

**Agency: Department of Natural Resources****Project Title:****Project Type:** New Construction and Land Acquisition

# Mastodon Trail

**State Funding Requested:** \$246,657**House District:** Fairbanks Areawide (7-11)

One-Time Need

**Brief Project Description:**

Construct a 10.5 mile trail to Nugget Creek Public Use Cabin in Chena River State Recreation Area. This will provide an overland/year-round trail to the cabin and eventually link with the Granite Tors Trail to the east forming a 40 mile network of non-motorized trails to three public cabins / trail shelters.

**Funding Plan:**

Total Project Cost:	\$340,632
Funding Already Secured:	(\$93,975)
FY2012 State Funding Request:	<u>(\$246,657)</u>
Project Deficit:	\$0

*Funding Details:*

2009/2010, National Park Service Grant: RTCA Program. Conceptual Trail Corridor Identification \$44,000

2011, State Trails Office: RTG Program Phasel: trail corridor clearing \$49,975

A Capital Appropriation from the legislature will be leveraged (50% match) for additional funding from the Land & Water Conservation Fund to build the trailhead.

**Detailed Project Description and Justification:**

The Northern Area of Alaska State Parks seeks funding to construct 10.5 miles of new trail in Chena River State Recreation Area, 26 miles east of Fairbanks, Alaska. This new trail (Mastodon) will provide safe, year-round access to Nugget Creek public use cabin. The existing access to the cabin crosses the Chena River which can be hazardous due to thin ice or open water, even in late winter. The new alignment will also provide an overland connection to Mist Creek Trail and eventually link the very popular Tors Trail to the east forming a 40 mile network with three public use cabins / trail shelters. The trail will provide a new opportunity for mountain bikers, skiers, and horseback riders to access a public use cabin on a non-motorized trail.

BACKGROUND: From 2003 through 2006 the Chena River State Recreation Area Management Plan went through a substantial public review process. The following recommendations came from that process. On page 24, the plan states that several routes are possible and should be considered for the future, such as trails connecting the Mist Creek Trail with the Granite Tors Trail. Future new trails should link to existing trails to create more loop trail opportunities or to extend into new areas." Elsewhere, on page 54, the plan directs Northern Area State Parks to design the Mist Creek Trail for winter and summer non-motorized use and to work with user groups and individuals to expand winter trails and a cabin system for non-motorized users. Finally, on page 47, the plan recommends that trail access to the existing Nugget Creek cabin be improved.

These recommendations served as a catalyst for the Northern Area State Park proposal for the Mastodon Trail. The Mastodon Trail will implement these plan recommendations, providing a sustainably designed and constructed year-round trail that will substantially improve access for people of all ages and skill levels.

In October 2009, the Northern Area of Alaska State Parks was awarded a grant for technical assistance from the National Park Service, Alaska Region Rivers, Trails, and Conservation Assistance program (RTCA) to assess the Mist Creek trail alignment and identify a sustainable non-motorized trail to Nugget Creek Cabin in Chena River State Recreation Area. RTCA technical assistance was provided from October 2009 through September 2010. NPS and park staff spent six days in the field, hiked 55 miles, and laid out and flagged 10.5 miles of trail. 10 8-hour days were spent on post-field analysis, map creation, and report writing.

#### Public Outreach and Support

The 2006 update of the Chena River State Recreation Area Management Plan involved several rounds of public review and many meetings and workshops that gave the public an opportunity to comment on plan proposals, including those recommendations highlighted above. Since that time, improvements made on other trails in the area have increased public support for trail development and the public has been kept abreast of recreation area trail projects through regular media releases. The Northern Area State Park Citizen Advisory Board (Northern Area CAB), a diverse group of trail users who assist recreation area staff with management and development issues, has been an important conduit for public participation and opinion, conveying ideas and concerns to and from park staff.

The proposed Mastodon Trail has the full support of the Northern Area CAB. In recent years, Northern Area CAB members, Tom Paragi and Dave Payer, have been instrumental in carrying forward the proposal. Both have researched a number of routes for the Mastodon Trail that would link the Tors Trail to the Mist Creek Trail and improve access to the Nugget Creek cabin. They conducted reconnaissance for these routes during the winter of 2007 and spring of 2008 and drew up a map reflecting their findings, including a potential shelter location. For the past several years additional volunteers have scouted and flagged alternative trails to the Nugget Creek cabin.

In 2010, Northern Area State Parks began a formal public involvement process to solicit input on the trail proposal. A video-conference was hosted on March 11 in Fairbanks by the Northern Area CAB and RTCA. Key stakeholders were invited to discuss the Mastodon Trail and receive training on sustainable trail design and construction and trail management objectives. Two Northern Area CAB members and three Northern Area State Park staff attended. Due to technical difficulties with the video-conferencing, however, the training component was rescheduled to March 23 when Kevin Meyer, Alaska NPS Regional Trails Specialist, could present the materials in person. At that later meeting, ten Northern Area CAB members, three Northern Area State Park staff, and seven visitors attended.

On May 6, the Fairbanks Daily News Miner published an article about the trail proposal and upcoming public open house hosted by the Northern Area CAB. The open house, held on May 12 in Fairbanks, gave the wider public an opportunity to learn more about the trail proposal and provide feedback. Nineteen people signed in at this open house.

As part of its public outreach, Northern Area State Park also set up an on-line survey for public input, with questions about the Mastodon Trail. The trail received broad public support in the on-line survey. Of the 181 people completing the survey, more than 91% support building a sustainable trail to Nugget Creek cabin. Most survey takers (48%) selected hiking as the principal type of access they'd use the trail for, with skiing and bicycling selected by the next highest percentage of survey

takers (16% each). Sixty-one percent of those surveyed supported opening the trail to bicycles. Ninety-five percent of those surveyed support a trail network with shelters in the Tors Management Unit.

On June 24, 2010, the Fairbanks Daily News Miner published an article noting that "after receiving overwhelming support, Alaska State Parks is going ahead with a plan to build a new non-motorized trail in the Chena River State Recreation Area." The article described the work done in June by RTCA trail specialists and Chena River State Recreation Area trail crews to layout and flag a conceptual trail corridor.

In December of 2010 the Northern Area of Alaska State Parks applied for a Recreational Trail Grant to clear 10.5 miles of trail corridor 6' wide and reshoot the grade and reflag the critical edge in preparation for mechanical construction. The grant hardens the first 1,117' of trail. The next section of trail (2,160') will be ditched and elevated and capped with 108 yards of gravel. This grant request was the second highest scoring grant in the diversified category.

This capital project will finish the Mastodon Trail and includes purchasing and installation of four trail bridges.

### Project Timeline:

Permitting: April / June 2011

Trail Hardening Phase I: July / Aug. 2011

Trail Clearing Sept. 2011 / May 2012

Contracting Jan. / April 2012

Final Grading / Flagging June 2012

Contract for final phase construction July 2012

Finish work / clean-up July / Sept. 2013

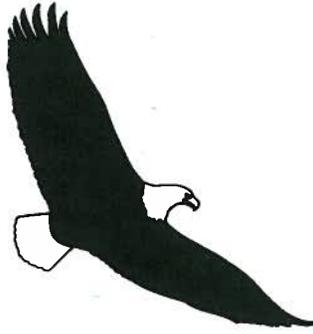
### Entity Responsible for the Ongoing Operation and Maintenance of this Project:

State of Alaska, Division of Park and Outdoor Recreation

### Grant Recipient Contact Information:

Name: Brooks Ludwig  
 Title: Park Superintendent  
 Address: 3700 Airport Way  
 Fairbanks, Alaska 99709  
 Phone Number: (907)451-2698  
 Email: brooks.ludwig@alaska.gov

Has this project been through a public review process at the local level and is it a community priority?  Yes  No



## **Mastodon Trail Budget Projections**

The budget table on the next page was compiled by Alaska Trails and accurately reflects costs associated with construction of the Ester Dome Single Track Trail (EDS) in Fairbanks. EDS is very similar in nature to the proposed Mastodon Trail. They both are being mechanically constructed using best trail management practices. Both trails have four foot treads and are constructed for non-motorized use.

The Mastodon Trail has some additional structure costs. 4 bridge crossings are needed. The cost for the additional structures is \$62,650.

The National Park Service; Rivers, Trails, & Conservation Assistance Program provided \$44,000 of in-kind services to Alaska State Parks, assessing potential sustainable alignments for the Nugget Creek Public Use Cabin and provided a detailed trail corridor evaluation.

Using the Alaska Trail calculations of \$22,284/mile plus the additional \$62,650 structure costs, and \$44,000 NPS in-kind service grant, the total project comes to **\$340,632**.

A 2011 Recreational Trail Grant application for the Mastodon Trail was scored second highest in the state in the diversified category and will receive \$49,975. Adding that to the \$44,000 NPS in-kind service grant from 2009 will reduce the funding request to **\$246,657**.

If full funding is not available, this project could be completed in two phases.

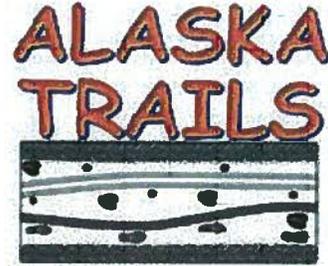
Phase I would be to install the four bridges and complete the first 5 miles of trail at **\$150,272**.

Phase II would finish the last 5.5 miles at a cost of **\$96,385**.

The Land and Water Conservation Funding Program (LWCF) provides federal grants of \$100,000 or more to outdoor recreation projects. These grants require a %50 match. If the legislature appropriates \$200,000, Alaska State Parks will be eligible to apply for \$100,000 in LWCF to construct the trailhead.

## Trail Construction -- Project Cost Calculation

Project: **EDS - 9.72 Miles, 2009-10 Mech** 28-Sep-10  
 Designed Miles: **9.72** 15:01



### Project Budget

	<u>Per Ft</u>	<u>Per Mile</u>		<u>Job Total</u>	
Design	0.09	499.96	2%	4,860	2%
Permitting	0.00	0.00	0%	3,200	1%
Layout	0.09	499.96	2%	4,860	2%
Clearing	0.11	580.80	3%	5,645	3%
SWPPP				1,500	1%
Equip Mobe/Demobe				100	0%
Construction, Mech	2.20	11,616.00	54%	112,908	52%
Construction, Hand					
Hand Finishing	1.50	7,920.00	37%	76,982	36%
Seeding	0.00	0.00	0%	0	0%
Trail Diagram	0.04	203.81	1%	1,981	1%
Supplies, misc	0.05	264.00	1%	2,566	1%
<b>Construction</b>	<b>\$4.09</b>	<b>\$21,585</b>	<b>100%</b>	<b>\$214,602</b>	
Structures...				500	0%
Signage...				500	0%
Kiosks...				1,000	0%
Other...				0	0%
<b>Structures</b>				<b>\$2,000</b>	
<b>Project Mgt @ 5% + fee</b>				<b>\$0</b>	<b>0%</b>
<b>Total Cost</b>				<b>\$216,602</b>	<b>100%</b>
<b>Cost / Mile (including Structures)</b>				<b>\$22,284</b>	

**Trail Construction -- Time & Cost Inputs**

**Project:** EDS - Mech Calc 28-Sep-10 13:20

Hours	8
Daily Prep Hrs	2
Crew Size	2
Cost / Man / Hr	\$70.00
Feet / Man / Hr	80
Tool-Mech Rental / Day	\$330.00

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Feet Constructed / Day	960	Yrds	320
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Cost / Foot	\$1.51
Cost / Mile	\$7,975.00
Cost / Day	\$1,450.00
Days to Construct Mile	5.5

**Assumptions**

**Hand Crew:**

~20% slope, light vegetative matt, loss soil =	15'/hr
~50% slope, mod vegetative matt, loss soil =	13'/hr

**Mech Crew (Sweco & excavator; 2men):**

~20% slope, light vegetative matt, loss soil =	62.5'/hr	(125'/hr actual cut)
~50% slope, mod vegetative matt, loss soil =	50'/hr	(100'/hr actual cut)

**Mech Crew (Sweco & excavator; 1man):**

~20% slope, light vegetative matt, loss soil =	75'/hr
~50% slope, mod vegetative matt, loss soil =	60'/hr

**Hand Finishing:**

~20% slope, light vegetative matt, loss soil =	45'/hr
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	HrlyRate	TotCost
clearing/construction crew	\$12.50	\$20.00
equipment operator	\$25.00	\$40.00
design/layout	\$50.00	\$80.00

**Davis-Bacon Scale:**

laborer	\$28.24	\$45.18
equipment operator	\$35.52	\$56.83

SAGA crew	\$20.31
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Hand tool re-cap (long term, per day)	\$10.00
Sweco & excavator rental (long term, per day)	\$330.00

Sweco	\$160/d
Excavator	\$90/d
Fuel & fluids	\$80/d



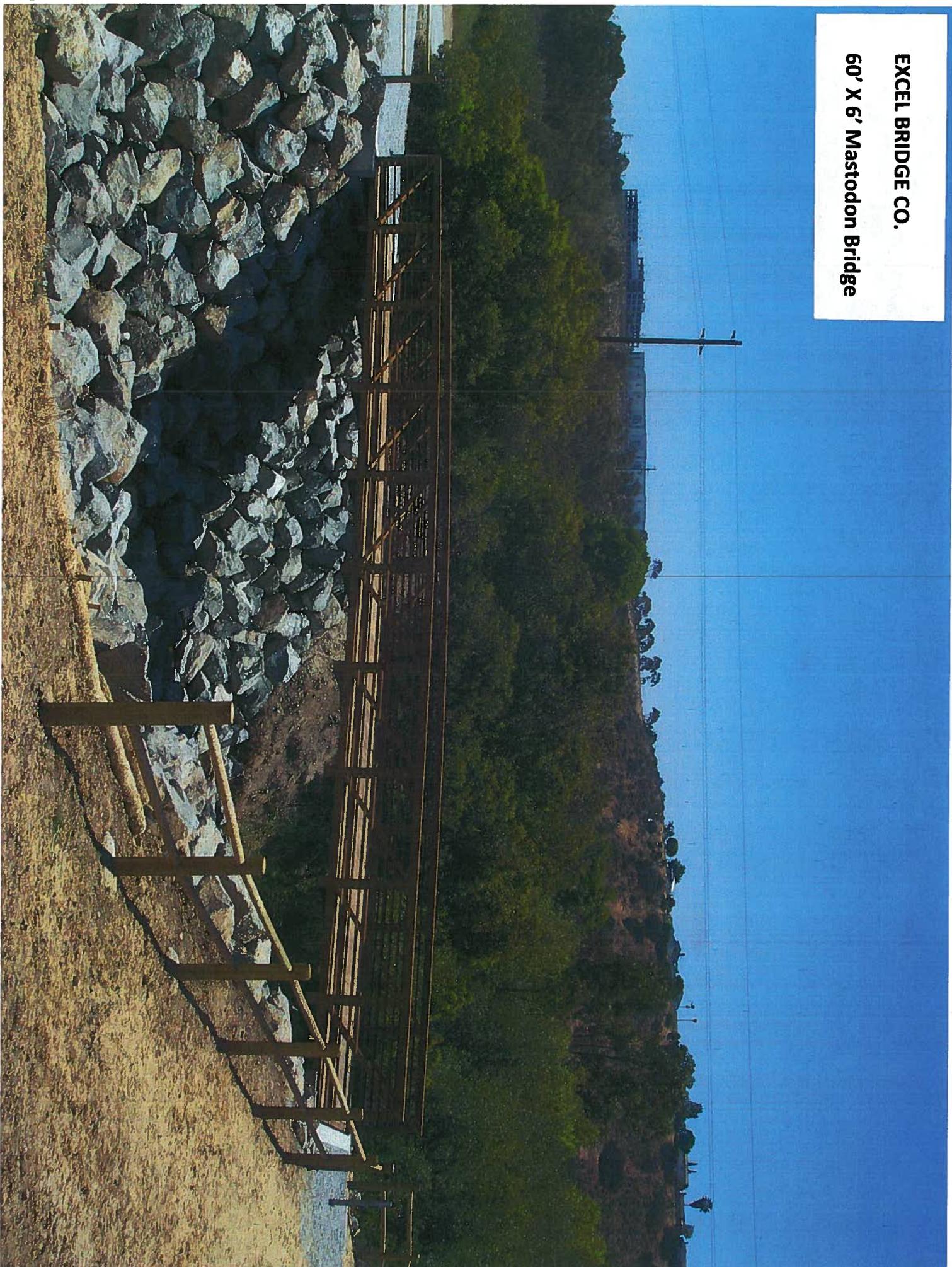
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## Mastodon Bridge Estimates

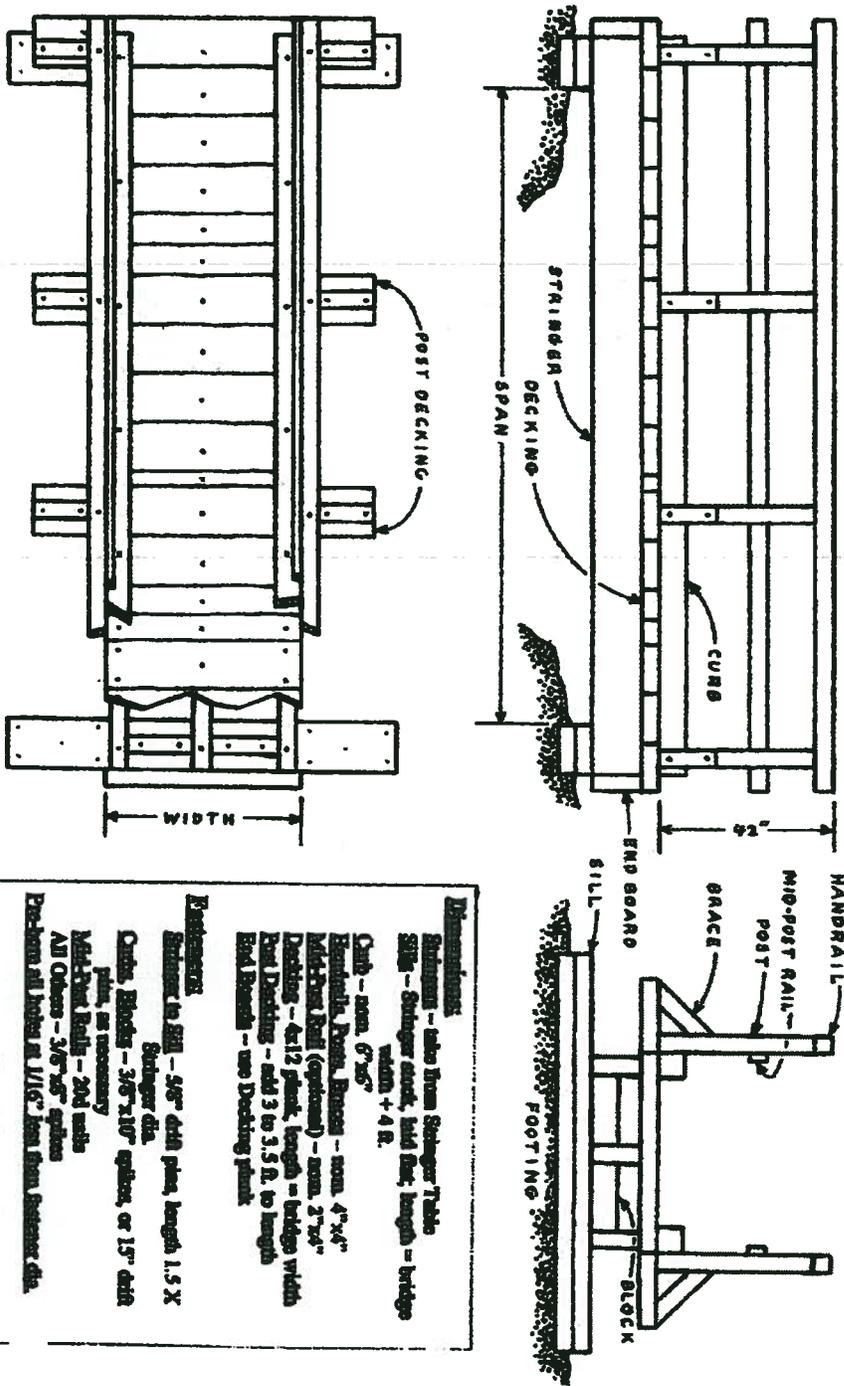
<b>Excel Bridge Company (delivered to Fairbanks)</b>	<b>60' x 6' metal bridge</b>	<b>\$52,000</b>
<b>Wooden Bridge</b>	<b>22' x 5' @ \$150/ft.</b>	<b>\$3,300</b>
<b>Wooden Bridge</b>	<b>24' x 5' @\$150/ft.</b>	<b>\$3,600</b>
<b>Wooden Bridge</b>	<b>25' x 5' @\$150/ft.</b>	<b>\$3,750</b>
<b><u>Total</u></b>		<b><u>\$62,650</u></b>

**EXCEL BRIDGE CO.**

**60' X 6' Mastodon Bridge**



**TIMBER BRIDGE**



**Dimensions:**  
 Sillings - same from Sillings Table  
 Sills - Sillings stock, half size; length = bridge width + 4 ft.  
 Curb - same, 8"x5"  
 Handrails, Posts, Braces - same, 4"x4"  
 Mid-Post Rail (optional) - same, 2"x4"  
 Decking - 4x12 plank, length = bridge width  
 Rail Decking - add 3 to 3.5 ft. to length  
 End Boards - use Decking plank

**Fasteners:**  
 Sillings to Sill - 5/8" dia. pins, length 1.5 X Sillings dia.  
 Curb, Blocks - 3/8"x10" spikes, or 1 1/2" dia. pins, as necessary  
 Mid-Post Rails - 20d nails  
 All Others - 3/8"x5" spikes  
 Fasteners all holes at 1/16" from Sillings dia.

