMVFD can request these funds when needed.
Greg Biddle informed us of plans to work on the Kennecott cemetery along the wagon road. The Pioneers of Alaska will be here July 13th and work as a volunteer group along with Greg. They will be mainly managing the vegetation within and around the cemetery. The Pioneers have also offered to build a kiosk on which the NPS will put historic information about the cemetery.
There is still a potential project from NPS Fire Management to re-brush the firebreak lines along the perimeter of the University subdivision, but funding has not yet been secured. WRST is waiting to hear from national NPS fire personnel as to whether the project will be funded this year or possibly next.
Ben reminded us that if we have issues we want to discuss about NPS operations or anything NPS-related, please contact Stephens Harper, 907-707-9739, as Stephens will share concerns/ideas with Ben.

KMVFD update/information—Chris Chester
Chris reminded us that the weather forecast remains hot and dry, with humidity in the lower 20%. Fine materials are very dry and prone to combustion from campfire embers, cigarette butts, etc. Please be very careful with all possible sources of fire. Even though there are no current restrictions on permitted burns, Chris recommends not burning unless absolutely necessary. If you must burn, follow all burn permit stipulations, including having water and tools nearby, fully dousing with water until cold, and not leaving fire unattended. There is a state-wide prohibition on fireworks sales and use, so please spread the word and don't risk it this year, it's too hot and dry.
On Saturday, July 13th, KMVFD will host a firewise event when they will haul brush from properties and take to NPS firepit, where it will be burned safely. KMVFD will have a sign-up sheet for about 10 properties. The first fire training will be Saturday, June 29th at noon at the KMVFD property. Chris and Zack Barrett are currently employed by state forestry patrolling the MXY road and local area. Strelna VFD is also patrolling to Chitina. Smoke continues to blow in from fires across the state and hot weather is predicted to continue. As the hot, dry weather continues, soil dries out and fires can spread underground. Firepits and burn barrel sites must be cleared down to mineral soil/gravel/sand that cannot catch fire. The cottonwood fuzz is extremely flammable.
Call Chris with questions or to report a fire at 907-554-2102.

McCarthy Creek and Clear Creek flooding, road/bridge issues
As noted at last meeting, MAC sent a letter to our legislators asking for funding for road improvement. See attached MAC letter to Bishop/Talerico sent June 7, 2019. Mark read the response from DOT to our letter in June asking about their plans for roadwork. They intend to do a small grade raise in the fall. They continue to work on our Community Transportation project nomination package, due in September. DOT encourages us to write letters early in the process to show community-wide support for the project. Letters from individuals and businesses will be helpful as we work with DOT on the application. MAC will send a letter, but the more the better. We are applying for funding through the Community Transportation Program to significantly raise the roadbed at Clear Creek in McCarthy to prevent future flooding, save our town access for residents and visitors, preserve our drinking water supply and ensure our local businesses can continue to thrive. Please consider writing your own letter ASAP and send it snail mail to:
Judy Chapman, Planning Chief
State of Alaska DOT&PF
2301 Peger Road
Fairbanks, AK 99709
or email to: judy.chapman@alaska.gov and please CC: margaret.carpenter@alaska.gov

If we get funding for a major fix of the roadbed, the height will likely be increased significantly and would change access to our drinking water and the appearance of the area. We must weigh these possible changes against preserving vehicular access to town if the funding is granted and the project proceeds. We would hope to give input when DOT designs the project.
Downtown MXY lot owners, southside residents, Rowcon, and local hydrologists met in mid-June to discuss the impacts of MXY creek on lower MXY lots and southside bridge access. The causes of the problem are clearer than the solutions. More sediment is coming down MXY creek and depositing in the creekbed, raising the level and causing the creek to change course and flood town more often. Climate warming may be contributing to the problem, melting permafrost upstream and releasing more material for deposition downstream. The east channel of the Kennicott River is no longer scrubbing out the MXY creek deposition, so it continues to build up. Barry Hecht, hydrologist familiar with MXY Creek, suggested at the meeting that MXY Creek may clear itself of deposition in a future flood, that widening the creekbed may help remove sediments (cut into bluff on southside to widen?), and recommended another hydrologic report to more fully understand what MXY Creek is doing. The creek bed has raised about 10 feet recently and change is ongoing. FEMA funding may be available for recurring-pattern crises, could this qualify? Many other communities are dealing with worse flooding/relocation issues, we would likely not be high on a FEMA list of pressing disasters and applications must be submitted within a year of the last flood event, which was August 2018. Sally Cox, coordinator at the State of AK Dept. of Commerce, Community and Economic Development may be helpful in guiding us toward possible resources/funding for our situation.

Children's park/playground in MXY and safer intersections—Hannah Rowland
Several parents are thinking about how to create a safe, fun place for kids to play. They are looking for land and making initial plans. Ideally, it would be centrally located and away from main roads. Hannah also encouraged people to brush/clear intersections to make them safer. If anyone has any ideas/suggestions, please contact hannahroserowland@gmail.com.

Noise disturbance over town—Patt Garrett
Patt brought up the issue of out-of-town planes flying low directly over town, creating noise disruption and annoyance. We wondered how to best inform visiting pilots to be more considerate. Wrangell Mountain Air pilots can talk to them over aircraft radio, and the Rowlands agreed to post a sign with suggestions at their fuel tanks where most visiting pilots fuel up. Education will hopefully help solve the issue. We talked about a sign in the plane parking area from the community or a pilots' shack where information could be distributed.