## Wooden Bridge Design

Mastodon Trail @ \$150/foot





## Public Notification / Press Coverage

### MASTODON TRAIL

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# STATE OF ALASKA

**DEPARTMENT OF NATURAL RESOURCES**  
**DIVISION OF PARKS & OUTDOOR RECREATION**

**SEAN PARNELL, GOVERNOR**

NORTHERN AREA  
3700 AIRPORT WAY  
FAIRBANKS, ALASKA 99709-4699  
PHONE: (907) 451-2695  
FAX: (907) 451-2754

February 11<sup>th</sup>, 2010

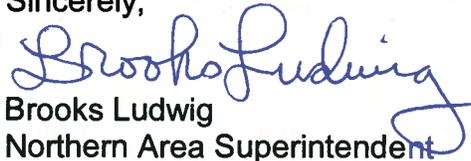
Dear Trail User,

Alaska State Parks is working with the National Park Service: Rivers, Trails, and Conservation Assistance Program (RTCA) to lay out a non-motorized trail to Nugget Creek Public Use Cabin in Chena River State Recreation Area. This new trail will be year round, ten miles long, and mechanically constructed using today's best trail management practices.

Before developing trail management objectives and doing a trail alignment we need input from stakeholders. You are invited to a 2 hour presentation on Sustainable Trail Construction sponsored by the Northern Area Alaska State Parks Citizens Advisory Board and RTCA. This training will be given Tuesday March 23<sup>rd</sup> from 5:30 to 7:30pm at the DNR building located at 3700 Airport Way. The goal of the training is to educate stakeholders in sustainable trail construction and provide design parameters according to user groups. You have been selected as a key stakeholder / representative.

The goal of this meeting is to bring stakeholders together at the beginning of the planning process, to educate them in sustainable trail construction, and initiate a well-thought out process within the context of site opportunities and constraints. If you cannot make the presentation please designate someone to attend for you. If you have questions or need additional information please contact our office at 451-2695. A formal public meeting / open house will be held in late April.

Sincerely,



Brooks Ludwig  
Northern Area Superintendent  
Alaska State Parks

cc.

Stan Justice	Nordic Skiing
Jamie Marschner	Skijor / Polk Association
Beth Patterson	Interior Trail Riders Association
Paul McCarthy	Fairbanks Hiking Club
Becky Alexander	Two Rivers Dog Musers Association
Joe Buth	Fairbanks Cycle Club

Alaska State Parks  
 Citizen Advisory Board  
 Northern Area



Mastodon Trail  
 Planning Workshop  
 Sustainable construction

March 23<sup>rd</sup>, 2010

Signature

Printed Name

Affiliation (group association)  
Phone and/or email

<u>Signature</u>	<u>Printed Name</u>	<u>Affiliation (group association)</u> <u>Phone and/or email</u>
<i>Dianna Leinberger</i>	DIANNA LEINBERGER	dianna.leinberger@alaska.gov 451-3014
<i>Judy Hicks</i>	Judy Hicks	CAB checkpoint@dmtrc.alaska.org
<i>Mindy Eggleston</i>	Mindy Eggleston	CAB mde@alaska.net
<i>Kyle Joly</i>	Kyle Joly	CAB
<i>Jeanne Douse</i>	Jeanne Douse	CAB
<i>John Lysen</i>	John Lysen	CAB
<i>Joe Letante</i>	Joe Letante	CAB
<i>Tom Trauer</i>	Tom Trauer	CAB
<i>Jim Williams</i>	Jim Williams	CAB
<i>Tom Bachert</i>	Tom Bachert	CAB
<i>Malcolm McEwen</i>	Malcolm McEwen	mcewen@mosquitonet.com 322-4499 Alaska Trails
<i>Geoffrey Orth</i>	GEOFFREY ORTH	Alaska Trails FMSB TAC
<i>Joel Both</i>	Joel Both	Fairbanks Cycle Club Goldstream sports
<i>David Charron</i>	DAVID CHARRON	State Parks Tech 907-978-0571



Tom Irwin  
Commissioner

550 W. 7th Ave., Ste 1400  
Anchorage, AK 99501  
907-269-8431



Public Information Center  
650 W. 7th Ave., Ste. 1260  
Anchorage, AK 99501  
[www.dnr.alaska.gov](http://www.dnr.alaska.gov)  
907-269-8400

## Press Release

COMMISSIONER'S OFFICE

**FOR IMMEDIATE RELEASE**  
**04/14/2010**

**Media Contact: Brooks Ludwig 451-2698**  
**Division of Parks & Outdoor Recreation**

### **New Trail Proposed for Chena River State Recreation Area State seeks public input**

(Fairbanks, AK)

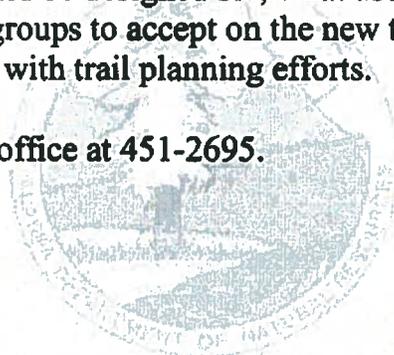
The 2006 update of the Chena River State Recreation Area (CRSRA) Management Plan involved several rounds of public review and many meetings and workshops. The following recommendations came from that planning process and serve as a catalyst for Alaska State Parks proposed new trail.

Recommendations for Unit 5, the non motorized portion of CRSRA, were to improve access to Nugget Creek Cabin, provide summer access to Mist Creek Trail, and work with user groups to expand winter trails and a cabin system for non-motorized users. This trail proposal will implement those management plan recommendations.

The next step in the public process is to identify stakeholders and get their input for a new trail. To that end, the Northern Area Alaska State Parks Citizen Advisory Board is planning an open house on April 26<sup>th</sup> at the Department of Natural Resources building located at 3700 Airport Way. This meeting will be held in the large conference room from 6:00 to 7:30pm. The public is invited to attend to learn more about the trail proposal and to provide feedback.

Alaska State Parks has an online survey for public input. This survey can be completed by going to [alaskastateparks.org](http://alaskastateparks.org) and clicking on: *CRSRA New Trail Survey*. This survey captures public comments and will help managers determine whether to proceed with planning a new trail as well as what specific user group the trail should be designed for, what user groups the trail should be actively managed for, and what user groups to accept on the new trail. State Parks needs this information before moving forward with trail planning efforts.

For more information call the Fairbanks State Parks office at 451-2695.



*Fairbanks Daily News Miner*

Thursday, May 6, 2010

# Parks group proposes new trail in Chena River State Rec Area

By **TIM MOWRY**  
[tmowry@newsminer.com](mailto:tmowry@newsminer.com)

As it is now, anyone who wants to hike to Nugget Creek Cabin in the Chena River State Recreation Area has to ford the Chena River and then negotiate the Mist Creek Trail, a gnarly, marginally marked, 5 1/2-mile overland trail to the cabin.

"It's definitely primitive," said Tom Paragi, who hiked to the cabin in September and paddled down the South Fork of the Chena River to Chena Hot Springs Road. "It's not a cakewalk. It's not something you want to take your grandmother or young kids

to. "You want to be in pretty good

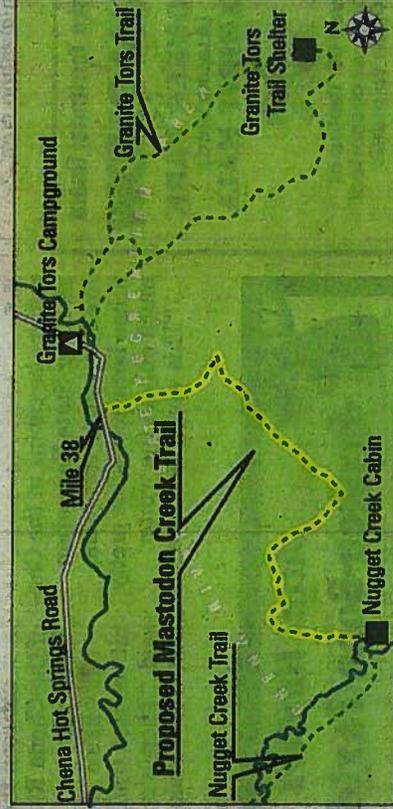
physical shape and know a thing or two about route finding," Paragi said.

Needless to say, Nugget Creek Cabin doesn't see much use in the summer.

But that could change if Alaska State Parks goes ahead with a plan to build a new overland trail to Nugget Creek Cabin in the non-motorized section of the popular 250,000-acre recreation area east of Fairbanks.

The proposed 9-mile Mastodon Creek Trail would start near 38 Mile Chena Hot Springs Road, eliminating the need for a river crossing, and it would be a much tamer and more developed trail than the Mist Creek Trail.

Alaska State Parks is hosting an open house from 5:30-7:30



DeeDee Hammond/News-Miner

p.m. Wednesday at the Department of Natural Resources to see what the public thinks about the new trail.

"If the public says they want the status quo and they don't

want another trail out there, that's fine," said northern region state parks superintendent Brooks Ludwig.

Please see **TRAIL, Page C2**

## OPEN HOUSE

Alaska State Parks will be hosting an open house from 5:30-7:30 p.m. Wednesday at the Department of Natural Resources at 3700 Airport Way to discuss its proposal for a new non-motorized trail in the Chena River State Recreation Area that would lead to the Nugget Creek Cabin. The goal of the meeting is to find out if the public wants the trail and who will use it.

If you can't make the meeting, state parks has an online survey you can fill out by visiting [alaskastateparks.org](http://alaskastateparks.org) and clicking on "Chena River State Recreation Area: New Trail Survey."



Alaska State Parks  
 Citizen Advisory Board  
 Northern Area Alaska State Parks  
 Open House ~ Mastodon Creek Trail Proposal

## Sign-in sheet

May 12<sup>th</sup>, 2010

<u>Signature</u>	<u>Printed Name</u>	<u>Affiliation (group association)</u> <u>Phone and/or email</u>
<i>Don Lokken</i>	Don Lokken	FAHC (479-5419)
<i>Carol Lokken</i>	Carol Lokken	FAHC
<i>Tom Perry</i>		CAB
<i>Alan Batten</i>	Alan Batten	
<i>Dr. M. Harrington</i>	Drew Harrington	
<i>David Pater</i>	DAVID PATER	
<i>Peter Fix</i>	PETER FIX	
<i>John Lyser</i>	John Lyser	CAB
<i>DAVE CHARRON</i>	Dave Charron	State Parks Employee
<i>Kyle Joly</i>	Kyle Joly	CAB
<i>Jeremy Douse</i>	Jeremy Douse	CAB
<i>Steve Taylor</i>	STEVE TAYLOR	ORTAB
<i>Stan Justice</i>	Stan Justice	479-5017 stanjustice@pci.net
<i>Roger Burns</i>	Roger Burns	



Alaska State Parks  
Citizen Advisory Board  
Northern Area Alaska State Parks  
Open House ~ Mastodon Creek Trail Proposal

Sign-in sheet

May 12<sup>th</sup>, 2010

<u>Signature</u>	<u>Printed Name</u>	<u>Affiliation (group association)</u> <u>Phone and/or email</u>
	Barry Whitehill	488-0234
	GEOFFREY ORTH	ALASKA TRAILS 479-0014
	Ian Ahn	None
	Sean McGuire	479-7334
	Brooks Ludwig	State Parks

Fairbanks Daily News Miner

Thursday, June 24, 2010

# Mastodon Creek Trail is a go in Chena River State Recreation Area

## State Parks has already laid out trail

By TIM MOWRY  
tmowry@newsminer.com

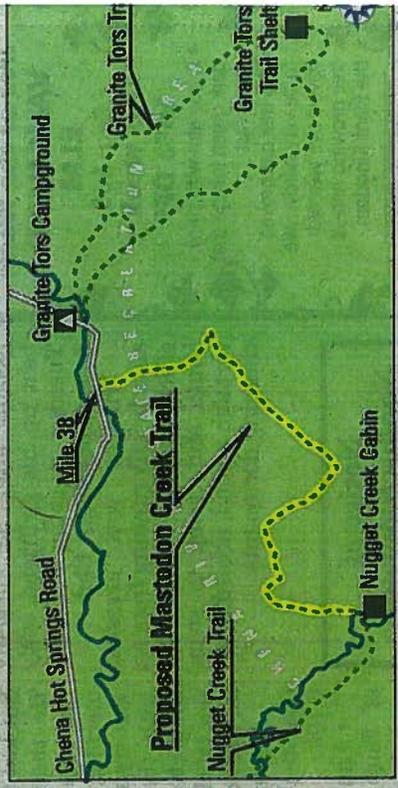
After receiving overwhelming support, Alaska State Parks is going ahead with a plan to build a new non-motorized trail in the Chena River State Recreation Area. A crew last week laid out and flagged the Mastodon Creek Trail, which will lead 14 miles from Chena Hot Springs Road to Nugget Creek Cabin, a small public-use cabin on the South Fork of the Chena River.

The trail length originally was estimated at 9 miles but came out to be 5 miles longer, said state parks northern region superintendent Brooks Ludwig. "It was longer than the original concept due to following the natural topography and staying on good stable slopes," Ludwig wrote in an e-mail. The trail will be built using sustainable techniques to promote

drainage and reduce maintenance, he said. State parks proposed the trail last month, and the idea has received broad support, both at a public meeting May 13 in Fairbanks and through an online survey on the Division of Parks and Outdoor Recreation website. More than 90 percent of the 178 people who completed the online survey supported building a sustainable trail to Nugget Creek Cabin, Ludwig said. The Mastodon Creek Trail will start near 38 Mile Chena Hot Springs Road and go up the Mastodon Creek drainage, winding its way to Nugget Creek Cabin, one of five backcountry public-use cabins in the 250,000-acre recreation area east of Fairbanks. The trail is in a non-motorized portion of the rec area. The five-person crew, which consisted of two state parks employees and three from the National Park Service's Rivers and Trails Conservation Assistance program, hiked 49 miles throughout five days to lay out the trail. "They made it all the way to the

cabin and back; they flagged the whole thing," Ludwig said. "We got the trail up on good ground and on south-facing slopes so it should be pretty bombproof once we get it in." State parks is hoping to get a state recreational trails grant to begin construction of the trail next summer, he said. Construction of the trail will require a 60-foot bridge to be built across Mastodon Creek, Ludwig said. The 4-foot-wide trail also will be open to horseback riding and mountain biking, he said. More than 60 percent of people who responded to the online survey supported opening the trail to mountain bikes. Almost half the respondents (47.2 percent) to the online survey indicated they will use the trail primarily for hiking. Mountain biking and cross-country skiing were next on the list at 15.9 percent, followed by horseback riding (9.7 percent), skijoring (5.7 percent), mushing (4.5 percent), and snowshoeing (1.1 percent).

In the winter, cross-country skiing will be considered the primary use, Ludwig said. More than 95 percent of respondents support a trail network with shelters in the non-motorized portion of the park. State parks has identified a future cabin site on the Mastodon Creek Trail about 4 miles from Chena Hot Springs Road, Ludwig said. In addition to providing an overland route to the cabin, the trail could be tied into the 15-mile Granite Tors Trail, Ludwig said, which would create a 40-mile trail



DeeDee Hammond/News-Mi

network in the non-motorized portion of the rec area. Before any connector trails are built, however, state parks is planning to evaluate what needs to be done to make the Granite Tors and Angal Rocks trails more sustainable, Ludwig said. "We're looking at doing an evaluation of the Granite Tors and Angal Rocks trails before we do any connector trails because they're the most-used non-motorized trails," he said. Contact outdoors editor Tim Mowry 459-7587.

In the winter, cross-country skiing will be considered the primary use, Ludwig said. More than 95 percent of respondents support a trail network with shelters in the non-motorized portion of the park. State parks has identified a future cabin site on the Mastodon Creek Trail about 4 miles from Chena Hot Springs Road, Ludwig said. In addition to providing an overland route to the cabin, the trail could be tied into the 15-mile Granite Tors Trail, Ludwig said, which would create a 40-mile trail

## New Trail Proposal In Non-Motorized portion of Chena River State Recreation Area Edit

Default Report + Add Report

### Response Summary

Total Started Survey: 181  
Total Completed Survey: 181 (100%)

PAGE: DEFAULT SECTION

#### 1. Which trail option do you support?

Create Chart Download

	Response Percent	Response Count
Existing access is suitable (status quo / no change)	8.1%	14
Build sustainable trail to Nugget Creek Cabin	91.9%	159
	answered question	173
	skipped question	8

#### 2. Under 11AAC 20.490 bicycles are only allowed in Chena River State Recreation Area in campgrounds and the following areas: 1.) Chena Dome Trail, 2.) picnic areas, and 3.) trails described as open to off-road vehicles. Do you support changing regulations to open the new trail to bicycles?

Create Chart Download

	Response Percent	Response Count
Yes, I support opening the trail to bicycles	60.7%	108
No, I do not support changing the use in the area by opening the trail to bicycles.	39.3%	70
	answered question	178
	skipped question	3

#### 3. What is the principle type of access you would use on this trail? (CHOOSE ONE)

Create Chart Download

	Response Percent	Response Count
Dog Team	4.4%	8
Skijor	5.6%	10
Cross Country Ski	16.1%	29
Snowshoe	1.1%	2
Horse	9.4%	17
Bicycle	15.6%	28

Hike		47.8%	86
		answered question	180
		skipped question	1

4. What other type(s) of access would you use on this trail?

Create Chart Download

		Response Percent	Response Count
Dog team		9.8%	17
Skijor		16.8%	29
Cross Country Ski		50.3%	87
Snowshoe		34.1%	59
Horse		9.2%	16
Bicycle		29.5%	51
Hike		56.6%	98
		answered question	173
		skipped question	8

5. Do you agree with Alaska State Parks Vision Statement?

Create Chart Download

		Response Percent	Response Count
Agree		94.8%	164
Disagree		5.8%	10
		answered question	173
		skipped question	8

6. If you disagree with Alaska State Parks Vision Statement. Please tell us what you would like to see.

Download

	Response Count
Show replies	12
answered question	12
skipped question	169

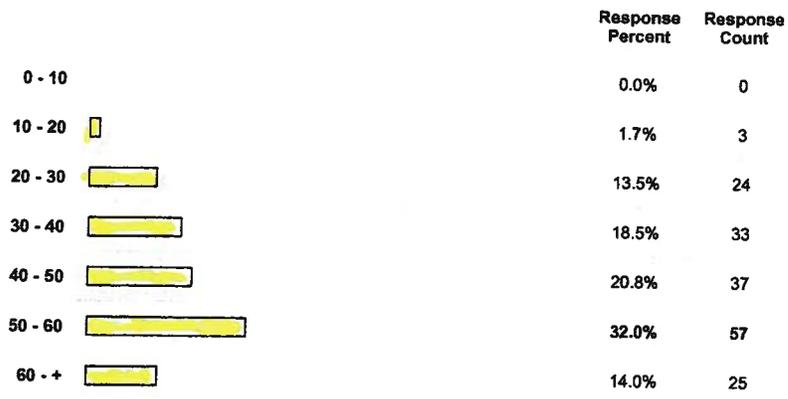
7. Do you support a trail network with shelters in the non-motorized Tors unit?

Create Chart Download

		Response Percent	Response Count
Yes I support a trail network with shelters.		94.8%	165
No I do not support a trail network with shelters.		5.2%	9
		answered question	174
		skipped question	7

8. Please check the following age bracket that applies.

Create Chart Download



answered question 178  
skipped question 3

9. What is your gender?

Create Chart Download



answered question 178  
skipped question 3

10. Do you live in the Fairbanks North Star Borough?

Create Chart Download



answered question 179  
skipped question 2

11. Are there any other comments / suggestions you'd like to make?

Download

Show replies 70  
answered question 70  
skipped question 111



**In This Issue:**  
Alaska State Parks

## Conservation + Recreation: December 2010

In 1970, the Alaska Department of Natural Resources established the [Division of Parks](#), the beginning of a network of protected lands that has grown to 3.2 million acres in 131 units. As this "System of

Dreams" has grown, many individuals have worked to improve and expand Alaska's outdoor recreation facilities. [Chena River State Recreation Area](#) is currently undergoing such an improvement.



Photo: Nugget Creek Cabin (NPS Photo)

Located east of Fairbanks, the Chena River State Recreation Area boasts 397 square miles of forests, rivers, and alpine tundra. More than 150,000

people camp, hike, kayak, canoe, and fish there every year. The park has trails for motorized and non-motorized vehicles, so a winter visitor is as likely to see a dog sled as a snow machine.

One under-utilized asset in the park is the [Nugget Creek Cabin](#), a cozy log cabin ideal for a getaway. To access the cabin, visitors must ford the Chena River and then negotiate 5½ miles of rugged, poorly marked trail. Park managers currently recommend that only hardy, experienced adventurers attempt the trip. With help from the National Park Service [Rivers, Trails, and Conservation Assistance Program](#), that will change.



AK State Parks Field Crew (NPS Photo)

Planning is now underway for the new Mastodon Creek Trail to improve access to the cabin and other destinations. A preliminary route has been flagged for more than ten miles of trail that will tie into a 40-mile network of trails in the non-motorized portion of the park. The Mastodon Creek Trail, unlike its predecessor, will be constructed with an eye toward sustainability and

user-friendliness. It will avoid dangerous river crossings and provide easier navigation for hikers, horseback riders, and mountain bikers. The new trail will be constructed at a grade suitable for families and novice hikers.

Planners involved in the Mastodon Creek Trail project hope to see existing trails in the park improved to the same standard, ensuring sustainable construction and improving accessibility.



# Fairbanks North Star Borough

809 Pioneer Road

P.O. Box 71267

Fairbanks, Alaska 99707-1267

907/459-1000

[www.co.fairbanks.ak.us](http://www.co.fairbanks.ak.us)

November 9, 2010

State Trails Coordinator  
Recreational Trails Grant Program  
Division of Parks and Outdoor Recreation  
550 W 7<sup>th</sup> Ave., Suite 1380  
Anchorage, AK. 99501-3561

**Re: Mastodon Trail Grant Application - Letter of Support**

To Whom It May Concern:

The Fairbanks North Star Borough (FNSB) Department of Parks and Recreation supports the Alaska State Parks, Northern Area, grant application for the construction of the new Mastodon Trail within the Chena River State Recreation Area.

The new Mastodon Trail will provide a safe alternative year-around access to a public use cabin area at Nugget Creek, giving recreational trail enthusiasts the opportunity to avoid a hazardous ice/open-water crossing of the Chena River system. The new Mastodon Trail will provide recreational trail enthusiasts the opportunity to enjoy activities such as mountain biking, skiing, horseback riding, hiking, and dog-mushing, to name a few.

The Chena River State Recreation Areas new Mastodon Trail will eventually link to an ever expanding network of popular recreational trails, and provide safety, health, and social value to visitors of the Chena River State Recreation Area. The FNSB Department of Parks and Recreation urges your support of this grant application.

Sincerely,

  
Thomas E. Hancock, Jr., Trails Coordinator  
Department of Parks and Recreation  
Fairbanks North Star Borough

Cc: Brooks Ludwig, Park Superintendent, Northern Area: Alaska State Parks

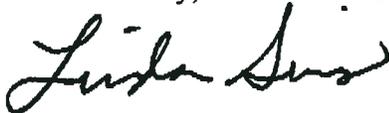
INTERIOR ALASKA TRAIL  
RIDERS ASSOCIATION  
ESTABLISHED 1967

Mr. Brooks Ludwig  
Park Superintendent  
Northern Area Alaska State Parks  
3700 Airport Way  
Fairbanks, Alaska. 99709

The Interior Alaska Trail Riders Association, an equestrian group, would like to express our support for the proposed Mastodon Trail. A 10.5 mile non-motorized trail to the Nugget Creek Cabin would be a great asset to our use of the Chena Hot Springs Recreational Area. Built as you described with a 4 foot tread and 8 to 10% grade will allow use by both novice riders and riders with a pack horse carrying supplies for an overnight stay at the cabin.

We thank you for your efforts in proposing this trail and look forward to riding it!

Sincerely,



Linda Sims

President



PO Box 84237  
Fairbanks AK 99708  
[www.runningclubnorth.org](http://www.runningclubnorth.org)

January 27, 2011

---

Alaska Division of Parks and Outdoor Recreation  
550 W 7<sup>th</sup> Ave, Suite 1380  
Anchorage AK 99501-3561

To Whom It May Concern:

Running Club North is an organization that enthusiastically supports new and existing trails in interior Alaska. Our group would favor the development of a new trail identified as the Mastodon Creek Trail in the Chena River Recreation Area.

We currently run on other trails in the area, such as Granite Tors and Angel Rocks, that are very challenging and enjoyable. A new trail would open up a new area for our club members and other runners from around the country and the world.

There is no doubt that this new trail would enhance the recreation area tremendously. And we support project and hope for its development.

Sincerely,

*Bob Vitale*

Bob Vitale  
President  
Running Club North



## INTERIOR TRAILS PRESERVATION COALITION

### ITPC

Tuesday, November 9, 2010

To Whom It May Concern:

The Interior Trails Preservation Coalition supports the efforts of the Northern Area office of Alaska State Parks and Recreation to obtain grants for the Mastodon and Stiles Creek Extension trails in the Chena River State Recreation Area. The ITPC is happy to see these projects being addressed.

#### Mastodon Trail

A lot of interior Alaska trail users are already anticipating construction of Mastodon Trail. Many years have passed since a new non-motorized trail has been built in the recreation area. The location selected for this trail is excellent. It will give trail users year-round access to Nugget Creek Public Use Cabin with another cabin being planned elsewhere along the non-motorized trail system. The new trail will also eventually provide access to the popular Granite Tors Trail, giving non-motorized trail users more trip options. And while non-motorized trails in the recreation area are primarily for foot traffic, this new trail will be built to accommodate a wide variety of non-motorized users, including mushers, mountain bikers, and horseback riders.

#### Stiles Creek Extension Trail

The planned improvements to the Stiles Creek Extension Trail are an excellent idea. The current trail is wet down low and steep on its climb up the hill. The Stiles Creek Trail is already tremendously popular with many types of trail users, and improvements to that trail have been extremely well received. Improving the extension trail will make it usable for a broader range of trail users as well as give trail users of all types more options for trips. The Stiles Creek Extension Trail has also been identified as a site for a possible public use cabin. Such a cabin, along with the trail improvements, would allow another overnight option for trail users.

The Chena River State Recreation Area is already a tremendous asset to the Interior's residents and visitors. It enhances quality of life by adding to the outdoor recreational opportunities and increases tourism by offering an attractive destination. These trail improvements will make the area even more attractive.

Sincerely,

Eric Troyer  
Vice President

ITPC

P.O. Box 74263, Fairbanks, AK 99707

Phone: (907) 458-7968

The logo for Alaska Trails, featuring the words "ALASKA" and "TRAILS" stacked vertically in a stylized, hand-drawn font. The letters are filled with a pattern of small dots and lines, giving it a textured, outdoor feel. The logo is positioned on the right side of a decorative horizontal band that spans the width of the page. This band consists of several parallel lines in shades of blue and green, with small black dots scattered throughout, resembling a trail or a natural landscape.

9 November 2010

Bill Luck, State Trails Coordinator  
Alaska Division of Parks and Outdoor Recreation  
550 W 7th Ave, Suite 1380  
Anchorage AK 99501-3561

Dear Mr. Luck,

Alaska Trails, a statewide trails education and advocacy nonprofit, supports the two grant applications by the Northern Area of Alaska State Parks: Mastodon Trail and the Stiles Creek Extension projects.

State Parks has invested a considerable amount of time and effort in the conceptual development of the Mastodon Trail. They have held public scoping sessions, formed partnerships with the NPS Rivers, Trails, Conservation Assistance program, and determined a preliminary trail corridor. The construction of 10.5 miles of non-motorized/multi-use trail in this area of the Chena River State Recreation Area (CRSRA) will have the added benefit of linking to adjacent trails and makes good use of the existing recreational potential.

The Stiles-Colorado Creek Trail is an extremely popular recreational trail system in the CRSRA and the hardening and re-alignment of the Stiles Creek Extension is a well deserved project. This maintenance project will transform a very marginal 4.5 trail into a sustainable curvilinear route that will attract both motorized and non-motorized recreational users. It also links to adjacent trails and makes good use of the existing recreational potential.

Both these projects propose using sustainable trail design principles that will leverage the funds spent. Alaska Trails strongly supports the Northern Area of Alaska State Parks grant request for the Mastodon Trail and Stiles Creek Extension projects.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Orth". The signature is fluid and cursive, written in a professional but personal style.

Geoffrey Orth, Board President

Enhancing the Alaska trail experience by supporting sustainable, world-renowned trails through advocacy and education

P.O. Box 100627 Anchorage, AK 99510 Ph: 907-334-8049 Email: [office@alaska-trails.org](mailto:office@alaska-trails.org)  
[www.alaska-trails.org](http://www.alaska-trails.org)



## Northern Area Alaska State Parks Citizen Advisory Board

3700 Airport Way Fairbanks, Alaska 99709-4609 (907) 451-2695

---

October 19, 2010

Recreational Trails Grant Program  
Division of Parks & Outdoor Recreation  
550 W 7<sup>th</sup> Ave., Suite 1380  
Anchorage, AK. 99501-3561

To Whom It May Concern:

The Chena River State Recreation Area has seen a substantial increase in visitor days in recent years. Increased energy costs have led to many people participating in their recreation endeavors close to home. The Chena River State Recreation Area serves as an area where Alaskans can participate in a wide variety of recreational opportunities and still be relatively close to home. Also, this recreation area is a destination where visitors to the state can experience the boreal forest and the wildlife that exist in this unique environment.

Many of the existing trails within the recreation area were never designed to sustainably support multiple types of recreational uses. Some of the trails were originally constructed by miners who were trying to gain access to their claims. These trails are not sustainable and some are degrading to the point where they pose significant safety issues. Also, because of the increased number of visitor days, new areas need to be developed to accommodate more users. This will spread out the use so individual areas do not see as much impact.

The Northern Area of the Alaska State Parks has worked to accommodate the increased use of the recreation area by planning for extensions of existing trails and development of new ones. They have prioritized the areas that are in need of attention and identified the most important for the recreation area. The Stiles Creek Extension Re-Route and the Mastodon Trail are ranked among the highest priority projects that meet the needs of the recreation area and the users.

The Citizen Advisory Board (CAB) of the Northern Area Alaska State Parks supports these projects. The CAB also identified them as two of the most important projects to continue to serve the needs of the recreational user. These projects will open up new areas for non-motorized users as well as improve trail conditions and safety for multiple-use trail users. The CAB hopes that the Recreational Trails Grant Program will look favorably on these two worthy endeavors when deciding on what projects to grant funding to.

Sincerely,

Jim Williams  
Chairman Northern Area Citizens Advisory Board



711 Sheep Creek Road  
Fairbanks AK 99709  
907-455-7148

I would like to voice my support of the Mastodon Trail. This new trail will provide great, safe summer and winter access to the existing public use cabin and aligns nicely with future trail development in the area. These trails provide great opportunities for outdoor recreation that benefits the public. Getting people outside is great for their mental and physical health in a society that is increasingly sedentary.

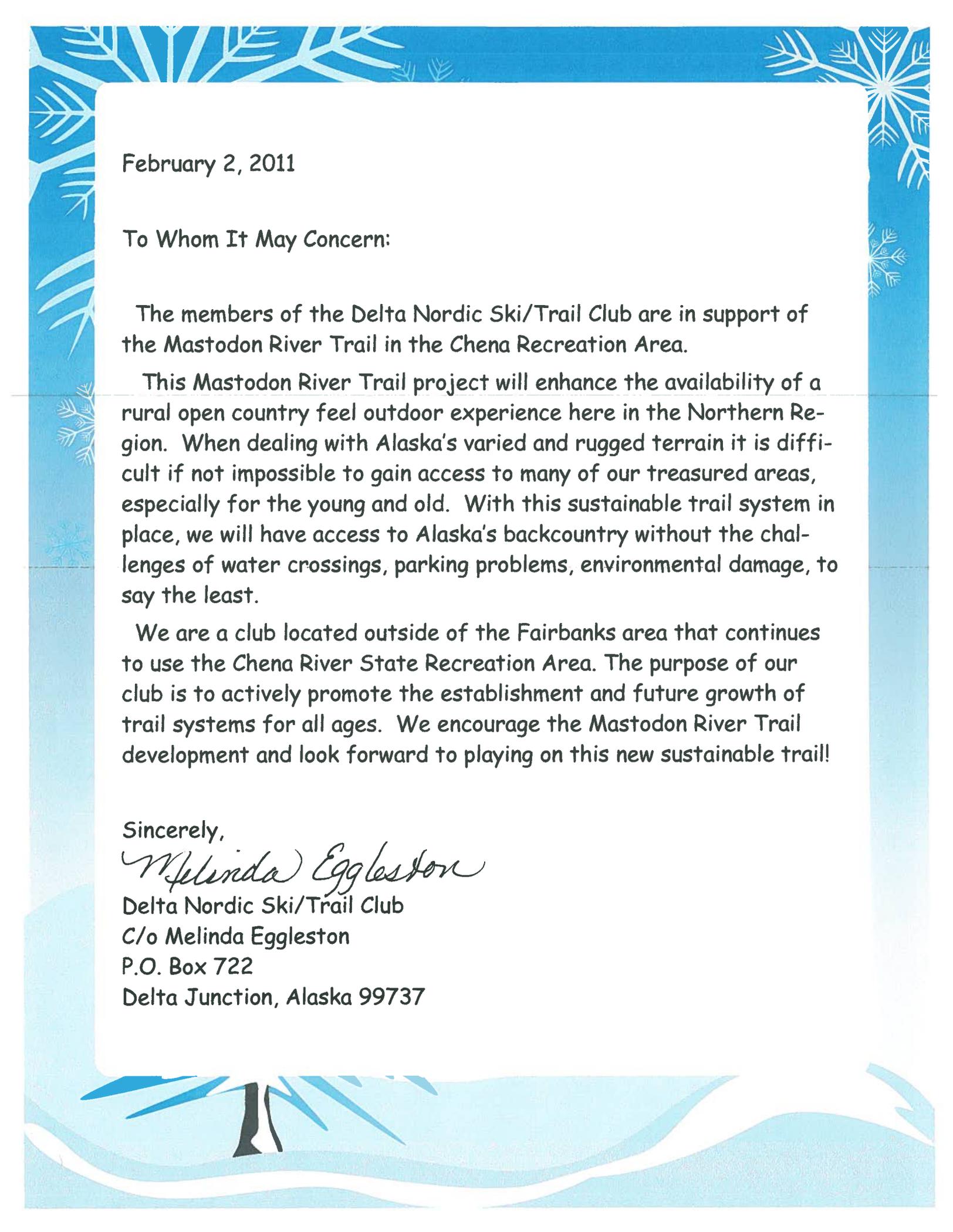
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Funding is critical to be able to properly design and construct trails to last. Many of the older poorly designed trails erode away. We need to move forward with properly designed trails like the Mastodon trail that are built to last.

My business depends on availability of trails like this to stimulate more people to ride and ski more often. This in turn allows me to employ more people and continue to support trail development.

Joel Buth

Owner of Goldstream Sports



February 2, 2011

To Whom It May Concern:

The members of the Delta Nordic Ski/Trail Club are in support of the Mastodon River Trail in the Chena Recreation Area.

This Mastodon River Trail project will enhance the availability of a rural open country feel outdoor experience here in the Northern Region. When dealing with Alaska's varied and rugged terrain it is difficult if not impossible to gain access to many of our treasured areas, especially for the young and old. With this sustainable trail system in place, we will have access to Alaska's backcountry without the challenges of water crossings, parking problems, environmental damage, to say the least.

We are a club located outside of the Fairbanks area that continues to use the Chena River State Recreation Area. The purpose of our club is to actively promote the establishment and future growth of trail systems for all ages. We encourage the Mastodon River Trail development and look forward to playing on this new sustainable trail!

Sincerely,

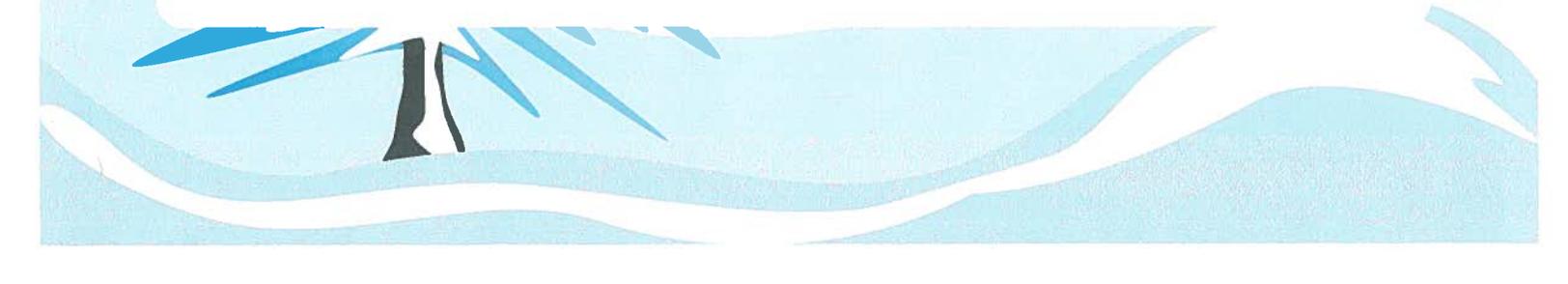
*Melinda Eggleston*

Delta Nordic Ski/Trail Club

C/o Melinda Eggleston

P.O. Box 722

Delta Junction, Alaska 99737





# FAIRBANKS PADDLERS

BOX 83329

FAIRBANKS, AK 99708



February 4, 2011

Recreational Trails Grant Program  
Alaska Division of Parks and Outdoor Recreation  
550 West 7<sup>th</sup> Ave., Suite 1380  
Anchorage, AK 99501-3561

To Whom it May Concern:

Fairbanks Paddlers is a Fairbanks, Alaska-based organization dedicated to promoting safe enjoyment of Alaska's waters by non-motorized watercraft, conserving the quality of Alaskan waters and adjoining lands, and protecting and enhancing access for paddling.

Fairbanks Paddlers supports the proposed construction of the sustainably-aligned Mastodon Creek Trail within the non-motorized portion of the Chena River State Recreation Area. This trail will substantially enhance the trail system in this popular recreation area by linking in to existing trails and providing year-round access to the Nugget Creek public use cabin. The trail will also provide access to the South Fork of the Chena River at the Nugget Creek cabin, several miles upstream of the confluence with the main stem of the Chena River. This will make it possible for floaters to access this previously little-used but navigable branch of the Chena River with small, packable watercraft.

We applaud the efforts of the many volunteers and State Parks' staff who are working to enhance recreational opportunities and trail sustainability in the Chena River State Recreation Area. We urge your support for Alaska State Parks' grant application for sustainable development of the Mastodon Creek Trail. We also look forward to contributing the volunteer efforts of some of our members in future trail improvement and maintenance projects.

Sincerely,

Mary Pagel  
President, Fairbanks Paddlers

## **Ludwig, Brooks A (DNR)**

---

**From:** Mike Kramer [mkramer@bnblaw.com]  
**Sent:** Monday, October 25, 2010 9:46 AM  
**To:** Ludwig, Brooks A (DNR)  
**Subject:** Letter of Support for Chena Rec Area trail projects

Brooks, As an avid trail user, I support expansion of the trail system in the Chena Rec Area. I understand the Mastodon Creek Trail and the Stiles Creek extension are two projects that are currently in need of grant money to move forward.

These projects would improve the trail network for both motorized and non motorized users. Making more loops and interconnected trails greatly facilitate multi day trip options and will help ensure the public use cabins are utilized more often.

I encourage State Parks to continue its efforts to improve this trail network.