Wrangell Mountains Center—Paul Scannell
Visiting Irish photographer and friend to all, Paul Scannell, announced the WMC's schedule of upcoming events. The Evergreen students are here and currently in the backcountry. The program runs until August 9th. The first Mountain Arts and Science for Youth is Friday from 1-3pm. On Friday night at 7pm, Paul will give a slideshow and talk. This coming weekend, the Off the Chain Bike Collective will be here, fixing bikes at the old Hardware Store. On Sunday, June 30, Jurgen Ogrodnik will be giving a classical guitar concert at the Rec. Hall at 5:30pm. The annual pancake feed is Thursday, July 4th at the Hardware Store from 8-11, a fundraiser for the museum. Kids making history meet at the museum from 1-3 on Friday, July 5th with Grandpa John. On Wednesdays from 8-10pm, Mary Ellen Scherl is hosting a writers' circle at Porphyry Place, everyone welcome to come read their writings or just listen. If you have ideas for Summer Arts and Lectures Series, contact Stef, stefanie@wrangells.org, 907-554-1035.

Treasury Report—Tamara Harper (this was not read at the meeting)
Financial activity since the May meeting:
Checking account balance: $33,569 ($25,000 to be put into a CD, pending required paperwork)
Savings account balance: $72,010
1, 2 and 5-year CDs balance: $105,295

Deposits:	$214	all interest
	$60	dues
	$33	outhouse donations
Expenses:	$8	EMS phone fee
	$13	batteries
	$105	hand sanitizers/cleaner for outhouses

Announcements:
4th of July parade: Britt Rowland is looking for help setting up 4th of July downtown MXY. She can use help putting up decorations and photographs ahead of time, set-up the night before and especially take-down after the festivities on July 4th. They are also looking for MCs to share the duty throughout the day. If you want to help with anything, contact either Britt, 907-378-3663 or Nik Merlino, 907-302-0182. Reminder to keep the parade family-friendly please. The parade starts at noon on July 4th, floats and participants line up at museum at 11:30am.

Britt sells delicious homemade bread in many varieties, contact her, 907-378-3663.

Come to the Pancake Breakfast and silent auction on the morning of the 4th of July, starting at 8am….the annual fundraiser for the museum!

SLOW DOWN please, breathing dust is unhealthy and just gross.

Mark Vail adjourned the meeting at 7:50pm.
Next MAC meeting will be Thursday, July 25th, 2019 at 6:30pm at Tony's.
The MAC BOD meeting will be at 5:30pm.
Minutes taken by Tamara Harper, Recording Secretary.

McCarthy Area Council P.O. Box MXY. Glennallen. AK 99588

June 7, 2019

Dear Senator Bishop and Representative Talerico,

The McCarthy Area Council is the non-profit organization that represents the residents and landowners of the communities of McCarthy, Kennecott, and the surrounding area. We are an unincorporated community and are not part of an organized borough, so I am writing to you today to alert you to an imminent threat to the single road access point to our community and to enlist your assistance to secure emergency and longer-term funding to mitigate this threat.

As you may know, the McCarthy Road ends at the Kennicott River where a footbridge provides access to the historic towns of McCarthy, as well as Kennecott, and the National Historic Landmark four miles further up the road, owned and managed by the National Park Service. A local van service operates on the east side of the Kennicott River and local lodges also operate vans for their guests. Residents can purchase annual passes on a privately-owned bridge across the Kennicott River for vehicle access to and around the east side of the river. Most residents of our area operate small businesses and work in industries dependent on visitor access during the short, busy, summer season. Like many places in Alaska, the season is short and any disruption in access threatens the livelihood of our local economy.

Because we have no public utilities or infrastructure in our area, all residents rely on groundwater or wells for their drinking water. One of the main water sources is Clear Creek, which flows under the State-owned and DOT-maintained road on the east side of the Kennicott River just before reaching the town of McCarthy. During summer 2018, due to the changing hydrology of nearby McCarthy Creek (please see attached letter from Michael Loso describing these changes), that waterway began to impede the drainage of Clear Creek and to cause flooding that crossed the road and made it impassable for a week. This situation is also contaminating Clear Creek and threatening one of our community's most important water sources.

Since last summer, to avoid a similar or worse event this season, McCarthy Area Council members and other concerned residents have attempted to work with our local DOT office to determine how they could ensure access will not be cut off by flooding this summer. Local contractors have proposed immediate solutions that could be implemented while a long-term solution is designed, that would raise the roadbed and install larger culverts for Clear Creek. We believe immediate action is needed to maintain access this summer.

DOT has asserted that without additional funding they cannot implement any near-term solution or begin to design a more permanent one. I am writing to request that you insert funding into the Capital Budget during this legislative session to allow DOT to protect access to our community this summer, and to begin to design a long-term solution. Our local contractors estimate that the immediate issue could be addressed with approximately $60,000.

Please contact me or Tamara Harper, the Secretary for the McCarthy Area Council, to provide guidance on how we can best address this issue as soon as possible. We very much appreciate your time and attention to this critical matter.

Yours very sincerely,

Mark Vail
President, McCarthy Area Council

McCarthy Area Council P.O. Box MXY. Glennallen. AK 99588

June 20, 2019

Superintendent Ben Bobowski
Wrangell-St. Elias National Park and Preserve
P.O. Box 439
Copper Center, AK 99573

Dear Superintendent Bobowski,

Our last two McCarthy Area Council meetings in April and May of 2019 included discussion about the change in ownership at the end of the McCarthy Road at the Kennicott River. We appreciated that the new owners, Dave Syren and Ray and Lee Ann Kreig, requested locals' input on how they might manage the property in the future.