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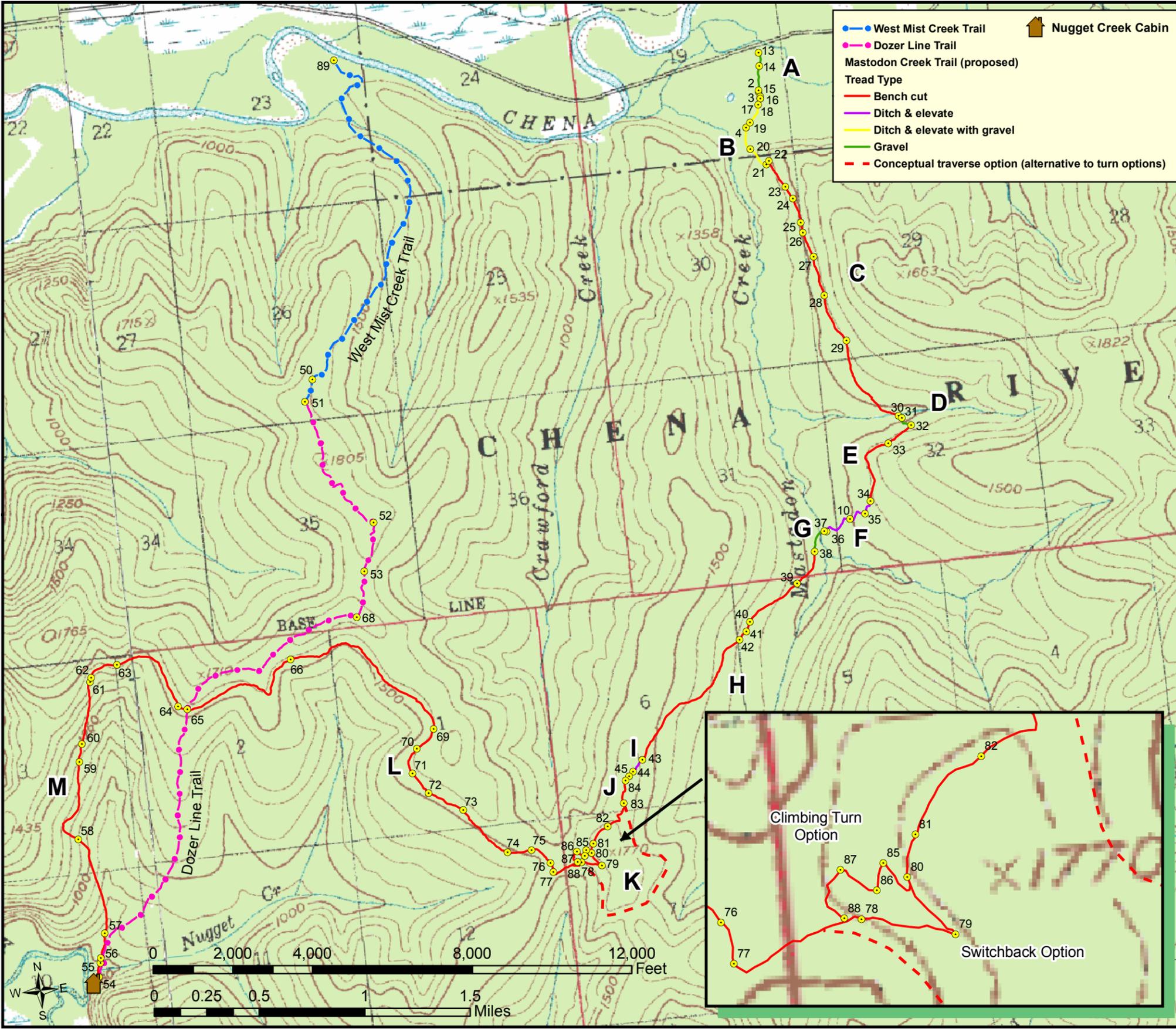
***Michael C. Kramer***

Borgeson & Burns  
Key Bank Center  
100 Cushman St. Suite 300  
Fairbanks, Alaska, 99701  
(907) 452-1666  
[mkramer@bnblaw.com](mailto:mkramer@bnblaw.com)

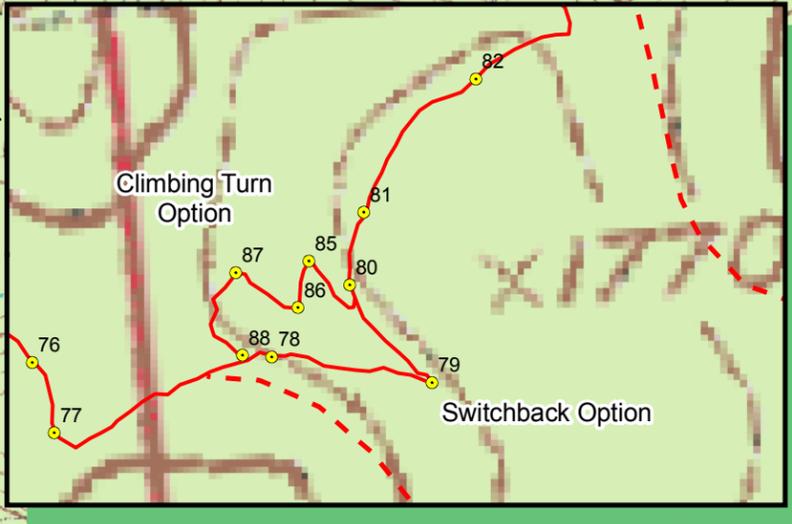
# Mastodon Creek Trail Chena State Recreation Area

## Waypoints Overview & Field Notes

Proposed layout provided by:  
National Park Service  
Rivers, Trails, & Conservation Assistance



WP	SITE CONDITIONS/PRESCRIPTION	GRADE	SS
2	Creek crossing		
3	North edge of burn, on small knob; mineral soil, mottled at surface		
4	Hot burn, flat, moderately drained		
10	Burn ridge dropping into valley		
13	Road edge; develop <b>trailhead</b> ; meander trail between aspen trees; remove organic mat; add 1- to 2-inch gravel cap	<5%	
14	Slight swale; may require additional gravel to trail harden	<5%	
15	Develop ford with <b>approximately 24-foot bridge</b>		
16	Wet swale; cross to burn edge; trail harden to cross swale; 25 feet; extra gravel may be required to trail harden	<5%	
17	On burn-mineral soil; end gravel and start full bench; add 2- to 4-inch gravel cap if needed	7%	10-15%
18	On top of low rib; light burned; flat-topped mini ridge with tussocks; ditch and elevate with 2- to 4-inches of gravel		
19	On to hot burn; pack veg mat; gravel; start ditch and elevate with 2- to 4-inch gravel cap across hot burn		
20	Start up rib; start benching; may need ditch and elevate with gravel in places	8%	10-15%
21	Bottom of "S" turns; drain point	8%	15%
22	Top of "S" turns; start bench cut across slope to south	8%	30-35%
23	Midpoint grade reversal	8%	35-40%
24	Top of 1st ascent; stay +8-9% to avoid wet drainage	8+%	35-40%
25	Swale; drain dip (-5% in & out of drain)	-5%	
26	Climb 8%	8%	35-40%
27	Start "W" shaped layout with +/- 5% grade	+/-5%	35-40%
28	Start "W" shaped layout with +/- 3% grade	+/-3%	
29	Start descending	-8%	15-20%
30	Entering heavy mossy hummocks at creek crossing; start trail hardening, develop gravel pit before this WP	-3%	10%
31	Creek; install a ~22-foot bridge and a ~25-foot bridge with center span	3%	10%
32	Frozen, wet north facing; trail harden with gravel from gravel pit development or bench cut spoil from further along trail		
32	North face but gravel at surface; climbing turn on 20% side slope	10-12%	20%
	Transition into 8%; tough construction near turn	8%	
33	Start descending towards creek	-8%	40-50%
34	Wet crossing; may need trail hardening		
35	Top of "S" turns; ditch and elevate option begins	8%	<15%
36	Install ~56-foot bridge with two piers		
37	East edge of flood plain		
37	West bank of Mastodon Creek; drive for hillside	0-3%	0-3%
	Trail harden; gravel from hillside bench cut	8%	12-25%
38	Excellent soils; tundra, birch with spruce; start full bench cut; potential camp/cabin site upslope of WP 38 on drier ground	8-10%	25-40%
39	Mossy	9%	30-40%
40	On drier ground; grade break for hikers +/- 3%	+/-3%	
41	Seep, wet crossing; develop spring as water source		
	Trail harden 25 feet - geoblock		
42	Long sections of thick moss, old burn site; start climb	10%	20-30%
43	1st ridge influence; work to cross over; provide ditches for drainage or ditch and elevate across ridgetop as necessary	5-7%	10%
44	Top of ridge; cross over	3-5%	10%
45	Cross game trail; tie in with WP 84		
50	Small campsite on ridge where RTCA stayed during reconnaissance		
51	Dozer Line junction; 3.1 mile		
52	East Mist Creek junction		
53	Good soil, 4.2 mile; possible construction campsite with big clearing for helicopter		
54	<b>Nugget Creek Cabin</b> ; "W" shaped layout with +/- 10% grade along Chena River edge to clear wetland & cultural site	+/-10%	
55	Start 15% climb	15%	30-40%
56	End 15% climb	5-7%	12-15%
57	Start side hill ascent	10%	15-20%
58	Entering side drainage	10%	30-40%
59	Rest stretch with reduced grades	+/-5%	30-40%
60	Start 10% ascent	10%	30-40%
61	Steepened side slope; birch	10%	40-50%
62	Rock outcrop; develop rest area and view point	10%	40-50%
63	Top of valley; heavy clearing with dog hair spruce	+/-5%	50-60%
64	Small opening; develop viewpoint	+/-5%	15%
65	Cross old dozer trail		
66	Descend at 7%	-7%	30-50%
68	Open birch; stretches of dog hair; junction with cross ridge trail	+/-5%	30-40%
69	Steep side slope; open spruce, birch, mossy; great vista	+/-5%	50-60%
70	Off steep side slope	-5%	40-50%
	Grades decrease with dog hair spruce	-5%	15-20%
71	End dog hair spruce	-7%	15-20%
72	Contour	3-5%	20-30%
73	Begin descending	-7%	20-30%
74	Begin ascending	5%	20-30%
75	Across saddle, +/-5%	+/-5%	15-20%
76	To access saddle, +7%	7%	15-20%
77	To cross saddle, +/-5%; cross ridge foot trail	+/-5%	12-15%
78	Start +8% grade	8%	20-32%
79	Switchback on 50% side slope; upper leg; drain south to dry drainage; 3 flags; build big	10%	40-50%
80	On 26% side slope; possible turn location; start climbing turn	10%	26%
81	Traverse knobs	+/-5%	20-30%
82	Descend off knobs	-10%	30-40%
83	Ditch and elevate; down ridge - fall line alignment due to lack of other options	-5%	10%
84	Tie-in with previous flagline at WP 45	-10%	10%
80	Start climbing turn	10%	30%
85	Cut-thru climbing turn on 26% side slope; descend at 10%	10%	26%
86	Cut-thru climbing turn on 22% side slope	10%	22%
87	Flat turn	10%	
88	Start climbing turn after cut-thru on 22% side slope	10%	22%
89	Start of Mist Creek Trail		



# The Mastodon Trail: Access to the Nugget Creek Cabin

**Chena River State Recreation Area  
Northern Area State Park  
Alaska Division of Parks and Outdoor Recreation**

---

## **Trail Corridor Evaluation**



Lisa Holzapfel – Alaska NPS RTCA Program Program Leader/Outdoor Recreation Planner  
Kevin Meyer – Alaska NPS Regional Trail Specialist  
Kristen Pearson – Alaska NPS GIS Specialist/Cartographer  
Heather Rice – Alaska NPS RTCA Program Outdoor Recreation Planner

National Park Service  
Rivers, Trails and Conservation Assistance Program (RTCA)

September 2010

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## **INTRODUCTION**

In October 2009, the Northern Area Alaska State Park was awarded a grant of technical assistance from the NPS Alaska Region Rivers, Trails, and Conservation Assistance program (RTCA) to help identify a new sustainable nonmotorized trail to the Nugget Creek cabin in the Chena River State Recreation Area. The cabin is currently accessed by the Mist Creek Trail and an old dozer trail, both of which are oversteep and unsustainable. The new trail is referred to as the Mastodon Trail.

RTCA technical assistance was provided from October 2009 through September 2010. Specifically, assistance focused on:

- Identifying major negative and positive control points from the Chena Hot Springs Road to Nugget Creek cabin;
- Identifying an optimal trail corridor; and
- Flagging the trail corridor in the field.

RTCA also used the field work associated with the project as a training opportunity for Chena River State Recreation Area staff to teach them skills necessary to design and layout the initial sustainable trail corridor on their own.

This report details the work completed by RTCA in partnership with the Northern Area Alaska State Park, and provides recommendations and next steps needed to fully design and construct the Mastodon Trail.

## **MASTODON TRAIL VISION**

The Northern Area Alaska State Park envisions maintaining the natural character of the Tors Unit while providing a defined land route to the Nugget Creek cabin that improves access to the area and eventually links with Granite Tors Trail to the east forming a 40 mile network of non-motorized trails to three public cabins / trail shelters. This defined land route is referred to as the Mastodon Trail.

The Mastodon Trail will be a sustainably designed, maintained, and constructed all-season trail that is well-marked and provides easy access to the Nugget Creek cabin.

## **AN OVERVIEW OF SUSTAINABLE TRAILS**

The current working definition of a sustainable trail comes from the national interagency "Trail Management: Plans, Projects and People" training course (Beers 2009). The course defines a sustainable trail as: "A trail that has been designed and constructed to such a standard that it does not adversely impact natural and cultural resources, can withstand the impacts of the intended user and the natural elements while receiving only routine cyclic maintenance and meets the needs of the intended user to a degree that they do not deviate from the established trail alignment."

It is the recommendation of the National Park Service RTCA Program and the policy of Alaska State Parks that planning, designing, and constructing of all new trails be sustainable. To achieve this, three key concepts must be understood and applied: trail fundamentals, the trail triangle, and sustainable trail guidelines.

## **Trail Fundamentals**

The term, "trail fundamentals," refers to five fundamental concepts that are the cornerstones of effective trail planning and management. The trail fundamentals are:

- *Trail type* – Trail type is the predominant trail surface or trail foundation, and the general mode of travel the trail accommodates. Trail types are terra (soil), snow, and water.
- *Trail class* – Trail class is the prescribed scale of trail development, representing the intended design and management standards of the trail. Trail class ranges from Class 1 (primitive) to Class 5 (highly developed).
- *Managed use* – Managed uses are those modes of travel that are actively managed and appropriate, considering the design and management of the trail. This should be a list of all types of use that will occur along the trail that will be accommodated by trail management.
- *Designed use* – Designed use is the intended use that controls the desired geometric design of the trail, and determines the subsequent maintenance parameters for the trail. There is only one designed use per trail or trail segments. A trail may be actively managed for more than one use and various uses may be permitted but it has only one design driver that determines the technical specifications.
- *Design parameters* – Design parameters are the technical specifications for trail construction and maintenance based on trail class and designed use. These include width, grade, surface character, and other such design elements. (USFS 2008)

Trail fundamentals are documented as components of overall "trail management objectives" (TMOs) for the trail. In addition to trail fundamentals, trail management objectives also include information such as a trail's location, length, other uses that are accepted, discouraged or eliminated, and maintenance requirements. TMO's are the desired future conditions that tier from and reflect planning documents, policies, regulations, and other management direction. TMOs are recorded on a standardized form, thereby synthesizing and documenting in one convenient place the intent for the trail, and providing basic reference information for subsequent trail construction, maintenance, management, and monitoring.

Additional information and training materials on trail fundamentals and trail management objectives are available on the Forest Service's site at <http://www.fs.fed.us/r3/measures/>.

## **The Trail Triangle**

Identifying the trail fundamentals and TMOs is critical, but it is also important to understand other factors that affect a trail. Trail use characteristics, site conditions, and climate and weather are the principle factors that influence trail design, layout, construction methods, and maintenance. Figure 1.0 below shows the relationship between these factors.

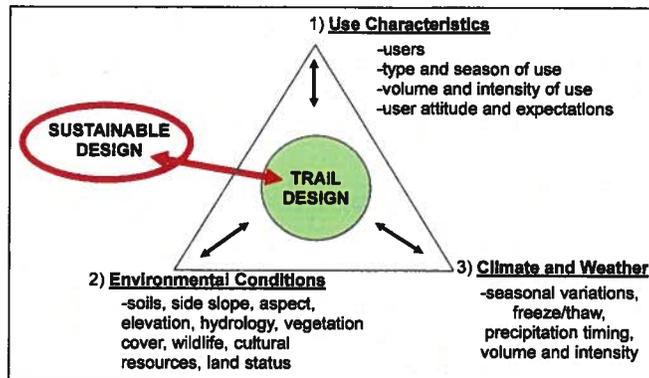


Figure 1.0 The Trail Triangle

Trail use characteristics refer to the type (motorized, foot, bike, horse, etc.), volume, intensity, and season of trail use. Knowing these use characteristics helps predict expected wear and tear on the trail tread and associated trail features.

Site conditions such as slope (or lack of slope), soil type, and local hydrology describe the physical environment in which the trail will be constructed. As a trail crosses different landscapes, the surface soil, site hydrology, and terrain characteristics change. As these site conditions change, the site's natural ability to support trail use changes. Trail design and construction methods often need to be modified to reflect changing site conditions.

Climate and weather also have a strong effect on trails. Trails in the northern latitudes have seasonal freeze and thaw cycles. Trails in southern latitudes may have predictable dry or wet seasons. Local weather events, regardless of the climate, are important considerations. These events include precipitation frequency, intensity, and volume.

These three factors define a trail's users and environment. Each factor must be considered in trail design. For more information on the trail triangle, see Meyer 2010.

### Sustainable Trail Guidelines

With the trail fundamentals, TMOs, and the trail triangle in mind, the National Park Service and Alaska State Parks emphasize six sustainable trail guidelines when designing and constructing trails:

- 1) *Contour curvilinear alignment* – a trail should be properly aligned with respect to the natural landscape; it should generally run along, rather than abruptly cross the natural contour of the local landscape.
- 2) *Controlled grade* – a trail should have a grade that is sustainable (reduces displacement and erosion). Typically, the grade should average less than 10% (10 foot elevation gain in 100 feet), with a maximum trail grade not exceeding 15% for more than 50 feet, or for greater than 5% of the total trail length. Actual average and maximum grades should be determined based on local site conditions.
- 3) *Integrated water control* – the trail design and alignment should incorporate a combination of tread outslope, and intergraded grade reversals or constructed rolling grade dips to naturally direct water off of the trail surface in a fashion that replicates the original landscape's flow patterns.

- 4) *Full bench construction* – trails should be constructed so that the entire width of the tread surface is built on an excavated bench of native, undisturbed material. Partial cut and fill bench construction is discouraged due to possible failures of filled sections.
- 5) *Durable tread* – trail tread surfaces should be comprised of high quality material such as well-drained mineral soil, gravel, bedrock, or a type of “hardened” tread surface (e.g. imported capping material, planking, porous pavement panels, etc). This is especially important when trails cross flat-lying terrain, permafrost or wetlands.
- 6) *Regular and appropriate maintenance* – no trail is maintenance-free, not even sustainable trails. A trail should receive regular maintenance to keep it within its original, or desired, design specifications.

Applying these guidelines ensures a high level of environmental protection and long-term utility of the trail and tread surface under most anticipated use and climatic conditions. The sustainable trail guidelines provide trail managers with a checklist for trail design, layout, and construction. The guidelines can help managers build trails that resist impact and are resilient when conditions change. Also, they can help trail managers identify design flaws in existing trails and predict how the trail will hold up under changes in use characteristics or extreme climatic events. For more information on sustainable trail guidelines, see Meyer 2010.

Based on an analysis of existing conditions and the presence or absence of the sustainable guidelines, existing trails can be classified into one of four sustainability categories to aid future management: design sustainable, performance sustainable, maintainable, and unmaintainable. See Meyer 2010 for more information on this analysis method.