We had productive discussions about the future plans for the property, particularly the potential of an NPS presence to welcome visitors and inform them about the National Park and the area's attractions. We appreciate the NPS asking for ideas and comments from MAC and the local community on how this new entity might take shape. There was broad support for an NPS presence from those attending both meetings. The result of both discussions was unanimous support for the resolution stating:

"The McCarthy Area Council (MAC) encourages the NPS to make arrangements promptly with the landowners for space at the footbridge for a modest welcoming center, so that visitors can be served as soon as possible. MAC encourages the NPS to engage locals, the public and the landowners in ongoing dialogue to solicit ideas and comments about end-of-road design, function and operations. The upcoming Kennecott Operations Plan public meetings are an ideal venue to continue a cooperative planning effort."

Thanks for your interest in our ideas, and we look forward to participating further as the planning progresses. We'll be interested to hear your latest thoughts at the June meeting.

Sincerely,

Mark Vail

Mark Vail
President, McCarthy Area Council

24 HOUR EMS DISPATCH: 554-1240
VOLUNTEER MEDICAL/FIRE RESPONDERS
KENNICOTT / MCCARTHY 2019

Listings in **bold** answered after hours. All numbers 907 area code unless noted.

MEDICAL RESPONSE

Kennecott

Name / Office	NPS	Phone 1	Phone 2
NPS Visitor Center	X	907-205-7106	
St. Elias Alpine Guides		554-4445	231-6395
Kennecott Wild. Guides		554-4444	554-1044
Stephens Harper	X	907-707-9739	
Sharon Tingue	**X**	**907-707-9762**	
Jon Cooperman	**X**	**907-205-7686**	
Elizabeth Schäfer	**X**	**907-205-7631**	**987-7576**
Kirin Riddell	**X**	**907-205-7515**	**707-9196**
Mike Loso	**X**	**907-529-9372**	
Matt Smith	**X**	**907-240-3229**	
Meghan Seifert		**907-244-6346**	
Jared Steyaert		**907-202-0144**	
Karen Loso		**907-529-9371**	
Anya Voskresensky		**651-206-4102**	
Cody Simmons		**503-853-4672**	
Betsy Bradbury		**707-815-2533**	
Spencer Williamson		**201-230-4143**	
Dave Syren		**907-440-2982**	
Michael Smith		**907-205-1129**	

Downtown McCarthy

Name	Phone
St Elias Alpine Guides	554-4409
Wrangell Mountain Air	**554-4411**
Wrangell Mountains Center	**554-4464**
Jake Henricks	**518-320-5575**
McCarthy Lodge	**554-4402**
Matt Vial	**907-244-4074**
Jacob Shultz	**503-860-3040**
Stephens Harper	**907-707-9739**
Zack Barrett	**907-202-3698**
Sarah Ebright	**554-1069**
McCarthy River Tours	907-302-0688
Jeremy Pataky	**907-244-7717**

South of McCarthy Creek

Name	Phone
Greg Runyan	**907-227-0122**
Kristin Link	**907-242-0515**
Jules Hanna	**530-318-6397**
Hunter Brooks	**907-355-8624**

West of Kennicott River (footbridge)

Name	Phone 1	Phone 2
St. Elias Alpine Guides	554-4453	
Andy Shidner	**554-2124**	
Nik Merlino	**907-302-0182**	
Chris Smith	**970-485-2022**	**Note: NOT 907**
Kirin Riddell	**907-707-9196**	**205-7515**
Denise Schleif	**808-780-7244**	

FIRE RESPONSE

Name	Phone
Chris Chester (McCarthy Fire Dept.)	**554-2102**
Division of Forestry	**907-822-5534**

Other Resources

McCarthy Road Fire Departments and EMS

Name	Phone
Daniel Morrison	**554-1078**
Strelna Station Mile 10	**907-823-4011**

Other Emergency Numbers

Name	Phone
Alaska State Troopers	**911 or 907-352-5401 ext. 1**
Life Flight	**800-478-9111**
Poison Control	**800-222-1222**
Chitina Health Clinic	907-823-2213
Valdez Med Clinic	907-835-4811
Cross Roads Med Ctr: 24 hr urgent care	**907-822-3203**

Medical Cache and AED locations listed on back of page

Revised: 06/2019

EMERGENCY MEDICAL CACHE LOCATIONS

Downtown McCarthy

- 6' x 8' building on north side of Old Hardware Store (Wrangell Mountain Center)

Kennecott

- Inside NPS SAR Cache. Single door on the South side ground level of Kennecott General Store. Contact any NPS employee for access.
- Second door to the left (south) of the Kennecott General Store on the old loading deck (unlocked).

West of Kennicott River (footbridge)

- On McCarthy Rd. across from McCarthy Bed and Breakfast in red, white, and blue building on north side of road.

Root Glacier Trail / Lower Jumbo Camping Area

- Adjacent to the lower food storage bin just past the outhouse sign, below the main trail.

South of McCarthy Creek:

- McCarthy Creek Subdivision (University Lands), on Sandstone Trail, the first road to the left into the subdivision off of the Nizina Road.

AED (Automated External Defibrillator) Locations

Downtown McCarthy

• McCarthy Lodge	554-4403	By Cash register in dining room.

Airport:

• NPS building		On outside of building, by front door.

Kennecott

• Kennecott Wilderness Guides	554-4444	On outside of office.
• Kennecott General Store		On NPS bulletin board **ACROSS** from the General Store.
• Kennecott Visitor Center	907-205-7106	Inside the Visitor Center

Root Glacier Trail / Lower Jumbo Camping Area

- Adjacent to the lower food storage bin just past the outhouse sign, below the main trail

West of Kennicott River (foot bridge)

- NPS west side housing — In front of main building (kitchen).
- On McCarthy Rd. across from McCarthy Bed and Breakfast in red, white, and blue building on north side of road.

South of McCarthy Creek:

- In Community Medical Cache building: McCarthy Creek Subdivision (University Lands), on Sandstone Trail, the first road to the left into the subdivision off of the Nizina Road.

Revised: 06/2019

McCarthy Area Council Meeting Minutes
July 25th, 2019, Tony Zak House

Members present: Keith Rowland, Michelle Latvala, Pete Senty, Stephens Harper, Kaleb Rowland, David Rowland, Hannah Rowland, Christine Johnson, Elizabeth Schafer, John Rice, Anya Voskresensky, Chris Chester, Denise Jantz, Patt Garrett, Jeremy Pataky, Lee Ann Kreig, Rebecca Boniek, Jessica Speed, Cody Simmons, Neil Darish, Mike Truskowski, Julie Truskowski, Michelle McAfee, Ben Shaine, Bradie Kozera, Seth Stockton, Mark Vail, Tamara Harper

Others present: Logan Claus, Tessa Bay, Sharon Tingue, Robin A. Cole, Mary Ellen Scherl, Cassie Wandersee, Scott Beacham, Jamie Hart, Jason Devcich, Christina Kirkwood, Amor Rays, Paul Hanis, Samantha Martin, Denise Schleif, Pat Proden

President Mark Vail opened the meeting at 6:30pm with a quorum of 9 members present. A voice recorder was used to record the meeting. Motion passed to approve the June 2019 minutes. The minutes can be viewed at the MAC website www.mxycouncil.org.

MAC Board of Directors (MAC BOD) meetings occur one hour before the regular meetings, May through August. Anyone is welcome to sit in.

Mark thanked the KMVFD for their recent work putting out a cabin fire; we all appreciate their efforts!

MAC Bylaws Revisions
The Bylaws currently state that revisions may only be made at the annual meeting, in August. The Bylaw committee and the Board are drafting revisions that may entail discussion and further revisions and take too much time at the same meeting as the elections. Therefore, we'll vote on one revision in August to allow Bylaw revisions at any meeting with 2 months notice.
The proposed revision of *Article 11: Amendment of Bylaws* is in red:
"Except as may otherwise be specified under provisions of law, these Bylaws, or any of them, may be altered, amended, or repealed and new Bylaws adopted by approval of the voting members of this corporation, either two-thirds of votes cast by written ballot in accordance with Article 4, Section 8 of these Bylaws, or two-thirds of the voting members present at [the Annual meeting] any meeting with 2 months prior notice." We will continue Bylaw discussion/revisions at future meetings.

NPS Update—Stephens Harper, Jamie Hart
Stephens introduced NPS fire management staff from Fairbanks who have been managing the 2 fires in the Park recently. Monday, August 26th is the next Kennecott Operations Plan public workshop at the Rec. Hall, followed by another in September at Tony's. NPS staff will take public comments and suggestions about Kennecott management, and announcements will be sent out prior to the meetings. Jamie Hart will also explain the Kennicott Glacier change project, glacier-monitoring work by Mike Loso, park geologist, at the August 26th meeting at the Rec. Hall. She'll be taking comments on future interpretive displays about this work on our changing glacier.

Prospective contractors for the final phase of Mill Building restoration will be visiting Kennecott in early September; the bid process continues on schedule with bids this fall and work to start next spring.

Contractors will be in Kennecott early September to monitor air quality as part of NPS efforts to assess heavy-metals contamination. They will be blowing up dust and collecting it for evaluation. This ongoing process will continue next summer and NPS will share results with the public.

Federal subsistence hunting permits will be available late July; Elizabeth Schafer will issue at mail and the next MAC meeting. Contact her with questions about hunting or fishing permits, 907-205-7631, Elizabeth_schafer@nps.gov.

Jamie acts as Public Information Officer for the Chetaslina and Long fires, both burning currently in the Park. The Chetaslina fire is 2,125 acres and the Long fire is 150 acres. The fires received precipitation recently, so they have not changed much, but both have spread into the duff layer of the forest and may grow again when warmer, drier weather resumes and smoldering will likely continue until snowfall.

The NPS has lifted the campfire restriction on Parkland due to recent rain.
Check the website akfireinfo.com for information on all Alaska state fires.

Emergency Evacuation Plan—Chris Chester and Stephens Harper
Chris and Stephens talked about general ideas for us to remember during a local emergency when we may need to

evacuate. If we need to evacuate either McCarthy or Kennecott for a fire and we cannot drive out the road, go to places that cannot burn, like the toe of the glacier, glacial moraines or river bars. Fireweed and University subdivisions are less straightforward, evacuation routes would depend on where the fire was located. Have a plan ready ahead of time. Remember to bring essential medications and keep a bag of necessities ready to go. How should we organize/direct an efficient evacuation including visitors that aren't familiar with the area…signs? Designated locals could be in charge of gathering points or directing traffic. Businesses should think about how to get their clients to safe zones. Local residents should continue firewising homes, businesses and properties and ensure ingress/egress routes are cleared. During extended periods of hot, dry weather, fires spread more quickly and evacuation time is reduced; know where you would go and be ready to leave quickly.