## **TRAIL PROJECT AREA**

The Mastodon Trail will be located in the Chena River State Recreation Area, 26 miles east of Fairbanks, Alaska (see Figure 2.0). The 2006 update of the *Chena River State Recreation Area Management Plan* calls for the area to be managed for “a wide range of recreation uses, based on its natural values, use patterns, and ability to support uses without significant adverse effects to this natural area.” (Alaska Division of Parks and Outdoor Recreation 2006)

According to Northern Area State Park Superintendent, Brooks Ludwig, the Chena River State Recreation Area is one of Fairbank’s favorite recreation destinations and has an annual visitor count of 150,000. Superintendent Ludwig also noted that “a 2006 UAF Visitor Use Survey of Fairbanks North Star Borough residents, found that 50% of those surveyed had visited the Chena River State Recreation Area (page 11)...and...hiking was the favorite activity (page 9).” (Ludwig 2009)



# Chena River State Recreation Area

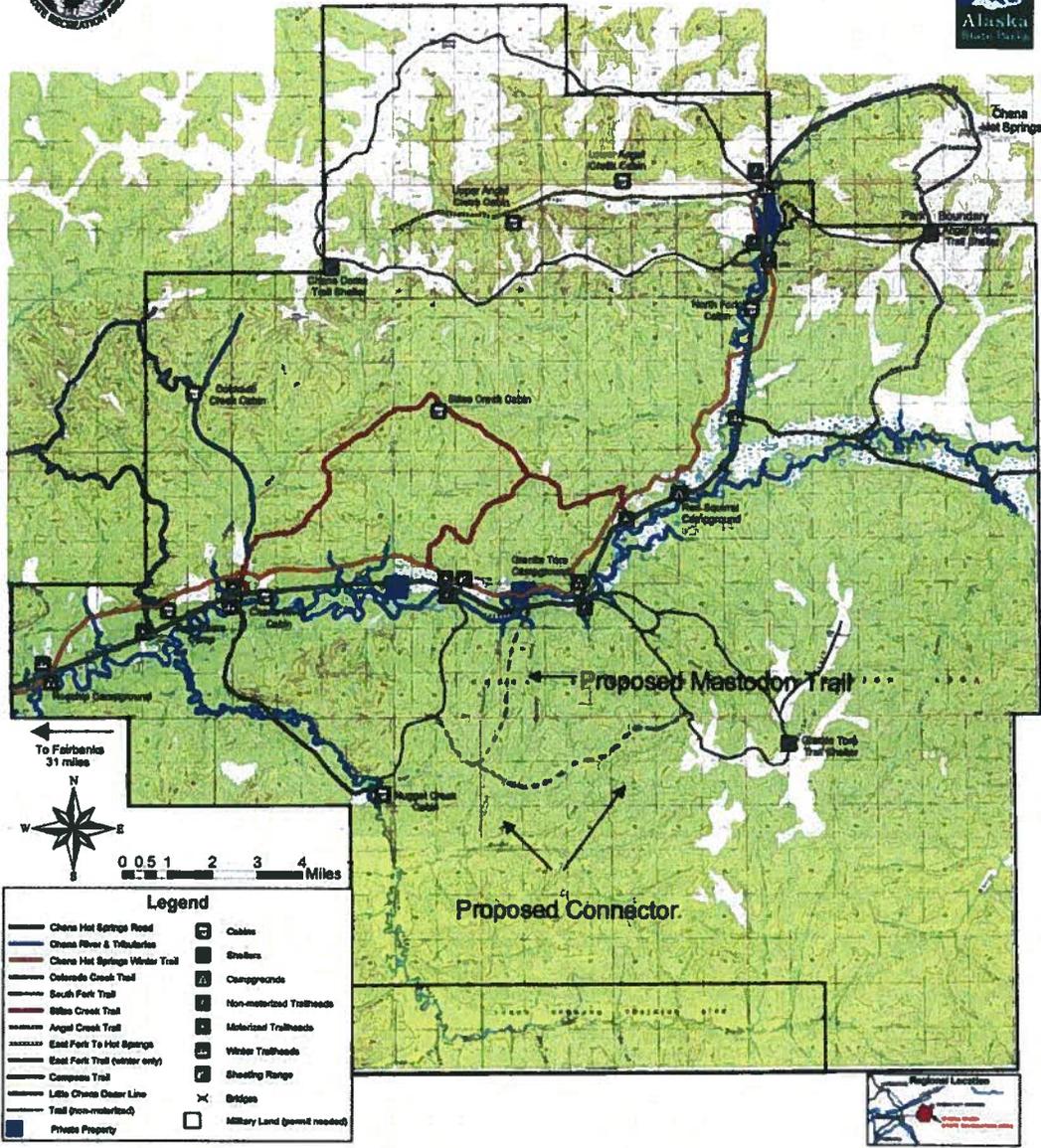


Figure 2.0 Map of Chena River State Recreation Area (Ludwig 2009)

The *Chena River State Recreation Area Management Plan* divides the Recreation Area into six management units (Alaska Division of Parks and Outdoor Recreation 2006). The majority of the Mastodon Trail will be in the Tors Management Unit (Unit 5), though a short section will be in the South Fork Management Unit (Unit 6). The plan describes the Tors Management Unit as follows:

The Tors Unit encompasses the southeast portion of the Recreation Area. This unit consists mainly of the rugged uplands between the South and East forks of the Chena River with narrow strips of lowlands bordering the main stem of the Chena River, Little Munson Creek and Beaver Creek. Contained within this unit are the Granite Tors which jut dramatically from the alpine tundra on the highest ridges. ...

The Tors Unit is designated "Natural Area" and will be managed consistent with these purposes. This unit will be managed for non-motorized use in all seasons, providing a large expanse of backcountry in a quiet, primitive state, except for the Beaver Creek Valley, where winter motorized use will be allowed in designated areas, in accordance with the military land use polices. The lower few miles of the Tors Trail will be managed for higher density use and additional improvements to the trail will be made.

Developed facilities in this unit consist of trails, trail markers and a shelter for overnight use. There are a series of unmarked trail routes looping from the existing Granite Tors Trail to the northeast, southeast and west, along with a trail route up Little Munson Creek through Beaver Creek to the East Fork and Nugget Creek. These provide over 50 miles of trails for hiking and skiing.

Approximately 11,520 acres in the southern portion of this unit is owned by the military.

The South Fork Management Unit is described as follows:

This unit consists mainly of the low valley lands surrounding the South Fork of the Chena River, from its confluence with the main fork upstream to Beaver Creek, and the foothills on the Recreation Area's west boundary. The South Fork delineates the western boundary of the non-motorized section of the park. Nugget Creek cabin on the South Fork provides a popular winter destination. From the cabin, skiers have access to the non-motorized Mist Creek Trail system. Summer use is minimal due to remoteness, river conditions, and lack of access.

The South Fork Unit is designated "Natural Area" and will be managed consistent with these purposes. This unit will be managed as a low density, river floating, hiking and low to medium density winter trail use. Snowmachining is allowed on designated trails. This unit is managed to allow winter motorized uses on the South Fork Trail (page 57).

#### **EXISTING ACCESS TO THE NUGGET CREEK CABIN**

The Nugget Creek cabin is accessed by two existing routes described on the Alaska Division of Parks and Outdoor Recreation website (<http://dnr.alaska.gov/parks/cabins/north.htm>). The winter trail starts on the south side of 31.4 mile Chena Hot Springs Road and is accessible by snowmachine, dog team, skis, or snowshoes. The 6.4 mile winter trail is marked with green diamonds starting at the Chena River. The traveler must cross the Chena River and there is often thin ice or open water, even in late winter, so caution is encouraged.

The Mist Creek Trail provides summer access to the Nugget Creek cabin and begins at mile 36.4 across the Chena Hot Springs Road from the entrance to the shooting range. Hikers must cross the Chena River to reach the start of the trail. The Mist Creek Trail actually has two branches, an east and a west branch. Most hikers follow the west Mist Creek Trail which traverses 0.25 miles of swampy lowland then steeply climbs the ridgeline west of Mist Creek until the top is reached at approximately 2.3 miles. An alternate, though less used and unmarked, route to the ridge is via the east branch of the Mist Creek Trail, which steeply ascends the ridge on the eastern slope above Mist Creek. Once on the ridge, hikers continue to the Nugget Creek cabin on an old dozer trail that descends the mountain and crosses a wet valley floor in a southerly direction to the cabin.

The west branch of the Mist Creek Trail and the dozer trail were recently marked with green and black diamond markers from the halfway point, but the markers can only be seen from one direction and the combined 5.4 mile access remains little more than a route. Furthermore, it is a route that, according to Superintendent Brooks Ludwig, is virtually unusable by anyone other than the hardy adventurer willing to ford chest deep water in the Chena River or portage a canoe 300 yards then cross the river.

In early June, 2010, Kevin Meyer, Lisa Holzapfel (Alaska NPS RTCA Program Leader), Kristen Pearson (Alaska NPS GIS Specialist/Cartographer), and Heather Rice (Alaska NPS RTCA Outdoor Recreation Planner), hiked the west Mist Creek Trail and the dozer trail to the Nugget Creek cabin, assessing conditions along the way. Neither trail meets any of the six sustainable trail guidelines (see table below). Instead, both trails run primarily on fall line, are overly steep, and have no water control. Due to moisture accumulation and a lack of full bench construction, the tread is not durable. The dozer trail, in particular, is deeply entrenched across the flats, with protruding roots and sections of standing water. Neither the Mist Creek Trail nor the dozer trail is regularly maintained. Both would be classified as nonsustainable and unmaintainable in that it would be cost-prohibitive to bring them up to a sustainable condition.

**West Mist Creek Trail and Dozer Trail Compliance with Sustainable Trail Guidelines**

Sustainable Trail Design Guideline	Comply/Fail to Comply?
1. Contour Curvilinear Alignment	Fail
2. Controlled Grade	Fail
3. Integrated Water Control	Fail
4. Full Bench Construction	Fail
5. Durable Tread	Fail
6. Regular and Appropriate Maintenance	Fail

**TRAIL PLANNING HISTORY**

**Chena River State Recreation Area Management Plan Direction**

The 2006 *Chena River State Recreation Area Management Plan* does not specifically identify any new trails for the area; however, it does provide indirect justification for the proposed Mastodon Trail through its recommendations. On page 24, the plan states that “[s]everal routes are possible and should be considered for the future, such as trails ... connecting the Mist Creek Trail with the Granite Tors Trail. Future new trails should link with existing trails to create more loop trail opportunities or to extend access into new areas.” Elsewhere, on page 54, the plan directs Northern Area State Park to design the Mist Creek Trail for winter and summer non-motorized use and to work with user groups and individuals to expand winter trails and a cabin system for non-motorized users. Finally, on page 57, the plan recommends that trail access to the existing Nugget Creek cabin be improved.

These recommendations served as a catalyst for the Northern Area State Park proposal for the Mastodon Trail. The Mastodon Trail will implement these plan recommendations, providing a sustainably designed and constructed year-round trail that will substantially improve access for people of all ages and skill levels.

### **Public Outreach and Support**

The 2006 update of the *Chena River State Recreation Area Management Plan* involved several rounds of public review and many meetings and workshops that gave the public an opportunity to comment on plan proposals, including those recommendations highlighted above. Since that time, improvements made on other trails in the area have increased public support for trail development and the public has been kept abreast of recreation area trail projects through regular media releases. The Northern Area State Park Citizen Advisory Board (Northern Area CAB), a diverse group of trail users who assist recreation area staff with management and development issues, has been an important conduit for public participation and opinion, conveying ideas and concerns to and from park staff.

The proposed Mastodon Trail has the full support of the Northern Area CAB. In recent years, Northern Area CAB members, Tom Paragi and Dave Payer, have been instrumental in carrying forward the proposal. Both have researched a number of routes for the Mastodon Trail that would link the Tors Trail to the Mist Creek Trail and improve access to the Nugget Creek cabin. They conducted reconnaissance for these routes during the winter of 2007 and spring of 2008 and drew up a map reflecting their findings, including a potential shelter location. For the past several years additional volunteers have scouted and flagged alternative trails to the Nugget Creek cabin.

In 2010, Northern Area State Parks began a formal public involvement process to solicit input on the trail proposal. A video-conference was hosted on March 11 in Fairbanks by the Northern Area CAB and RTCA. Key stakeholders were invited to discuss the Mastodon Trail and receive training on sustainable trail design and construction and trail management objectives. Two Northern Area CAB members and three Northern Area State Park staff attended. Due to technical difficulties with the video-conferencing, however, the training component was rescheduled to March 23 when Kevin Meyer, Alaska NPS Regional Trails Specialist, could present the materials in person. At that later meeting, ten Northern Area CAB members, three Northern Area State Park staff, and seven visitors attended.

On May 6, the *Fairbanks Daily News Miner* published an article about the trail proposal and upcoming public open house hosted by the Northern Area CAB. The open house, held on May 12 in Fairbanks, gave the wider public an opportunity to learn more about the trail proposal and provide feedback. Nineteen people signed in at this open house.

As part of its public outreach, Northern Area State Park also set up an on-line survey for public input, with questions about the Mastodon Trail. The trail received broad public support in the on-line survey. Of the 181 people who completed the survey (as of August 10, 2010), more than 91% support building a sustainable trail to Nugget Creek cabin. Most survey takers (48%) selected hiking as the principal type of access they'd use the trail for, with skiing and bicycling selected by the next highest percentage of survey takers (16% each). Sixty-one percent of those surveyed supported opening the trail to bicycles. Ninety-five percent of those surveyed support a trail network with shelters in the Tors Management Unit.

On June 24, 2010, the *Fairbanks Daily News Miner* published an article noting that "[a]fter receiving overwhelming support, Alaska State Parks is going ahead with a plan to build a new non-motorized trail

in the Chena River State Recreation Area.” The article described the work done in June by RTCA trail specialists and Chena River State Recreation Area trail crews to layout and flag a conceptual trail corridor (see “Mastodon Trail Reconnaissance” section of this report).

## TRAIL FUNDAMENTALS AND TRAIL MANAGEMENT OBJECTIVES

Based on staff expertise and public comments, the Northern Area State Park identified summer and winter trail management objectives for the proposed Mastodon Trail (to view these original TMOs, see Appendix A). After field analysis, the NPS recommended several modifications to the TMOs, which are highlighted in **red lettering** below. Northern Area State Park staff should discuss these recommendations with the general public before deciding whether or not to implement them.

### Summer Trail Management Objectives

- Trail Type – Terra (soil)
- Trail Class – 3 (developed/improved)
- Difficulty – (NPS recommends deleting this and letting users make their own determination)
- Level of Use – (NPS recommends deleting this and letting users make their own determination)
- Designed Use – Hiker/pedestrian
- Design Parameters – See table below
- Managed Use (May 15 to October 15) – Hiker/pedestrian, bicycle, pack and saddle (Note: to open the trail to bicycle use, the Alaska State Parks Director would need to issue a director’s order.)
- Prohibited Use (April 20 to May 14) – Bicycle, pack and saddle
- Prohibited Use (year-round) – all motorized use would be prohibited **except as needed for administration, maintenance, fire and safety operations.**

### **Mastodon Trail Summer Design Parameters for Trail Class 3, Hiker/Pedestrian**

Basic Tread Width (inches)	36”
<b>Bench Width (inches)</b>	<b>48-54” to accommodate administrative ATV use</b>
Clearing Width (feet)	<b>4-5’ to accommodate administrative ATV use</b>
Clearing Height (feet)	8’
Backslope	1:1
Target Grade for <b>95%</b> of Trail (%)	<12%
Maximum Sustainable Grade for <b>up to 100 Feet</b> (%)	25%
Minimum Turn Radius (feet)	6’

### Winter Trail Management Objectives

- Trail Type – Snow
- Trail Class – 3 (simple/minor development)
- Difficulty – (NPS recommends deleting this and letting users make their own determination)
- Level of Use – (NPS recommends deleting this and letting users make their own determination)
- Designed Use – Cross-country ski **on ungroomed trails**
- Design Parameters – See table below
- Managed Use (October 15 to April 20) – Cross-country ski ; **bicycle (Note: to open the trail to bicycle use, the Alaska State Parks Director would need to issue a director’s order.)**
- Prohibited Use (April 20 to May 14) – Bicycle

- Prohibited Use (year-round) – **pack and saddle use**; all motorized use would be prohibited **except as needed for administration, maintenance, fire and safety operations**; no mechanical grooming would occur.
- Other Use – Dogsled, ski-jouring, and snowshoeing accepted (**NPS notes that the proposed trail design parameters currently do not accommodate dogsledding and ski-jouring**)

**Mastodon Trail Winter Design Parameters for Trail Class 2, Cross-Country Ski**

Basic Tread Width (inches)	36"
<b>Bench Width (inches)</b>	<b>48-54" to accommodate administrative ATV use</b>
Clearing Width (feet)	<b>4-5' to accommodate administrative ATV use</b>
Clearing Height (feet)	<b>8-10'</b>
Backslope	1:1
Target Grade for <b>95%</b> of Trail (%)	<15%
Maximum Sustainable Grade for <b>up to 100 Feet</b> (%)	25%
Minimum Turn Radius (feet)	10'

<sup>1</sup>For Design Parameter attribute definitions (e.g., tread width), see Forest Service Handbook 2309.18, section 05.

<sup>2</sup>The determination of trail-specific grades, surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.

**TRAIL RECONNAISSANCE**

On March 24, 2009, Kevin Meyer conducted a site visit with Superintendent Brooks Ludwig. The purpose of the site visit was to better understand the character of the local landscape in which the proposed Mastodon Trail would be built. All that was known at this point was that the Mastodon Trail corridor would need to start at Chena Hot Springs Road, cross over the top of an unnamed ridge, and descend to the Nugget Creek cabin. The site visit provided an opportunity to scout possible trailhead locations and approaches to the cabin.

On the morning of March 24, Brooks and Kevin snowmachined upriver to the Nugget Creek cabin, which is located on the south side of the unnamed ridge. From the cabin, they visually scanned the south facing slopes of the drainage immediately to the north, and hiked the drainage itself, looking for possible trail alignments connecting the cabin to the top of the ridge. The southeast facing slopes of the drainage appeared more suitable for the new trail alignment due to suspected more favorable soil conditions. The valley floor had significant off-icing, which could create unsafe conditions for winter use and, therefore, was eliminated as an option. Given these observations, the best location for the alignment between the cabin and the top of the ridge was determined to be along the southeastern aspect of the ridge west of the drainage.

After scouting the areas around the cabin, Kevin and Brooks travelled to the north side of the ridge, along the Chena Hot Springs Road. Here, they looked for a new trailhead and a trail corridor that would ascend the ridge from the north side, ultimately connecting to the cabin trail on the south side. As noted earlier in this report, Northern Area CAB members, Tom Paragi and Dave Payer, had researched a number of routes to improve access to the Nugget Creek cabin. One of those routes was a ridgeline east of the existing Mist Creek Trail, between Crawford Creek and Mastodon Creek. However, Kevin and Brooks found the north facing bluff of the toe of this ridge too steep, with too much exposed bedrock, to build a sustainable trail. Additionally, following the ridgeline would create a fall line trail, which would not meet trail management objectives. Therefore, this route was eliminated from consideration. The

north and east facing side slopes of Mastodon Creek also were eliminated from consideration, because they were too steep, wet, and heavily incised for trail construction.

After further reconnaissance, Kevin and Brooks determined that the best location for the Mastodon Creek trailhead would be between milepost 38 and 39 of Chena Hot Springs Road. From here, the trail would cross the valley floor, then traverse the previously burned west facing slope of the ridge to the east of Mastodon Creek. After about two miles, the trail would cross an eastern fork of Mastodon Creek then traverse the northwest facing slope above the eastern fork, angling south and west until it reached the main channel of Mastodon Creek. The trail then would cross Mastodon Creek and slowly climb a southeast facing slope to gain the ridge. After crossing the ridge, the trail would contour below the ridge along the southwestern and southern aspects of the ridge to descend slowly along a southeast facing slope to the Nugget Creek cabin. (See Appendices B and C for maps.)

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## CONCEPTUAL TRAIL CORRIDOR IDENTIFICATION

In June 2010, Kevin Meyer, Lisa Holzapfel, Kristen Pearson, and Heather Rice travelled to Chena River State Recreation Area to identify and flag a conceptual trail corridor for the Mastodon Trail. Marty Schatz, Chena River State Recreation Area Chief of Maintenance and Trails, and David Charron, Chena River State Recreation Area Trails Coordinator, also contributed time and assistance on the layout. Three volunteer trail crew members from the Chena River State Recreation Area helped set up a spike camp to support work on the last half of the layout.

The team spent five days in the field, hiked a total of 49 miles (36 of which were bushwacking), and roughly laid out and flagged 10.5 miles of conceptual trail corridor. Had this been the work of a contracted trail crew, only one experienced trail professional and one trained assistant would have been necessary, but the total cost would have been approximately \$44,000. This total cost estimate is based on the following assumptions:

- 15 days each for field work given a typical pace of 3/4 mile per 10-hour day for rough layout and flagging (note, for the much more precise pre-construction layout and flagging, the pace would drop to about 1/4 mile per 10-hour day, quadrupling the costs);
- 10 8-hour days each for pre-field preparation and logistics;
- 10 8-hour days each for post-field analysis, map creation, and report writing;
- Wages of \$60/hour for a trail professional and \$45/hour for the trained assistant;
- Travel costs of about \$6,000 total; and
- 15% overhead.

The conceptual trail corridor was flagged using bright pink Arctic Grade tape. When crossing the valley floor, flagging marks the conceptual trail center line. At the point the bench cut starts (WP 21), flagging is along the critical edge (i.e., the outer edge) of the trail. All water control grade reversals are marked with double flags, one above the other on the same tree. All switchbacks are marked with triple flags, all three on the same tree. At one place on the top of the ridge, there were several pink trapper trail flags so RTCA wrote "NPS" in black marker on its flags to differentiate them from trapping and other flag lines. A rough GPS/GIS trail log was created documenting site conditions and possible trail construction methods; this log is not intended to be a detailed trail prescription, nor intended to be used for final trail construction.

Maps showing the rough location of the conceptual trail corridor, location of specific GPS waypoints, and associated field notes are found in Appendix B (Layout Overview) and C (Waypoints Overview).