Communication during an emergency is key, yet we currently don't have a good way to alert everyone in the valley of an emergency. "Wireless emergency alert" is a system used in many parts of the country to alert everyone with a cell phone in an area. Emergency notifications and instructions can be sent to everyone in a specified area. In 2012 when it became available, Copper Valley Telecom (CVT) opted out of implementing the system due to high cost. The cost has come down since and it would be an excellent way to notify locals and visitors in the event of an emergency. Stephens will talk with CVT to see if they would implement the system, and if local organizations could help in some way. Motion made and passed to send CVT a letter from MAC encouraging them to implement the Wireless emergency alert system. Until then, we have no good way to alert everybody, other than the alarm in Kennecott. The NPS installed an area-wide siren in the top of the leaching plant last year and tested it this year. If the siren goes off (except for short tests), it will sound for a long time and it means EVACUATE Kennecott. It will not be used for any other reason. If you hear the siren, do NOT drive uphill TO Kennecott; the road must be kept clear for vehicles leaving Kennecott. Vehicles leaving Kennecott will likely drive faster than normal and accidents could impede evacuation; it's critical to drive safely during an emergency. NPS practiced evacuating its employees this summer and hopes to hold another evacuation drill with Kennecott residents and business owners/employees next spring. Evacuation routes for residents above Kennecott may be farther uphill above brushline, if a fire blocks the road or renders Kennecott inescapable. If the road out of Kennecott is blocked, people should go to the glacial moraine. We'll need to plan for and assist less-able residents and visitors. There is no one plan that will suit all situations unfortunately; good communication and working together is the key. NPS uses "Send Word Now" service that allows all its employees to receive mass texts and emails for emergency notifications. NPS is working to add all Kennecott residents as well, so that everyone living and working in Kennecott can be alerted at once. By next year, the siren and Send Word Now combined will alert everyone and then send texts with details/instructions. NPS/VFD are working on one-page evacuation plan/map that will be distributed to the Kennecott community. Neighborhoods in the valley could organize mass texts, like the mail plane notifications, so that information could be shared quickly.

Local Kennecott residents can contact Elizabeth Schafer, Elizabeth_schafer@nps.gov, with email addresses, phone numbers for yourself and immediate family members; she will add you to the Send Word Now list.

We can all call or write CVT to encourage them to offer the Wireless emergency alert service:
Copper Valley Telecom, P.O. Box 337, Valdez, AK 99686; 907-835-2231; membercommunication@cvtcboard.net

KMVFD update—Chris Chester
Chris thanked the community for being safe with fire during the hot, dry weather in July. Call 822-TOOL (8665) for current burn suspensions. Burn restrictions were lifted at the time of the meeting, but call to confirm and burn safely; all permit guidelines apply.
Chris described the structure fire that KMVFD responded to on July 11th on the west side. It likely started from spontaneous combustion of oily rags stored in a plastic tote. KMVFD got a call at 5am and about a dozen VFD members responded within 15-20 minutes. Chris was very proud of the VFD response and how their training prepared them to address this fire effectively. Below is a list of the responders; please thank them, we appreciate their efforts so much!

"A huge thank you goes out to all those who were on the scene to help on the fire this morning.
At 5:14 am the Volunteer Fire Department received a call about a structure fire. Within 15 minutes, there were trucks and personnel on the scene and the fire was contained very quickly. Nearly 4,000 gallons of water was put on the fire in about one hour's time and the fire did not spread to other structures."

Special thank yous to:
Chris Epton (First call to the VFD)
Craig Vincent (First on scene)
John Adams (First on scene)
Rich Kirkwood (First on scene)
Denise Schleif (EMS dispatcher)
Erin McKinstry (support)

VFD members:
Joe Rucker
Bradie Kozera
Chris Chester
Julia Page
Zack Barrett
Chris Smith
Lia Lajoie
Bodhi Gaya Jordan
Ian Gyori
Lee Reininghaus

MAC Elections at August meeting
Elections for MAC Officers (President, Vice President and Treasurer) and 8 Directors will happen at the annual meeting on August 29th. Qualified voting members (18 years old, maintaining a residence in the area, see bylaws on www.mxycouncil.org for exact wording) must pay annual dues of $5 before the start of the August meeting in order to vote. Anyone who qualifies as a voting member may run for the Board of Directors. The Board meets one hour before summer meetings and cooperatively writes letters and does administrative business on behalf of MAC. Please email your name and an optional short statement, to be included on the slate of candidates, to the secretary, mccarthyareacouncil.secretary@gmail.com by August 18th. Voting members may vote in person at the meeting, by proxy at the meeting, or by email before the meeting. Dues must be received before a member votes. Full voting guidelines will be sent out prior to the August 29th meeting. Please email the secretary with any questions/clarifications.

Debris in Kennicott River after July's Hidden Lake flood
Vehicles, equipment and debris, including two railcars, a water tanker, part of a crane, and a sewage tank were washed into the Kennicott River as a result of the early July flood. They remain in the river now, causing navigational hazards for boaters and pollution. This has occurred in past floods and MAC has spent public funds to remove debris. Randy Elliot notified MAC that when the river is low and conditions are safe, he will retrieve his debris from the river. Debris came from other properties as well. If debris was flooded from your property, it is your responsibility to remove it. The sewage tank from the Kreig/Syren property at the end of the road is in the river; it was noted that MAC discussed the potential of the tank going into the river in a meeting a few years ago and that Dave Syren offered to work with the family to address the situation. There was general agreement that debris removal would be appreciated.

STIP application for roadwork funding
The BOD drafted a statement in support of the project for which we are applying for funding from DOT.
Motion was made and passed unanimously in support of the following resolution:

"The McCarthy Area Council (MAC) membership unanimously supports the Kennicott Road Milepoint 0.4573 Culvert Replacement project and has allocated $10,000 of MAC general funds, amounting to one-third of our annual revenue, toward capital costs."

We continue to work on our Community Transportation project nomination package, due Sept.15th. DOT encourages us to write letters early in the process to show community-wide support for the project. Letters from individuals/businesses/organizations will be critical in showing our broad support, which will earn us more points in the scoring process. MAC will send a letter, but the more the better. See attached draft letter from MAC for ideas.