## **CONCEPTUAL TRAIL CORRIDOR CONSTRUCTION RECOMMENDATIONS**

The average grade for the trail is 8-10%, with a maximum grade of 15%. Based on suggested construction methods, the proposed Mastodon Trail corridor was subdivided into 13 distinct sections:

- A. Gravel Cap (WP 13-17) - 1,177 linear feet
- B. Ditch and Elevate with Gravel Cap (WP 17-22) - 2,160 linear feet
- C. Bench Cut (WP 22-30) - 7,545 linear feet
- D. Gravel Cap (WP 30-32) - 438 linear feet
- E. Bench Cut (WP 32-34) - 2645 linear feet
- F. Ditch and Elevate (WP 34-37) - 1,800 feet linear feet
- G. Gravel Cap (WP 37-38) - 681 linear feet
- H. Bench Cut (WP 38-43) - 7,160 linear feet
- I. Ditch and Elevate (WP 43-44) - 385 linear feet
- J. Bench Cut (WP 44-80) - 2,670 linear feet
- K. Bench Cut (Turn Options) - 1,120 linear feet (Climbing turn); 1,065 linear feet (Switchback); or 6,000 linear feet (alternative traverse option)
- L. Bench Cut (WP 77-63) - 17,000 linear feet
- M. Bench Cut (WP 63-54) - 9,030 linear feet

These sections are shown on the maps in Appendix B and C. A general description and recommendations for each section, including necessary trail structures, bridges, and other enhancements, such as viewsheds and cabins, are described below.

**Note – mapped trail corridor and estimated construction methods are conceptual only. All recommendations should be certified by professional engineers, licensed landscape architects, or qualified trails professionals. In addition, a qualified trails professional will need to identify and flag the final detailed trail alignment prior to construction to ensure desired grades are met and trail structures, such as switchbacks, are designed and subsequently constructed correctly. As with all trail construction, a trained trail crew leader should be continually on-site during construction to oversee all work on-the-ground.**

### **A. Gravel Cap (WP 13 to WP 17)**

From WP 13 to WP 17, approximately 1,177 linear feet of trail would need to be constructed to cross the flat valley floor. This would require using imported gravel fill material with a 1 to 2-foot average lift. The organic mat would be removed down to mineral soil and a geotextile material laid down prior to applying the gravel fill.

The average trail grade would be less than 5%. To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with a construction prism of up to 2 feet either side. Though this would create an initial disturbance area of 8 feet, naturally occurring vegetation regrowth would reduce the width over time.

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
1,177 linear feet	Gross estimate: <ul style="list-style-type: none"> <li>• 392 cubic yards imported gravel fill material for 2-foot average lift</li> <li>• 1,177 linear feet geotextile material</li> </ul>	<ul style="list-style-type: none"> <li>• Skid steerer for loading gravel at trailhead</li> <li>• SWECO for initial grubbing and spreading gravel</li> <li>• Tracked carrier for transporting gravel</li> <li>• Compactor</li> </ul>	6-8 person crew (including heavy equipment operator)

Toward the end of this section of trail, an approximately 24-foot long bridge would be needed to cross the stream at WP 15. The bridge must be at least 54-inches wide to allow ATVs to cross and must be able to hold the weight of any heavy equipment used for construction (e.g., SWECO, mini-excavator, loaded gravel carriers). Wet swales at WP 14 and WP 16 also would need to be hardened. All three structures should be discussed with, and designed by, professional engineers to ensure they meet national standards for safety and overall purposes. In addition, professional hydrologists and fisheries biologists should be consulted. The materials, labor estimates, and cost of construction for these crossings are not estimated and would be in addition to the above estimates provided for trail construction alone.



Photo 1.0 Stream Crossing at WP 15



Photo 2.0 Burned Side Slope at WP 25

### **B. Ditch and Elevate with Gravel Cap (WP 17 to WP 22)**

From WP 17 to WP 22, approximately 2,160 linear feet of trail would be constructed using the ditch and elevate technique with a 2- to 4-inch cap of imported gravel to cross wet soils. With the ditch and elevate technique, the tread surface is built up using material from excavated side ditches. Between WP 21 and WP 22, the trail would ascend the hillside in a series of S-turns with an 8% grade.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope of up to 2 feet either side. Though this would create an initial disturbance area of 8 feet, naturally occurring vegetation regrowth would reduce the width over time.

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
2,160 linear feet	Gross estimate: <ul style="list-style-type: none"> <li>108 cubic yards imported gravel material for 4-inch cap</li> </ul>	<ul style="list-style-type: none"> <li>Skid steerer for loading gravel at trailhead</li> <li>Excavator to ditch and elevate</li> <li>SWECO for initial grubbing and grading</li> <li>Tracked carrier for transporting gravel</li> <li>Compactor</li> </ul>	6-8 person crew (including heavy equipment operator)

**C. Full Bench Cut (WP 22 to WP 30)**

For this side hill section, approximately 7,545 linear feet of trail would be built using full bench construction. With this technique, the total width of the trail tread is excavated out of the slope and the trail tread contains no compacted fill material. The outslope of the bench should be greater in percentage than the tread grade.

The average trail grade for this section would be 8%. At WP 27 and WP 28, where the trail would ascend and descend in a “W” shape, the grade would change to +/- 5% and +/-3%, respectively, to allow water to drain.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet. Total site impact would vary depending on the steepness of the side slope and amount of material excavated and sidecast. Though this would create an initial large disturbance area, vegetation could be allowed to grow back in, resulting in a final 36-inch trail tread and, thus meeting the trail management objectives for tread width. (Note that clearing width could be significantly higher than described in the trail management objectives.)

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
7,545 linear feet	n/a	<ul style="list-style-type: none"> <li>SWECO and tracked excavator</li> <li>Hand grubbing tools: pulaskis, McLoeds</li> <li>Clinometer for measuring grade.</li> <li>Flagging</li> </ul>	6-8 person crew (including heavy equipment operator)

**D. Gravel Cap (WP 30 to WP 32)**

From WP 30 to WP 32, approximately 438 linear feet of trail would be constructed using locally obtained gravel fill material with a 1 to 2-foot average lift. The organic mat would be removed down to mineral soil and a geotextile material laid down prior to applying the gravel fill. The gravel fill could come from the material excavated from adjacent bench cut trail sections or from a separately developed gravel pit.

The average trail grade would be 3%. To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope of up to 2 feet either side. Though this would create an initial disturbance area of 8 feet, naturally occurring vegetation regrowth would reduce the width over time.

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
438 linear feet	Gross estimate: <ul style="list-style-type: none"> <li>• 146 cubic yards local gravel fill material for 2-foot average lift</li> <li>• 438 linear feet geotextile material</li> </ul>	<ul style="list-style-type: none"> <li>• Mini-excavator for loading gravel at borrow site</li> <li>• SWECO for initial grubbing and spreading gravel</li> <li>• Tracked carrier for transporting gravel</li> <li>• Compactor</li> </ul>	6-8 person crew (including heavy equipment operator)

This section of the trail crosses an east fork of Mastodon Creek. Because of the creek configuration, two bridge spans would be needed, one approximately 22-feet long and the other approximately 25-feet long. Both spans must be at least 54-inches wide to allow ATVs to cross and must be able to hold the weight of any heavy equipment used for construction (e.g., SWECO, mini-excavator). The bridges should be discussed with, and designed by, professional engineers to ensure they meet national standards for safety and overall purposes. In addition, professional hydrologists and fisheries biologists should be consulted. The materials, labor estimates, and cost of construction for these bridges are not estimated and would be in addition to the above estimates provided for trail construction alone.

**E. Bench Cut (WP 32 to WP 34)**

For this section, approximately 2,645 linear feet of trail would be built using full bench construction. With this technique, the total width of the trail tread is excavated out of the slope and the trail tread contains no compacted fill material. The outslope of the bench should be greater in percentage than the tread grade. WP 34 marks a wet area that may require trail hardening with gravel from adjacent bench cuts.

The average trail grade would be 8%, with a 10-12% climbing turn at WP 32 to traverse the north-facing slope. Some of the more challenging construction will occur near the turn site due to wet soil conditions and possible permafrost. The grade would transition back to 8% before starting to descend the slope at WP 33.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope varying in width depending on the steepness of the side slope and amount of material excavated and sidecast. Though this would create an initial large disturbance area, vegetation could be allowed to grow back in, resulting in a final 36-inch trail tread and, thus meeting the trail management objectives for tread width. (Note that clearing width could be significantly higher than that described in the trail management objectives.)

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
2,645 linear feet	n/a	<ul style="list-style-type: none"> <li>• SWECO and tracked excavator</li> <li>• Hand grubbing tools: pulaskis, McLoeds</li> <li>• Clinometer for measuring grade.</li> <li>• Flagging</li> </ul>	6-8 person crew (including heavy equipment operator)



Photo 3.0 Top of Fall Line Alignment at WP 35



Photo 4.0 Main Channel Mastodon Creek at WP 36

**F. Ditch and Elevate (WP 34 to WP 37)**

From WP 34 to WP 37, up to 1,800 linear feet of trail would be constructed to descend to the main Mastodon Creek crossing. One of two techniques could be used. The first would use a series of wide climbing turns and a ditch and elevate technique to reduce overall grade and provide for a contour alignment. The second option would be to descend straight down along the fall line (where the side slope is less than 12%), with rolling grade dips installed a minimum of every 100 feet to control water and erosion.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the bench should be 4.0-4.5-feet, with an outslope and backslope of up to 2 feet either side. Though this would create an initial large disturbance area, vegetation could be allowed to grow back in, resulting in a final 36-inch trail tread and, thus meeting the trail management objectives for tread width. (Note that clearing width could be significantly higher than that described in the trail management objectives.)

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
1,800 linear feet for ditch and elevate technique  Or  1,000 linear feet for fall line/rolling grade dip technique	n/a	<ul style="list-style-type: none"> <li>Excavator to ditch and elevate</li> <li>SWECO for initial grubbing, grading and building rolling grade dips</li> <li>Compactor</li> </ul>	6-8 person crew (including heavy equipment operator)

This section of the trail would require construction of an approximately 56-foot long bridge to cross the main channel of Mastodon Creek. The bridge must be at least 54-inches wide to allow ATVs to cross and must be able to hold the weight of any heavy equipment used for construction (e.g., SWECO, mini-excavator). The bridge should be discussed with, and designed by, professional engineers to ensure they meet national standards for safety and overall purposes. In addition, professional hydrologists and fisheries biologists should be consulted. The materials, labor estimates, and cost of construction for this bridge are not estimated and would be in addition to the above estimates provided for trail construction alone.

**G. Gravel Cap (WP 37 to WP 38)**

From WP 37 to WP 38, approximately 681 linear feet of trail across wet hummocky ground would be constructed using locally obtained gravel fill material with a 1 to 2-foot average lift. The organic mat would be removed down to mineral soil and a geotextile material laid down prior to applying the gravel fill. The gravel fill could come from the material excavated to construct the next full bench section along the slope west of main channel of Mastodon Creek. The average grade of this trail section would be 8%.

About 4 miles from the road, upslope of WP 38 on drier ground, a public use cabin could be constructed.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope of up to 2 feet either side. Though this would create an initial disturbance area of 8 feet, naturally occurring vegetation regrowth would reduce the width over time.

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
681 linear feet	Gross estimate: <ul style="list-style-type: none"> <li>227 cubic yards local gravel fill material for 2-foot average lift</li> <li>681 linear feet geotextile material</li> </ul>	<ul style="list-style-type: none"> <li>Mini-excavator for loading gravel along bench cut</li> <li>SWECO for initial grubbing and spreading gravel</li> <li>Tracked carrier for transporting gravel</li> <li>Compactor</li> </ul>	6-8 person crew (including heavy equipment operator)

### H. Bench Cut (WP 38 to WP 43)

For this section, approximately 7,160 linear feet of trail would be built using full bench construction. With this technique, the total width of the trail tread is excavated out of the slope and the trail tread contains no compacted fill material. The outslope of the bench should be greater in percentage than the tread grade.

About 5 miles from the road, at WP 39, a public use cabin could be constructed. At WP 41, there is a wet seep/spring that could potentially be developed for drinking water, though the wet ground just before and after the seep (about 25-feet) should be hardened, possibly using permeable pavement (e.g., Geoblock). See Appendix D ("Alaska Trail Improvement Project Summary for the Summit-Lake Miam Re-route and Trail Hardening Project 2004-2005") and Appendix E ("Alaska Trail Improvement Project Summary for the Karluk Landing Project 2005"), for details on installing permeable pavement.

The average trail grade would be 8%. From WP 38 to WP 40 there would be a 8-10% traverse to climb out of the drainage, then there would be a short break of +/-3% grades from WP 40 to WP 42. At WP 42, the grade again would become a steeper (10%) to finish the hillside climb to the first ridge influence at WP 43.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope varying in width depending on the steepness of the side slope and amount of material excavated and sidecast. Though this would create an initial large disturbance area, vegetation could be allowed to grow back in, resulting in a final 36-inch trail tread and, thus meeting the trail management objectives for tread width. (Note that clearing width could be significantly higher than that described in the trail management objectives.)

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task. Starting at this point, the park may want to consider restricting construction to a mini-excavator only.

<b>Approximate Distance</b>	<b>Materials</b>	<b>Tools (partial list)</b>	<b>Labor</b>
7,160 linear feet	Gross estimate: <ul style="list-style-type: none"><li>• 6'x25' of Geoblock or other brand of permeable pavement, screws, and miscellaneous supplies for installation (see Meyer 2002)</li></ul>	<ul style="list-style-type: none"><li>• Tracked excavator</li><li>• Hand grubbing tools: pulaskis, McLoeds</li><li>• Clinometer for measuring grade.</li><li>• Flagging</li><li>• Tools for installing Geoblock</li></ul>	6-8 person crew (including heavy equipment operator)



Photo 5.0 Transition to Bench Cut at WP 38



Photo 6.0 Seep/Spring at WP 41

**I. Ditch and Elevate (WP 43 to WP 44)**

From WP 43 to WP 44, approximately 385 linear feet of trail would be constructed using the ditch and elevate technique to cross the flat-lying ridge top. With the ditch and elevate technique, the tread surface is built up using material from excavated side ditches. The grade of this trail section as it crosses the first ridge influence from WP 43 to WP 44 would be 5-7%.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the bench should be 4.0-4.5-feet, with an outslope and backslope of up to 2 feet either side. Though this would create an initial disturbance area of up to 8 feet, vegetation could be allowed to grow back in, resulting in a final 36-inch trail tread and, thus meeting the trail management objectives for tread width. (Note that clearing width would be double that described in the trail management objectives.)

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
385 linear feet	n/a	<ul style="list-style-type: none"> <li>Excavator to ditch and elevate</li> <li>Compactor</li> </ul>	6-8 person crew (including heavy equipment operator)

**J. Bench Cut (WP 44 to WP 45 and WP 84 to WP 80)**

For this section, approximately 2,670 linear feet of trail would be built using full bench construction to cross the ridge top knob. With this technique, the total width of the trail tread is excavated out of the slope and the trail tread contains no compacted fill material. The outslope of the bench should be greater in percentage than the tread grade.

From WP 44 to WP 45, the trail would cross the top of the ridge at a 3-5% grade. From WP 84 to WP 80, the grade would run from 5-10%.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope varying in

width depending on the steepness of the side slope and amount of material excavated and sidecast. Though this would create an initial large disturbance area, vegetation could be allowed to grow back in, resulting in a final 36-inch trail tread and, thus meeting the trail management objectives for tread width. (Note that clearing width could be significantly higher than described in the trail management objectives.)

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
2,670 linear feet	n/a	<ul style="list-style-type: none"> <li>• Tracked excavator</li> <li>• Hand grubbing tools: pulaskis, McLoeds</li> <li>• Clinometer for measuring grade.</li> <li>• Flagging</li> </ul>	6-8 person crew (including heavy equipment operator)

**K. Bench Cut Turn Options (WP 78 to WP 79 and WP 83 to WP 88)**

Along this section of the trail RTCA staff roughed out two turn options in order to ascend/descend steep side slope, plus an alternative traverse option. These options are:

- Climbing Turn (WP 88 to WP 87 to WP 86 to WP 85 to WP 80) – 1,120 linear feet
- Switchback (WP 88 to WP 78 to WP 79 to WP 80) – 1,065 linear feet
- Alternative Traverse (~WP 88 to WP 83) - ~6,000 linear feet (not laid out in the field)

With either of the turn options, it’s imperative that during construction, Northern Area State Park staff work with someone on the ground who is an expert in designing and constructing such turns and who can fine-tune the turns, help staff select the best option, and then direct the construction crew in building the turns. All turns would be constructed using full bench cut techniques described above. The alternative traverse option was not laid out in the field; therefore, if this option is selected, trail experts would have to complete the actual layout and flagging before moving forward with construction.

The three options were developed to respond to different management needs. The alternative traverse option would eliminate the need for any tight-radius turns that would restrict administrative use of motorized equipment (e.g., ATVs and snow machines). The switchback option is the most sustainable, but would significantly restrict motorized use. It also would be the most expensive to construct. The climbing turn option is a compromise that would allow for somewhat restricted motorized access, but would be less sustainable than the switchback. Due to the significantly long route required by the alternative traverse, it was not flagged in. The NPS RTCA recommendation is the climbing turn alternative.



Photo 7.0 Switchback Looking North at WP 79



Photo 8.0 Climbing Turn at WP 86

**L. Bench Cut (WP 77 to WP 63) [numbers go backwards in reference to the map]**

For this section traversing the main ridge, approximately 17,000 linear feet of trail would be built using full bench construction. With this technique, the total width of the trail tread is excavated out of the slope and the trail tread contains no compacted fill material. The outslope of the bench should be greater in percentage than the tread grade.

The average trail grade would be less than 7%. Some trail segments would have grades of +/-5%, while other segments would have grades of +/- 7%.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope varying in width depending on the steepness of the side slope and amount of material excavated and sidecast. Though this would create an initial large disturbance area, vegetation could be allowed to grow back in, resulting in a final 36-inch trail tread and, thus meeting the trail management objectives for tread width. (Note that clearing width could be significantly higher than described in the trail management objectives.)

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
17,000 linear feet	n/a	<ul style="list-style-type: none"> <li>• Tracked excavator</li> <li>• Hand grubbing tools: pulaskis, McLoeds</li> <li>• Clinometer for measuring grade.</li> <li>• Flagging</li> </ul>	6-8 person crew (including heavy equipment operator)

At WP 64, a rest area with views to the south could be constructed with angled edges and selective tree cutting.

**M. Bench Cut (WP 63 to WP 54) [numbers go backwards in reference to the map]**

To descend to the Nugget Creek cabin, approximately 9,030 linear feet of trail would be built using full bench construction. With this technique, the total width of the trail tread is excavated out of the slope and the trail tread contains no compacted fill material. The outslope of the bench should be greater in percentage than the tread grade.

The average trail grade would be 10-12% with a short section of 15% just north of the cabin.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope varying in width depending on the steepness of the side slope and amount of material excavated and sidecast. Though this would create an initial large disturbance area, vegetation could be allowed to grow back in, resulting in a final 36-inch trail tread and, thus meeting the trail management objectives for tread width. (Note that clearing width could be significantly higher than described in the trail management objectives.)

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
9,030 linear feet	n/a	<ul style="list-style-type: none"> <li>• Tracked excavator</li> <li>• Hand grubbing tools: pulaskis, McLoeds</li> <li>• Clinometer for measuring grade.</li> <li>• Flagging</li> </ul>	6-8 person crew (including heavy equipment operator)

At a rock outcropping at WP 62, a rest area and view point could be constructed with angled edges and selective tree cutting.



Photo 9.0 Possible Rest Area at WP 62



Photo 10.0 Possible Rest Area and View at WP 64

## **NEXT STEPS**

The work completed to this point – community outreach, documenting trail management objectives, site reconnaissance, developing a conceptual trail alignment, identifying possible conceptual construction methods – will serve the Northern Area State Park in good stead for moving forward to actual trail construction.

In addition to this report, an invaluable source of information is the statewide motorized and nonmotorized trail advocacy and education nonprofit, Alaska Trails. The Alaska Trails website ([www.alaska-trails.org](http://www.alaska-trails.org)), has information on local and national trail resources, trail clubs, and training courses. Some of the Alaska Trails board members are expert professional trail planners, designers, and builders.

There are several next steps that should be taken in order to ensure the vision for the Mastodon Trail becomes a reality. These next steps are described below.

### **Develop Detailed Trail Prescription and Trail Cost Estimate**

Northern Area State Park staff should develop a detailed prescription for construction along the proposed trail corridor. This should include detail on clearing, tight flagging, structure construction (bridges and trail hardening), and tread construction.

From that detailed prescription, the park should develop a complete cost estimation, materials, supplies, equipment, time, and labor estimate. This should include construction with in-house crews and rented equipment and construction with contracted crews and equipment, or a combination of the two.

A sustainable trail cannot be built properly without a trained, skilled, and experienced trail crew leader, and crew. NPS highly recommends that Northern Area State Park invest in training and building such a crew so they are available each field season.