Please write a letter expressing your support. Points you may include:

Project name: Kennicott Road Milepoint 0.4573 Culvert Replacement
Benefits of project: prevent flooding/road damage, maintain road access to MXY, Kennecott and WRST Park, preserve clean drinking water supply, local and visitor access, maintains businesses and our livelihoods, preserves salmon passage, maintains road for EMS and VFD response, airstrip maintenance access, increases safety, prevents vehicular accidents/injuries, tourism-based economy needs reliable, safe access for visitors, prevent emergency situations/road closure

Send letters **by SEPT. 15th** snail mail to:
Judy Chapman, Planning Chief
State of Alaska DOT&PF
2301 Peger Road
Fairbanks, AK 99709
or email to both: judy.chapman@alaska.gov and margaret.carpenter@alaska.gov
and please CC: mccarthyareacouncil.secretary@gmail.com

Treasury Report—Tamara Harper
Financial activity since the June meeting:
Checking account balance: $7,406
Savings account balance: $72,013
5 CDs balance: $130,496

Deposits:	$206	all interest
	$20	dues
	$54	outhouse donations
	$259	EMS 4th July donations

Expenses:	$10	EMS phone fee
	$25	State Department of Commerce biannual report fee
	$60	hand sanitizers/dispenser
	$569	general liability insurance premium
	$831	directors and officers insurance premium

Google maps of MXY
Keith Rowland said that Google maps directs visitors to the vehicle bridge and asked if anyone knows how to change that. Several RVs have ended up at the bridge and had trouble backing up. Put a sign at the turn at John Adams's airstrip? Please contact him if you can help.

Smoking at community events
Hannah Rowland requested people consider others when smoking at community events. Could people please smoke away from others and note the wind direction, in order to keep smoke from blowing toward non-smokers. Second-hand smoke is hazardous to everybody, and cigarettes pose a fire risk. She encouraged smokers to smoke privately and responsibly.

Footbridge future
Elizabeth Schafer noted that the July flood significantly eroded the Kennicott River banks under the footbridge, threatening the westside approach. As a community, we need to think about the future of the footbridge, its possible inaccessibility, and what we'll request of DOT. Both sides are at risk, and she advocated for a proactive approach. NPS sent photos/explanation of erosion to John Hoffman at DOT after the flood; John said he would forward to DOT bridge design department in Fairbanks. They are hopefully aware of the issue, but follow-up will be needed. The dry channel footbridge decking could be used as "spare parts" to extend the Kennicott footbridge? Suggestion was made for MAC to write a letter to northern region DOT notifying them of increased erosion and encouraging a plan before the footbridge becomes inaccessible. MAC secretary will draft this letter, get BOD approval and send to DOT.

Announcements:
Chris Chester/KMVFD thanked everyone for coming to the VFD Kickball event, they raised over $5,000! They will continue to encourage a family-friendly event for the whole community.

Hannah Rowland continues to work on the pedestrian-trail-to-Kennecott project; she submitted paperwork to the RTCA last month to keep the process moving along.

Send your name into the secretary by August 18th if you want to run for MAC BOD.

Mark Vail adjourned the meeting at 7:50pm.
Next MAC meeting will be Thursday, August 29th, 2019 at 6:30pm at Tony's.
The MAC BOD meeting will be at 5:30pm.
Minutes taken by Tamara Harper, Recording Secretary.

DRAFT

Judy Chapman, Planning Chief
Margaret Carpenter, Northern Regional Planning Chief
ADOT&PF, Northern Region
2301 Peger Road
Fairbanks, AK 99709

Dear Judy and Margaret,

The McCarthy Area Council (MAC), a body of approximately 120 local residents of the Kennecott-McCarthy area, has discussed the ongoing McCarthy Creek flooding situation at most of our monthly meetings for the past couple years. It is an important issue to all our members and one that affects everyone who lives here.

Last summer, our only road into town flooded and impeded access for many weeks. We all experienced serious consequences: locals and visitors had to walk or drive through deep water to homes, businesses, and the Park. Some vehicles were unable to cross. Our drinking water supply was at risk. The flood caused vehicular accidents and businesses suffered due to the difficulty of town access. Reliable road access to town is of utmost importance to our community.

MAC strongly supports the project described in our Statewide Transportation Improvement Program application. The project would significantly raise the roadbed across Clear Creek, preventing the flooding and access issues that have plagued us recently and which pose ongoing risks. The project would help ensure continued access to our homes and businesses, as well as allow visitors from all over the world to visit the largest National Park in the country. We are a tourism-based town, and these visitors are essential to our livelihood in this place.

MAC voted in full support of the following resolution at our July 2019 meeting: “The McCarthy Area Council (MAC) membership unanimously supports the Kennicott Road Milepoint 0.4573 Culvert Replacement project and has allocated $10,000 of MAC general funds, amounting to one-third our annual revenue, toward capital costs.” We stand ready to support the project in any way possible, and we would be most appreciative if the Alaska Department of Transportation would prioritize this important work.

On behalf of our membership, thank you sincerely for your consideration of this project application.

Mark Vail
President, McCarthy Area Council

McCarthy Area Council Meeting Minutes
August 29th, 2019, Tony Zak House

Members present: Keith Rowland, Laurie Rowland, Michelle Latvala, Pete Senty, David Rowland, Hannah Rowland, Christine Johnson, Elizabeth Schafer, John Rice, Anya Voskresensky, Chris Chester, Denise Jantz, Cody Simmons, Bradie Kozera, Seth Stockton, Natalie Bay, Christina Kirkwood, Debby Wemple, Nancy Rowland, Rob Wesson, Paul Barrett, Glenda Barrett, Malcolm Vance, Dianne Milliard, Austin Robel, Lyn Plomaritis, Sophie Littee, Bryan Kerr, Logan Claus, Cindy Hendel, Kristin Link, Mark Vail, Tamara Harper

Others present: Sharon Tingue, Jamie Hart, Samantha Martin, Rachel Franklin, Devon Bieniek, Jon Cooperman, Mike Trimmer, Nick Carter

President Mark Vail opened the meeting at 6:35 pm with a quorum of 9 members present. A voice recorder was used to record the meeting. Motion passed to approve the July 2019 minutes. The minutes can be viewed at the MAC website www.mxycouncil.org.

Membership business
As stated in our Bylaws in *Article 3, Section 2, Qualifications of Members*, "Any questions concerning eligibility shall be decided by a vote of the membership." Debby Wemple requested a vote to approve membership for herself and Joey, as their current housing doesn't meet the requirement of the Bylaws. They were approved unanimously by voice vote of the membership. The MAC Board is working on Bylaw revisions to address this issue that will be voted on next year.

Election of MAC Board of Directors
11 MAC members were on the slate for the 11 seats on the 2020 MAC Board of Directors. Nobody else added their name to the slate. Motion made to elect the slate of 11 by voice vote, motion seconded. Those on the slate were elected unanimously by voice vote. The 2020 Board consists of: Mark Vail, President; Hannah Rowland, Vice President; Tamara Harper, Secretary/Treasurer; Thea Agnew Bemben, Denise Jantz, Christine Johnson, Jeremy Pataky, John Rice, Elizabeth Schafer, Jacob Shultz, and Seth Stockton, Directors.

Safety in our community—Rachel Franklin
Rachel described a recent incident when she was assaulted by a community member. She now has a restraining order against him. She opened a discussion about safety in our community, mental illness, substance abuse, and how we as a community might work together to prevent future problems and effectively deal with the ones that currently exist. We agreed that people with mental illness should not be stigmatized or shunned, but we need to encourage them to seek medical care and therapy outside of McCarthy, as we do not have adequate services here. We hope businesses here will choose not to sell alcohol to those in our town who have problems with or addiction to alcohol. We hope that friends of those dealing with mental illness or substance addictions can intervene with these people to prevent harm to themselves or others, before a tragedy could occur. Fears were expressed about the potential outcomes of combined mental instability, substance abuse, and firearms. We live with many freedoms here, but with those come additional responsibility to police ourselves and each other. We should move toward being a community that does not tolerate risks toward or abuse of each other. Suggestions were made how to more effectively deal with these situations: bringing in a professional/counselor to speak to our community about how to manage/prevent issues, offering financial assistance, interventions by close friends with people at risk, having more events/activities that aren't centered on alcohol consumption, talking about issues more freely and offering support to others in town, cutting off sources of alcohol and drugs to at-risk people, saying something if you notice things aren't right, talking directly to the person or with others about how to deal with it. This discussion was a first step toward opening up dialogue about these issues, in hopes of improving our community's response.

MAC Bylaws Revisions
One bylaw revision was adopted unanimously by voice vote. *Article 11: Amendment of Bylaws, Section 1. Amendment* now reads: "Except as may otherwise be specified under provisions of law, these Bylaws, or any of them, may be altered, amended, or repealed and new Bylaws adopted by approval of the voting members of this corporation, either two-thirds of votes cast by written ballot in accordance with Article 4, Section 8 of these Bylaws, or two-thirds of the voting members present at any meeting with 2 meetings prior notice." The MAC Board will continue working on additional amendments to be presented at a later meeting for membership vote. If anyone has amendment suggestions, submit to the MAC secretary. Bylaws can be viewed at www.mxycouncil.org.

Community Alert System
In response to our discussion last meeting about a wireless alert system that could notify everyone in the area of an emergency, Chris Mishmash from Copper Valley Telecom informed us that they are working to implement CMAS (Commercial Mobile Alert System) capabilities on their mobile network this year. We appreciate this effort from CVT and will keep the membership informed about the progress. MAC will send a letter of support for CMAS to CVT.

House Fire Prevention/VFD update—Chris Chester, Mike Trimmer
Chris reminded us about safe practices with fire/woodstoves as we head into fall. Make sure chimneys are clean to prevent chimney fires. Without local building codes, we must be more responsible for our own building practices and structure design, such as proper stove clearances and safe chimney materials like metalbestos. Even though there is no current burn suspension, it's still very dry and we must burn safely while attending our burn barrels with water and tools nearby. Keep firewising! Firewise clearing is an ongoing process that needs continual work. Keep grass around properties watered and mowed. Add skirting and soffits to your home. Spontaneous combustion can occur with improper storage of oily rags. Piles of oily rags generate heat and can combust; do not pile rags on top of each other. Hang oily rags to dry and then burn when it's safe, or soak them in water and store in sealed metal container for disposal. Don't store fuel next to your home.

Chris also reminded us that NPS has allowed us to bring brush to their firepit at the toe of the glacier. ONLY brush is allowed there—no building materials, furniture, lumber, etc. For now, it's an honor system for us to bring brush on our own to this pit and please put it directly in the hole. Do not bring anything other than brush to this pit for burning!
Mike Trimmer informed us the state fire season has been extended until September 30th, with burn permits required for any fire larger than a campfire. AK Forestry can now give tickets with required payments for burn violations, an enforcement tool they will use more in the future. Call 907-822-8665 to learn if there are suspensions or closures to burn permits. The Community Wildfire Protection Plan will be updated in the near future with input from our community. Mike introduced Nick Carter, the new area forester for Tok/Copper River. State Forestry is considering some timber sales on state land in our area for personal use and/or small-scale commercial use. Questions regarding firewood use and forestry management in the area, contact Nick Carter, nick.carter@alaska.gov, 907-883-1400.