### **Seek Funding and Resources**

Once the estimated trail cost is developed, it will be important to seek funding from as many sources as possible. Northern Area State Park should look at all sources, from larger state and federal agencies to nonprofit organizations to private foundations. Both in-state and out-of-state sources should be considered. Two lists of trail funding sources, one produced by Alaska Trails and the other by the Alaska Funding Exchange, are provided in Appendix F.

In addition to financial resources, other resources should be sought, including volunteer assistance and donated equipment, materials and in-kind services.

### **Obtain permits and authorizations (including easement)**

From the first moment someone thinks about building a trail, Northern Area State Park should start to explore what permits and authorizations will be necessary to ensure the project's success. Though often considered just a "hoop to jump through," compliance is a valuable and important part of trail planning and should be incorporated into the process from the beginning. Compliance is "paperwork with a purpose" – it is what allows us to consult with myriad government experts to identify the best way to construct a trail while protecting our nation's natural and cultural resources.

For the Mastodon Trail there will likely be permits and authorizations needed to mitigate impacts on wetlands, water quality, fish and fish habitat, migratory birds, and historic/archeological resources. Northern Area State Park should review the list of trail work compliance considerations in Appendix G and consult with agency specialists who can help them refine the trail alignment and construction methods and obtain the necessary permits and authorizations. This consultation should occur simultaneously with, and results incorporated into, additional trail planning, design, and construction work.

### **Flag Trail Layout, Survey Trail Alignment, and Prepare Construction Documents**

With the information provided in this report, Northern Area State Park staff and trail crew will be able to contract with professional engineers, landscape architects, and/or professional trail builders as needed to flag and survey a more detailed and tight trail alignment and prepare construction documents with detailed specifications. A number of firms that specialize in trail design and construction operate in the state of Alaska. The nonprofit, Alaska Trails, is a good place to start to identify these companies. For out-of-state expertise, the Professional Trail Builders, American Trails, and International Mountain Biking Association websites are valuable resources.

### **Construction**

With funding in-hand, compliance complete, construction documents done and the final trail alignment flagged and surveyed, the next step is actual trail construction. Trail construction should occur in the following order:

1. Clear the conceptual alignment;
2. Re-shoot the grade and reflag the critical edge of the trail;
3. Construct trail sections (with daily trail crew leader oversight);
4. Finish and polish full bench cut sections, creating the backslope and dressing up the side cast; and
5. Clear and disburse construction debris and perform vegetation rehabilitation as necessary so the corridor appears natural and is aesthetically pleasing.

A SWECO may be used to construct the first four miles of the trail from Chena Hot Springs Road to the main channel crossing of Mastodon Creek (WP 37); however, when the trail moves across the creek and into forested terrain, park staff may want to consider reducing construction down to a mini-excavator. The mini-excavator does a cleaner job of trail construction, but production rates are much lower than a SWECO.

Northern Area State Park should consider contracting a professional handcrew that includes a trained crew leader and has trail construction experience. The Student Conservation Association is one source of professional crews. These crews could work and train Northern Area State Park crews at the same time. In terms of process, the most efficient option is for the crews to work a day or two ahead of the heavy equipment then return to do the finish work behind the timber clearing. NPS recommends providing written clearing instructions to the clearing crew and construction lead.

Keep in mind that there are many benefits to hiring locally. Hiring local trail crews:

- Supports the local economy;
- Builds local support for trails;
- Creates a cadre of trained trail builders who are more likely to return for future trail work; and

- Helps ensure trail crews are readily available to address maintenance needs as they arise.

Construction spike camps could be located upslope of WP 36 on drier ground, and at WP 50 and at WP 53 on the west Mist Creek Trail. At the latter site, there may be room for a helicopter landing pad, as well.

Note that vegetation removed to construct trail sections could potentially be used to revegetate disturbed areas. A revegetation specialist should be consulted to ensure correct procedures are used to ensure vegetation is removed, stored, and re-planted properly.

### **Maintain, Monitor and Long-term Management**

Construction is not the end of the road, rather the beginning. A trail should be constructed to last 100 years (see Figure 3.0 trail timeline). Northern Area State Park is making a long-term facilities commitment. It will be critical to continue to maintain the trail, monitor it for any impending problems, and take care to provide overall long-term management so it continues to provide benefits and positive trail user experiences for many years and many generations.

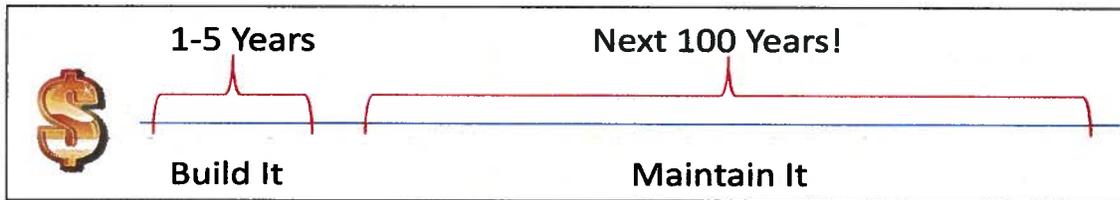


Figure 3.0 Trail Timeline (Beers 2009)

## REFERENCES CITED

**Alaska Division of Parks and Outdoor Recreation.** 2006. *Chena River State Recreation Area Management Plan*. Available at <http://dnr.alaska.gov/parks/plans/chena/chenapln.htm>

**Beers, Don.** 2009. *Trail Management: Plans, Projects and People*. National interagency training course. August 3–7, 2009. Homer, AK. Unpublished PowerPoint presentation. Further information: kevin\_meyer@nps.gov.

**Meyer, Kevin G.** 2002. Managing Degraded Off-Highway Vehicle Trails in Wet, Unstable, and Sensitive Environments. Tech. Rep. 0223-2821-MTDC. Missoula, MT: U.S. Department of Agriculture, Forest Service, Missoula, Missoula Technology and Development Center. Further information: Kevin\_meyer@nps.gov

**Meyer, Kevin G.** 2010. A Comprehensive Framework for Off-Highway Vehicle Trail Management. Tech. Rep. 1023-2804-MTDC. Missoula, MT: U.S. Department of Agriculture, Forest Service, Missoula Technology and Development Center. Unpublished. Further information: Kevin\_meyer@nps.gov

**Chugach State Park.** 2009. Public Review Draft Chugach State Park Trail Management Plan. State of Alaska, Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation. Available at <http://dnr.alaska.gov/parks/units/chugach/trailmgmtplan.htm>

**IMBA (International Mountain Biking Association).** 2004. Trail Solutions: IMBA's Guide to Building Sweet Singletrack. Boulder, CO, Johnson Printing.

**Ludwig, Brooks.** 2009. *NPS Rivers, Trails, and Conservation Assistance Program Application for Assistance*. Further information: heather\_rice@nps.gov.

**USFS (United States Forest Service).** 2008. *TRACS: Trail Assessment and Condition Surveys: 2008 User Guide*. Interagency training course. May 12-13, 2008. Anchorage, AK. Further information: heather\_rice@nps.gov.

## **TRAIL TERMINOLOGY**

**Alignment** – The figurative line along which a trail runs.

**Center Line** – An imaginary line marking the center of the trail. (IMBA 2004)

**Climbing Turn** – A turn to reverse direction that doesn't have a constructed turning platform or landing. (IMBA 2004)

**Ditch and Elevate** – A trail building technique in which the tread surface is built up using material from excavated side ditches.

**Fall Line** – The direction water flows down a slope (path of least resistance) under most circumstances. (IMBA 2004)

**Full Bench Cut** – A trail building technique in which the total width of the trail tread is excavated out of the slope, and the trail tread contains no compacted fill material. (IMBA 2004)

**Ford** – A natural-water-level-stream crossing that can be improved or armored to provide a level, low-velocity surface for trail traffic. (IMBA 2004)

**Grade** – The amount of elevation change between two points over a given distance expressed as a percentage (feet change in elevation for every 100 horizontal feet, commonly known as "rise over run"). A trail that rises 8 vertical feet in 100 horizontal feet has an 8% grade. (IMBA 2004)

**Gravel Cap** – A layer of gravel added on top of mineral soil for trail hardening purposes.

**Hardening** – The manual, mechanical, or chemical compaction of the trail tread resulting in a hard and flat surface that sheets water effectively and resists the indentations that are created by use. (IMBA 2004)

**Outslope** – A method of tread grading that leaves the outside edge of a hillside trail lower than the inside to shed water. (IMBA 2004)

**Sustainable Trail** – A trail that has been designed and constructed to such a standard that it does not adversely impact natural and cultural resources, can withstand the impacts of the intended user and the natural elements while receiving only routine cyclic maintenance and meets the needs of the intended user to a degree that they do not deviate from the established trail alignment. (Beers 2009)

**Sustainable Trail Guidelines** – Six guidelines emphasized by the National Park Service and Alaska State Parks when designing and constructing trails: contour curvilinear alignment, controlled grade, integrated water control, full bench construction, durable tread, and regular and appropriate maintenance.

**Switchback** – A sustainable turn on a hillside. The trail is routed onto a level deck where it makes a transition to the opposite direction. (IMBA 2004)

**Trail Fundamentals** – Five fundamental concepts that are the cornerstones of effective trail planning and management: trail type, trail class, managed use, designed use, and design parameters. Trail fundamentals provide an integrated and expanded means to consistently record and communicate the

intended design and management guidelines for trail design, construction, maintenance and use. (USFS 2008)

Tread – The actual surface portion of a trail upon which users travel. (IMBA 2004)

Waypoint – The set of geographic coordinates that precisely identifies a location.

# **Division of Parks and Outdoor Recreation**

## Trails Grant Application

Application for Trail Development, Maintenance,  
Acquisition & Assessment Projects

**Project Title:** MASTODON TRAIL

**Submitted By:** Brooks Ludwig

What Trails Grant Program are you applying for?

**Check only one!**

- Recreational Trails Grant Program (RTP)
- Snowmobile Trails Grant Program

Applications must be postmarked by the due date  
posted in the application instructions

**NOTE: One electronic copy of this application must be emailed for digital file and a second paper copy with all signatures and attachments must be mailed by the program deadline.**

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## **SECTION 1: Qualifying Criteria for the Recreational Trails Grant Program & Snowmobile Trails Grant Program**

The applicant must meet program eligibility requirements before being considered for funding. If any of the eligibility requirements are not met, proposals will be rejected.

### **Eligibility requirements**

1. Is the applicant an organization or public agency? (Businesses are not eligible for the Recreational Trails Program but **are** eligible for the Snowmobile Trails Program.)

Yes       No

a. If Yes, type of organization

Non-Profit       Business (Snowmobile Grant Funding only)  
Government:  Local       Federal  
 State       Native Corporation

2. Is this application **primarily** for a project or program to benefit a **snowmobile activity**?

Yes       No

3. Public Acceptance: (the project must have support from at least one of the following three requirements)

Does your project have support from:

A. A land management plan; adopted by a local government, state or federal agency or identified within the Statewide Comprehensive Outdoor Recreation Plan (SCORP)? Source and specific language **MUST** be included with this application. (Please refer to the SCORP document on the Alaska Recreational Trail Web Page at [www.alaskastatetrails.org](http://www.alaskastatetrails.org)).  Yes       No

If Yes:  A. Land Management Plan

B.

C.

B. A resolution of support from the local governing body?

Yes       No

If yes, include resolutions as **Attachment A** (**MUST** be included with this application)

C. Letters of support from local community organization(s) or public representing your area? Minimum of three letters required.

Yes       No

If yes, include letters as **Attachment B** (**MUST** be included with this application)

3. Landowner Authorization and Public Access Documentation:

A. Applicant has obtained landowner authorization for project work from all relevant landowners whose land the project crosses?

Yes       No

If yes, include authorization as **Attachment C** (MUST be included with this application)

B. Does landowner authorization meet the public access requirements as stated in the application instructions?

Yes       No

If yes, include authorization as **Attachment D** (MUST be included with this application)

Private Land

Land Owner A:

Land Owner B:

Land Owner C:

Number of years of public access:

(Land owner authorization must be valid for five or more years to qualify for grant funding.)

Public Land

Land Owner A:

Land Owner B:

Land Owner C:

Number of years of public access:

(Ownership must be ten or more years to qualify for grant funding .)

**PLEASE NOTE: If you answered "NO" to any of these questions or necessary documents are not included with this application, you will not be eligible for a Grant.**

## SECTION 2: General Information

### Applicant Information:

<b>Project Title:</b> MASTODON TRAIL	
<b>Applicant Name:</b> Alaska Division of Parks and Outdoor Recreation	
<b>Organization Type: (Non-profit, Government agency, Native Corporation, Club, Educational institution)</b>	
<input type="checkbox"/> Non-Profit <input checked="" type="checkbox"/> Government Agency <input type="checkbox"/> Native Corporation <input type="checkbox"/> Club <input type="checkbox"/> Educational Institution <input type="checkbox"/> Business (Snowmobile Trail Grant funding only)	
<b>Contact Name and Title:</b> Brooks Ludwig, Park Superintendent	
<b>Address:</b> 3700 Airport Way	<b>Tax/EIN ID#</b> 92-6001185
<b>City:</b> Fairbanks	<b>State:</b> ALASKA <b>Zip:</b> 99709
<b>Phone:</b> (907)451-2698 <b>Fax:</b> (907)451-2754	<b>email:</b> brooks.ludwig@alaska.gov
<b>Project Location:</b>	
<b>Borough:</b> Fairbanks North Star Borough	
Township 1N      Range 7E      Section 19,29,30,32      Meridian Fairbanks	
Township 1S      Range 7E      Section 5,6,7      Meridian Fairbanks	
Township 1S      Range 6E      Section 1,2,3,10,12      Meridian Fairbanks	
<b>Types of Use (Check All That Apply)</b>	
<input checked="" type="checkbox"/> Bicycling <input type="checkbox"/> All Terrain Vehicles <input checked="" type="checkbox"/> Mountain Bicycling <input type="checkbox"/> Wheelchairs <input type="checkbox"/> Provisions for Disabilities <input type="checkbox"/> Motorcycles <input checked="" type="checkbox"/> Snowshoeing <input type="checkbox"/> Snowmobiling <input checked="" type="checkbox"/> X-Country Skiing <input checked="" type="checkbox"/> Jogging/Running <input checked="" type="checkbox"/> Equestrian <input checked="" type="checkbox"/> Hiking/Walking <input type="checkbox"/> Other _____	

### Trail information:

Miles of new trail to be constructed: 10.5	Miles of trail to be signed: _____
Miles of trail to be maintained: _____	Miles of trail to be groomed: _____
Miles of trail to be reconstructed: _____	Miles of new trails being planned: _____
Dimensions of new trailhead to be constructed/reconstructed: _____	
Miles of inter-connecting travel benefiting from project: 40	

**Public Access Documentation Required:** See instruction guidelines for details.

1. Who are the landowner(s)? List all property owner(s) names, for the entire trail(s)

Private:

Land ownership must meet or exceed 5 years.

a. How long has the landowner(s) authorized access?  Years

Public:

The entire trail is located inside Chena River State Recreation Area which is managed by the state Division of Parks and Outdoor Recreation.

Land ownership must meet or exceed 10 years.

b. How long has the landowner(s) authorized access?  Years

2. Are there legal easements for the trail(s)? (Easement documents and letters of land use authorization **MUST** be included with this application.)

If yes please include as **Attachment E**.

Yes     No    If yes, what is the ADL #

3. Is your application to purchase property?

Yes     No

a. What is the legal description of the property to be acquired?

Township  Range  Section  Meridian

b. Property owner's name(s):

c. Letter from property owner(s) indicating willingness to sell?

Yes     No    If yes, Include Letter as **Attachment F**

### Recreational Trail Grants

Grant Funds Requested: (Total project cost minus match)	Total Project Match:	Total Project Cost: (including match)
\$ 49,975.00	\$ 12,493.75	\$ 62,468.75

(Grant request/80%)\*20%

### Snowmobile Trail Grants

Grant Funds Requested: (Total project cost minus match)	Total Project Match:	Total Project Cost: (including match)
\$	\$ 0.00	\$ 0.00

(Grant request/75%)\*25%

**Project Summary:** Be brief; two or three sentences.

Clear 10.5 miles of trail corridor 6' wide and reshoot the grade and reflag the critical edge in preparation for mechanical construction. Harden 1,117 feet of trail. Add 1,117 feet of geotextile material and cover with 392 cubic yards of gravel. Ditch and elevate 2,160 feet of trail capping with 108 cubic yards of gravel.

**Project Category:** Grants are available in the following five categories. Please mark all the categories you think your project best fits. If your project includes more than one category, for example developing educational materials and hardening a motorized trail, you must apply for two separate grants. See instructions for category descriptions for more information

- Motorized (single use)
- Motorized-Diversified (more than one user group; ATV & Snowmobile)
- Non-Motorized (single use)
- Non-Motorized-Diversified (more than one user group; Hiking & Mt. Biking)
- Diversified (more than one user group; X-country skiing & snowmobiling; hiking and snowmobile use)

### **SECTION 3: Scoring Criteria/Evaluation**

#### **Detailed Project Narrative: 0 to 20 points**

The Northern Area of Alaska State Parks seeks funding to construct 10.5 miles of new trail in Chena River State Recreation Area, 26 miles east of Fairbanks, Alaska. This new trail (Mastodon) will provide safe, year-round access to Nugget Creek public use cabin. The existing access to the cabin crosses the Chena River which can be hazardous due to thin ice or open water, even in late winter. The new alignment will also provide an overland connection to Mist Creek trail and eventually link the very popular Tors Trail to the east forming a 40 mile trail network with three public use cabins / trail shelters.

**BACKGROUND:** From 2003 through 2006 the Chena River State Recreation Area Management Plan went through a substantial public review process. The following recommendations came from that process and serve as a catalyst for this grant application. On page 24, the plan states that several routes are possible and should be considered for the future, such as trails connecting the Mist Creek Trail with the Granite Tors Trail. Future new trails should link to existing trails to create more loop trail opportunities or to extend into new areas." Elsewhere, on page 54, the plan directs Northern Area State Parks to design the Mist Creek Trail for winter and summer non-motorized use and to work with user groups and individuals to expand winter trails and a cabin system for non-motorized users. Finally, on page 47, the plan recommends that trail access to the existing Nugget Creek cabin be improved.

In October 2009, the Northern Area of Alaska State Parks was awarded a grant for technical assistance from the National Park Service, Alaska Region Rivers, Trails, and Conservation Assistance program (RTCA) to assess the Mist Creek trail alignment and identify a sustainable non motorized trail to Nugget Creek cabin in Chena River State Recreation Area.

(Continue additional information on next page)

## Detailed Project Narrative continued:

RTCA technical assistance was provided from October 2009 through September 2010. NPS and park staff spent six days in the field, hiked 55 miles, and laid out and flagged 10.5 miles of trail. 10 8-hour days were spent on post-field analysis, map creation, and report writing.

This grant application will fund phase I of trail construction, clearing a 10.5 mile trail corridor (flagged by RTCA in 2010) 6 feet wide, reshoot the grade and reflag the critical edge of the trail to Nugget Creek public use cabin. It will also harden 1,117 lineal feet of trail. This will be accomplished by adding 1,117 feet of geotextile then covering with 392 cubic yards of gravel. The next 2,160 feet of trail will be cleared with a mini excavator using the ditch and elevate technique. This section from way point 17 to 22 will be capped with 108 cubic yards of gravel. This will complete Phase I and prepare the trail for phase II, full bench mechanized construction.

### MASTODON TRAIL VISION STATEMENT

The Northern Area of Alaska State Parks envisions maintaining the natural character of the Tors Unit while providing a defined land route to the Nugget Creek cabin that improves access to the area and eventually links with Granite Tors Trail to the east forming a 40 mile network of non-motorized trails to three public cabins / trail shelters. This defined land route is referred to as the Mastodon Trail.

### **MAP DOCUMENTATION** (mandatory requirement)

Please attach detailed map(s) that clearly show(s) all adjacent property lines, land ownership, and the location of the proposed trails, facilities, and access points. Please include as **Attachment F** and submit all pertinent documentation. Proposals without adequate documentation will be immediately disqualified.

**Timeline of Proposed Activities: 0 to 15 points**

Use the Timeline Sample form to schedule project tasks. When will the project be started and completed?

Project Manager Name:

**Sample Timeline:** use this form to clearly estimate when project task will be taking place

Estimated Project Start Date:  Estimated Project End Date:

**PROJECT TASKS (Please place dates in parentheses next to project task)**

**Task 1**

**Task 5**

**Task 2**

**Task 6**

**Task 3**

**Task 7**

**Task 4**

**Task 8**

Month	Jan 1	Feb 2	March 3	April 4	May 5	June 6	July 7	Aug 8	Sept 9	Oct 10	Nov 11	Dec 12	Jan 13	Feb 14	March 15	April 16	May 17	June 18	July 19	Aug 20	Sept 21	Oct 22	Nov 23	Dec 24
Task 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Task 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Recreational Trails Grant and Snowmobile Trails Grant Budget Sheets

### **Proposed Budget: 0 to 15 points**

**NOTE 1:** Reimbursable administrative costs may not exceed 7% of the requested grant amount. Administrative costs used as match may not exceed the program's match percentage.