Mike said this fire season in AK was unusual, with very little winter snowpack, early break-up and extremely dry conditions; state firefighters have been busy all season since late March. He thanked our local VFD, our first line of defense, for their hard work and service this season. He clarified burn permit terms: suspensions and closures. Mike can impose suspensions to permits in our area, but closures, which cover all burning, must come from the State Fire Marshall. It can be difficult to coordinate consistent burn restrictions with several agencies/land managers in the area, i.e. State of AK, NPS, BLM and Ahtna Corporation; they will work together next year to improve the system.

STIP application for roadwork funding
The application to fund roadwork at Clear Creek is mostly done and will be submitted by September 15th deadline. Letters of support are still very important and will help our chances of receiving this funding.
Please write a letter expressing your support. See MAC letter of support attached for ideas.
Points you may include:
Project name: Kennicott Road Milepoint 0.4573 Culvert Replacement
Benefits of project: prevent flooding/road damage, maintain road access to MXY, Kennecott and WRST Park, preserve clean drinking water supply, local and visitor access, maintains businesses and our livelihoods, preserves salmon passage, maintains road for EMS and VFD response, airstrip maintenance access, increases safety, prevents vehicular accidents/injuries, tourism-based economy needs reliable, safe access for visitors, prevent emergency situations/road closure.

Mail letters **by SEPT. 15th** to:
Judy Chapman, Planning Chief
State of Alaska DOT&PF
2301 Peger Road
Fairbanks, AK 99709
or email to both: judy.chapman@alaska.gov and margaret.carpenter@alaska.gov
and please CC: mccarthyareacouncil.secretary@gmail.com

NPS Update—Sharon Tingue, Jamie Hart
Sharon Tingue, Kennecott park ranger, reported the recent Kennecott Operations Plan listening session went well; the next one will be at Tony Zak's on September 12th at 6pm, all are welcome. NPS rangers are assisting AK state troopers in Slana, on the north side of the park, with a law enforcement situation; an armed and dangerous felon is at large and threatening others. The situation remains unresolved. NPS staff, SAR team, EMS and others responded to a motorcycle accident recently at mile 28 on the McCarthy Road. It involved using ropes in a high-angle rescue to bring the victim back up to the road; he was transported by vehicle to Gulkana where he was flown to ANC. He is in stable condition.

Jamie Hart, South District Interpreter, is working on a project with Mike Loso on the Kennicott glacier changes. They have created an interpretive plan for the area, and they would like comments/feedback from the public. See attached documents explaining the stories they plan to tell and interpretive display locations and send feedback to Jamie until September 13th. Jamie_Hart@nps.gov. This project will also be discussed at the Kennecott Operations Plan public meeting on September 12th, 6pm at Tony's. The Kennecott Visitor Center will be open until 5pm on September 8th.

EMS update—Paul Barrett and Kristin Link
Paul Barrett announced that the Barrett family will donate two parcels of land to the community. One, next to Tony Zak's, will be for an EMS building with space for the ambulance, storage, and patient assessment and/or classroom. This parcel will go to the MXY EMS organization. Jacob Shultz and Stephens Harper, along with the MXY EMS board, have been working with the Barretts on this project. Plans include starting with an ambulance bay and hopefully expanding to include more space; Grant Crosby has donated his time designing the building. The goal is to build a structure that can serve the community's growing EMS needs into the future, and MXY EMS would appreciate ideas about what the public wants in this facility and from MXY EMS as an organization. To complete this project, fundraising will be necessary in the near future. Please offer suggestions or inquire about donating at mxyems@gmail.com and mccarthyareacouncil.secretary@gmail.com. Big thanks to all EMS volunteers and SAR team members who respond all season long to emergencies!

The second parcel will be for a children's playground near the ballfield, next to the Elsbergs' property. Hannah Rowland and Zack Barrett initiated this effort. After the land donation, volunteer efforts will be needed to clear the property and build the playground. Contact Hannah or Zack for information or to help the effort. Hannahroserowland@gmail.com
If anyone has any issues with these land donations, please contact Paul Barrett within 60 days at 206-713-4567.

Debris in Kennicott River after July's Hidden Lake flood
Keith Rowland reported that Randy Elliot intends to remove his equipment from the river when the water level goes down. MAC will write a letter to DOT informing them of the increased erosion under the footbridge that occurred during the July flood.

Treasury Report—Tamara Harper
Financial activity since the June meeting:
Checking account balance: $34,017
Savings account balance: $72,017
5 CDs balance: $130,738

Deposits:	$246	all interest
	$140	dues
	$70	outhouse donations
	$1,000	private donation for VFD
	$25,467.33	State of AK 2020 community assistance program grant
Expenses:	$9	EMS phone fee
	$58	1 case toilet paper for outhouses

Announcements:
We decided we did not need a September meeting.

It's still dry and dusty…. Slow Down when you drive by bikes and pedestrians!

The WMC is hosting the half-marathon and 5-mile run on Sat, August 31st, with spaghetti feed to follow at 6pm.

Hannah Rowland is hosting a square dance/potluck on Saturday, 5-8pm, at the Kennecott Rec. Hall. All welcome.

Elizabeth Schafer thanked whoever cleared the downed trees on the wagon road after the recent windstorm!

Mark Vail adjourned the meeting at 8:35pm.
Next MAC meeting will be Thursday, March 26th, 2020 at 11:30am at Tony's.
Minutes taken by Tamara Harper, Recording Secretary.