**NOTE 2:** Please do not significantly inflate match beyond what is required. An exaggerated match will not earn the applicant more points and typically creates more work than necessary upon reimbursement.

**NOTE 3:** If on the following pages there is not enough room to include all *Labor, Supplies and Materials, or Equipment* in the designated categories, please list the remainder of those costs in the "Other" column/category. As a check, the applicant is encouraged to add "Grant Funds" plus "Match" to ensure the "Total" cost is correct.

**NOTE 4:** Please be sure to fully explain budget items on page 15 to adequately justify expenditures. All match must be supported and further explained here as well. If applicants are going to use cash donation or labor as match the group providing that match needs to confirm the donation. This can be done through letters of support.

**Note 5:** Labor **hours** and **rates** must be included.

**Recreational Trails Grant & Snowmobile Trails Grant Budget Sheets**  
 (20% Match Requirement and 25% Match Requirement)

Item	Grant Funds	Match	Total Cost	Explanations
<b>LABOR</b>	\$26,250		26,250.00	2,500 / mile trail corridor clearing x 10.5
	\$1,800		1,800.00	reshoot grades / reflag critical edge 40 hours @ \$45/hr.
	\$7,200		7,200.00	Trail hardening (WP 13-17)-1,177' Ditch & Elevate (WP 17-22)-2,160' 160 hours @ \$45/hr. equip. operator
		3,336.00	3,336.00	5 person trail crew 160 hours @\$20.85/hr.
	\$1,500		1,500.00	Per-diem 5 people x 5 days x \$60/day
<b>Supplies &amp; Materials</b>				
	\$5,500		5,500.00	500 cubic yards gravel @ \$11/cu yrd.
	\$900		900.00	1,177 lineal feet geotextile material
<b>Sub Total =</b>	\$43,150	3,336.00	46,486.00	

(Continue additional information on next page)

**Note:** Please refer to page 7 to ensure that an adequate match is met.

Documentation of three quotes must be submitted for budget items exceeding \$1,000. Include as **Attachment G** (must be included with this application).

Item	Grant Funds	Match	Total Cost	Explanations
<b>Equipment</b>				
		6,600.00	6,600.00	Honda 550 Foreman ATV's / Scandic 550 Snow - machines 15 days x 5 @ \$88/day
		675.00	675.00	ATV Belly-dump trailers 15 days x 3 @ \$15/day
		2,625.00	2,625.00	Ford F250 4x4 Crew Cab 15 days @ \$175
		3,800.00	3,800.00	S300 Bobcat Skid-steer 4 weeks @ \$950/wk
		2,600.00	2,600.00	323 Bobcat Mini-Excavator 4 weeks @ \$650/wk.
<b>Land/Easement Acquisition</b>				
<b>Other</b>				
	\$875		875.00	Fuel / Oil- 250 gallons @ \$3.50/gallon
	\$4,000		4,000.00	Misc. parts / supplies /equipment maintenance & repairs- ATV, chainsaws, trailers, snowmachines
	\$750		750.00	39" grading bucket for the 323 bobcat mini excavator
<b>Administration (NTE 7%)</b>	\$1,200		1,200.00	Administration - 1 week @ \$30/hr.
<b>Sub Total =</b>	6,825.00	16,300.00	\$23,125	

\*Please combine sub total amounts from page 12 & 13 for your total grant funds request (put value on page 7)

**Project Funding & Sponsor Match: 0 to 10 points**

This project will be matched using state park equipment, staff and volunteers.

Northern Area State Park staff involved in this project have received many hours of training and experience in proper trail design and construction techniques. Most recently, several staff members have attended:

- Trail Costing Workshop sponsored by Alaska Trails~Aug. 30th – Sept. 3rd, 2010
- Dept. of Interior: Trail Management- Plans, Projects, & People~ Homer 08/09
- BLM: Trail Layout & Design Workshop~ Glennallen 06/09
- Alaska Recreation and Parks Association Trail Conference~ Anchorage 03/09

State Park equipment used for the match on this project includes a Bobcat skid-steer, Bobcat Trail Excavator, Sweco trail dozer, 1 tracked carrier, 4 Honda ATV's, 4 Skidoo Scandic snowmobiles, 1 Polaris ORV, 3 tag along belly dump ATV trailers, and all hand tools required. A 3/4 ton crew cab pick-up and 4 place floe trailer will be used to trailer equipment and crews to and from the trail head.

**Public Benefit: 0 to 10 points**

1. Why is the project important and needed?

This trail assistance will allow State Parks to address public comments identified in the 2006 Chena River State Recreation Area Master Plan, the Division of Parks & Outdoor Recreation Ten-Year Strategic Plan 2007-2017, and the Statewide Comprehensive Outdoor Recreation Plan 2004-2009.

2. How will the public benefit?

The relocation of the trail will provide a safe, sustainable year-round trail and reduce erosion by eliminating the steep Mist Creek alignment. The benefits of this trail will be to provide a network of trail loops and cabin hopping opportunities.

3. List the type of users you expect to benefit from this project.

The current trail is virtually unusable by anyone other than those willing to ford chest deep water in the Chena River or portage a canoe 300 yards then cross the river. By providing a well-designed and well-constructed year-round trail, people of all ages and skill levels will be able to use the trail.

4. How many users?

The Chena River State Recreation Area is one of Fairbanks favorite recreation destinations and has an annual visitor count of 150,000. According to a 2006 UAF Visitor Use Survey, of Fairbanks North Star Borough residents, 50% had visited the Chena River SRA (page 11). The phone survey also noted that hiking was the favorite activity (page 9).

5. How does this project provide new recreational opportunities?

According to the Statewide Comprehensive Outdoor Recreation Plan, one of the highest priorities for communities is public use cabins. A summer trail would greatly benefit access to these public use cabins and link the very popular Tors Trail to the east forming a 40 mile trail network with three public use cabins / trail shelters.

6. Does your project solve a recreational problem?

Yes. This is the first sustainable non-motorized trail in Chena River State Recreation Area open to mountain bikes. It is also the first time people will be able to bike to a public use cabin in the non-motorized portion of Chena River State Recreation Area.

7. Does your project provide a missing recreational trail link or offer connectivity between trail systems?

Yes  No

If yes, please explain:

This new trail will provide longer non motorized trail and cabin hopping opportunities. There are only 6 trails in Alaska that offer 30 mile or greater hikes. This new trail will connect the non motorized area within the Chena River State Recreation Area and provide a myriad of hiking / camping options.

8. Is your project identified within the Statewide Comprehensive Outdoor Recreation Plan?

Yes  No

If yes, provide the pertinent quote or language in the Statewide Comprehensive Outdoor Recreation Plan?

There is a heavy demand for multi-use, well-built, trails in Interior Alaska. According to the Statewide Comprehensive Outdoor Recreation Plan (2009), the highest priority for the State is to "rehabilitate, upgrade, or expand trails". The SCORP also states "one of the highest priorities for communities is public use cabins".

9. Will your project utilize youth development groups to provide labor or assistance?

Yes  No

If yes, provide details:

AmeriCorps volunteers will help spread gravel along the first 3,277 feet of trail. We also have several college interns and Alaska Conservation Corps employees that will be assisting with trail clearing and hardening.

10. Will your project provide for people with disabilities?

Yes  No

If yes, provide details:

The current trail is virtually unusable by anyone other than those willing to ford chest deep water in the Chena River or portage a canoe 300 yards then cross the river. By providing a well-designed and well-constructed year-round trail, people of all ages and skill levels will be able to use the trail.

Note: In order to receive full point value for questions 9 and 10, the applicant should clearly demonstrate how they intend to incorporate youth development or handicap accessibility into their project. Supporting documentation must be shown in the project narrative, budget, and/or timeline.

**Community Support: 0 to 25 points**

Is your project included in a local land use plan?       Yes       No

If so, please provide pertinent language and source.

2006 CRSRA Management Plan made the following recommendations: 1) Improve access to Nugget Creek Cabin, 2) Provide summer access to Mist Creek Trail, and 3) work with user groups to expand winter trails and a cabin system for non-motorized users.

Are there any project issues or community opposition?

This trail assistance will allow State Parks to address public comments identified in the 2006 Chena River State Recreation Area Master Plan, the Division of Parks & Outdoor Recreation Ten-Year Strategic Plan 2007-2017, and the Statewide Comprehensive Outdoor Recreation Plan 2004-2009.

How did you address the project opposition?

none encountered. In a 2010 on-line survey of 181 people, 92% supported constructing a sustainable trail to Nugget Creek Cabin and 86% supported a trail network with shelters.

Public Notice posting locations & dates:

On 05/06 the Fairbanks Daily News Miner published an article about the trail proposal and upcoming open house held in Fairbanks. 19 people signed in. An on-line survey drew 180 responses. Public Notices were posted 10/15/2010 in the Two Rivers community at Pleasant Valley Store, the U.S. Post Office, and Soapy Suds Laundromat.

Provide Sample of Public Notice on the following page. It is preferred that the applicant use this format to post at popular public locations (Post office, local market, library, City Hall, etc.)

**Public Notice  
Trail Grant Program**

The Alaska State Trails Grant applicant listed below provides this courtesy notice. If you have any questions or comments about the proposed grant application, please contact the grant applicant. Grant applicants should post this notice for at least three weeks prior to the application deadline.

Posting Date:

**1. Grant Applicant Contact Information:**

Name of Organization or Agency:

Contact Person:

Mailing Address:

Phone:  Fax:

Email:

**2. Project Title:**

**3. Project Description:**

The Northern Area of Alaska State Parks seeks funding to construct 10.5 miles of new trail in Chena River State Recreation Area, 26 miles east of Fairbanks, Alaska. This new trail (Mastodon) will provide safe, year-round access to Nugget Creek public use cabin. The existing access to the cabin crosses the Chena River which can be hazardous due to thin ice or open water, even in late winter. The new alignment will also provide an overland connection to Mist Creek trail and eventually link the very popular Tors Trail to the east forming a 40 mile trail network with three public use cabins.

**4. Project Location:**

a. Identify the nearest community(ies)

b. **Attach a map** showing the location of your proposed project (page two of this notice)

c. Provide the meridian, township(s), range(s) and section(s) from a USGS topographical map.

**Sponsor Commitment:**

Project manager: Brooks Ludwig, Park Superintendent / Field Manager: Ian Thomas, Chief Ranger

Project manager Phone/Email: (907)451-2698 brooks.ludwig@alaska.gov

Applicant Name: State Division of Parks and Outdoor Recreation

Mailing Address: 3700 Airport Way Fairbanks, AK. 99709

Phone: (907) 451-2698

Alternate Phone: (907) 322-3882

Fax: (907) 451-2754

Email: brooks.ludwig@alaska.gov

**Long-term maintenance plan:**

Long-term maintenance will continue to be funded and performed by Alaska State Parks using permanent staff and volunteers. Routine trail monitoring and maintenance will continue to be done by the CRSRA Park Ranger I and the summer trail crews. The maintenance standards for Mastodon Creek Trail will meet or exceed those of the other trails managed by State Parks in the CRSRA.

**Past Grant Performance:**

List the trails-related grants that you have received for other projects in the past. Include project title, grant project number and award year.

1. Compeau Connector, #10795881, awarded 2008
2. Stiles Creek Trail Hardening, #10795859, awarded 2008
3. Colorado Ridge Trail, #10795776, awarded 2006
4. Stiles Creek Trail Re-Route, # 1079775, awarded 2006
5. Granite Tors Trail Fire Rehabilitation # 10795634 awarded 2005
6. Chena Hot Springs Winter Trail Clearing/Upgrade, # 1079550, awarded 2004

## Grant Checklist for State Agency Review

Applicants must complete & attach this checklist (if applicable to project scope of work) and provide the requested information within the application for it to be considered eligible for funding.

**This checklist is required for any project that involves ground-disturbing activities.**

### **Check One**

1. Office of Project Management and Permitting/Alaska Coastal Management Program (ACMP).  
Is your project within the coastal zone?

Project site is not located within the Coastal Zone Management Area.

Yes, a Coastal Consistency Determination *is required*

2. Department of Fish and Game, Division of Habitat (ADF&G)  
a. Does your project require a Fish Habitat Permit?

Permit obtained, attach documentation

Permit in process

Permit not required

b. Is the project area within a Fish and Game management unit, such as a State Game Refuge, Critical Habitat Area or Sanctuary?  Yes  No

3. Division of Mining Land & Water (ML&W)

If the project is on state lands the applicant will need permission from the state land office.

Permit/authorization obtained; *attach documentation.*

Permit/authorization in process; *attach application copy.*

Permit/authorization not required; *attach documentation from agency.*

4. Land Water Conservation Fund (LWCF)

Is your project on a LWCF site?

LWCF site is not affected.

Project will have 6(f)(3) impact, but will not constitute a conversion of use under LWCF; No further coordination is required.

Project constitutes a conversion of use; *Attach documentation.*

## Grant Checklist for State Agency Review (continued)

### 5. Office of History and Archaeology

- Conducted site location research for historic and/or cultural properties; *Attach documentation*
- Archaeological/cultural survey required
- Archaeological/cultural survey not required; *attach documentation from authorizing agency.*

### 6. National Environmental Policy Act (NEPA); categorical exclusion checklist

- Environmental Review Checklist; *Attach completed ERC.*  
*(Please contact the State Trails office to verify if this document is required)*
- Categorically Excluded per Programmatic Agreement.

### 8. Division of Labor Standard & Safety

Project requires a contract for services/construction?  Yes  No

### 9. Army Corp of Engineers

Does the project involve wetlands or bodies of water?  Yes  No

### 10. Land management plan (check all that apply)

- Project identified in Local Land Management Plan; *If yes, provide pertinent quote/language in the Local Land Management Plan . (Page 17, Community Support)*
- Project Identified in Statewide Compressive Outdoor Recreation Plan (SCORP); *If yes, provide pertinent quote/language in the SCORP. (Page 15, Question 8)*
- Project not identified in a local land management plan.

### **Required Information**

**Attachment A:** Letters of support from local governing body.

**Attachment B:** Letters of support from local community organization

**Attachment C:** Authorization from all landowner(s) for project work whose land the project crosses.

**Attachment D:** Documentation of any legal easements for the trail(s).

**Attachment E:** Letter from property owner(s) indicating willingness to sell.

**Attachment F:** Map documentation

**Attachment G:** Documentation of 3 quotes for budget items exceeding \$1,000

**Attachment H:** Any documentation by the State Agency review process already obtained

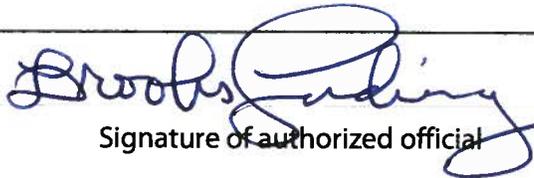
## END OF APPLICATION

Please print two copies of this application. Keep one for your records and submit the second copy with attachments via standard mail to:

Bill Luck  
Alaska State Trails Program  
550 W. 7th Ave, Suite 1380  
Anchorage, Alaska 99501

\* Please be sure that all attachments are submitted with each project proposal sent by mail.

**Certifying Signature:** The signature below indicates approval of this project and authorizes this request for funding from the applying organization.

  
Signature of authorized official

Brooks Ludwig

Printed or typed name of authorized official

Park Superintendent

Title

Northern Area, Division of Parks and Outdoor Recreation

Agency/Organization

Please note that project applications must be submitted and postmarked no later than November 15 of each year for the Recreational Trails Program grants and July 1 of each year for Snowmobile Trails Grants.

ANY PROPOSALS EXCEEDING 50 PAGES WILL BE DEDUCTED 5 POINTS.



## Northern Area Alaska State Parks Citizen Advisory Board

3700 Airport Way Fairbanks, Alaska 99709-4609 (907) 451-2695

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October 19, 2010

Recreational Trails Grant Program  
Division of Parks & Outdoor Recreation  
550 W 7<sup>th</sup> Ave., Suite 1380  
Anchorage, AK. 99501-3561

To Whom It May Concern:

The Chena River State Recreation Area has seen a substantial increase in visitor days in recent years. Increased energy costs have lead to many people participating in their recreation endeavors close to home. The Chena River State Recreation Area serves as an area where Alaskans can participate in a wide variety of recreational opportunities and still be relatively close to home. Also, this recreation area is a destination where visitors to the state can experience the boreal forest and the wildlife that exist in this unique environment.

Many of the existing trails within the recreation area were never designed to sustainably support multiple types of recreational uses. Some of the trails were originally constructed by miners who were trying to gain access to their claims. These trails are not sustainable and some are degrading to the point where they pose significant safety issues. Also, because of the increased number of visitor days, new areas need to be developed to accommodate more users. This will spread out the use so individual areas do not see as much impact.

The Northern Area of the Alaska State Parks has worked to accommodate the increased use of the recreation area by planning for extensions of existing trails and development of new ones. They have prioritized the areas that are in need of attention and identified the most important for the recreation area. The Stiles Creek Extension Re-Route and the Mastodon Trail are ranked among the highest priority projects that meet the needs of the recreation area and the users.

The Citizen Advisory Board (CAB) of the Northern Area Alaska State Parks supports these projects. The CAB also identified them as two of the most important projects to continue to serve the needs of the recreational user. These projects will open up new areas for non-motorized users as well as improve trail conditions and safety for multiple-use trail users. The CAB hopes that the Recreational Trails Grant Program will look favorably on these two worthy endeavors when deciding on what projects to grant funding to.

Sincerely,

Jim Williams  
Chairman Northern Area Citizens Advisory Board



9 November 2010

Bill Luck, State Trails Coordinator  
Alaska Division of Parks and Outdoor Recreation  
550 W 7th Ave, Suite 1380  
Anchorage AK 99501-3561

Dear Mr. Luck,

Alaska Trails, a statewide trails education and advocacy nonprofit, supports the two grant applications by the Northern Area of Alaska State Parks: Mastodon Trail and the Stiles Creek Extension projects.

State Parks has invested a considerable amount of time and effort in the conceptual development of the Mastodon Trail. They have held public scoping sessions, formed partnerships with the NPS Rivers, Trails, Conservation Assistance program, and determined a preliminary trail corridor. The construction of 10.5 miles of non-motorized/multi-use trail in this area of the Chena River State Recreation Area (CRSRA) will have the added benefit of linking to adjacent trails and makes good use the existing recreational potential.

The Stiles-Colorado Creek Trail is an extremely popular recreational trail system in the CRSRA and the hardening and re-alignment of the Stiles Creek Extension is a well deserved project. This maintenance project will transform a very marginal 4.5 trail into a sustainable curvilinear route that will attract both motorized and non-motorized recreational users. It also links to adjacent trails and makes good use of the existing recreational potential.

Both these projects propose using sustainable trail design principles that will leverage the funds spent. Alaska Trails strongly supports the Northern Area of Alaska State Parks grant request for the Mastodon Trail and Stiles Creek Extension projects.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Orth".

Geoffrey Orth, Board President

Enhancing the Alaska trail experience by supporting sustainable, world-renowned trails through advocacy and education

P.O. Box 100627 Anchorage, AK 99510 Ph: 907-334-8049 Email: [office@alaska-trails.org](mailto:office@alaska-trails.org)  
[www.alaska-trails.org](http://www.alaska-trails.org)



# Fairbanks North Star Borough

809 Pioneer Road

P.O. Box 71267

Fairbanks, Alaska 99707-1267

907/459-1000

[www.co.fairbanks.ak.us](http://www.co.fairbanks.ak.us)

November 9, 2010

State Trails Coordinator  
Recreational Trails Grant Program  
Division of Parks and Outdoor Recreation  
550 W 7<sup>th</sup> Ave., Suite 1380  
Anchorage, AK. 99501-3561

**Re: Mastodon Trail Grant Application - Letter of Support**

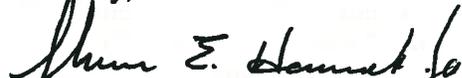
To Whom It May Concern:

The Fairbanks North Star Borough (FNSB) Department of Parks and Recreation supports the Alaska State Parks, Northern Area, grant application for the construction of the new Mastodon Trail within the Chena River State Recreation Area.

The new Mastodon Trail will provide a safe alternative year-around access to a public use cabin area at Nugget Creek, giving recreational trail enthusiasts the opportunity to avoid a hazardous ice/open-water crossing of the Chena River system. The new Mastodon Trail will provide recreational trail enthusiasts the opportunity to enjoy activities such as mountain biking, skiing, horseback riding, hiking, and dog-mushing, to name a few.

The Chena River State Recreation Areas new Mastodon Trail will eventually link to an ever expanding network of popular recreational trails, and provide safety, health, and social value to visitors of the Chena River State Recreation Area. The FNSB Department of Parks and Recreation urges your support of this grant application.

Sincerely,

  
Thomas E. Hancock, Jr., Trails Coordinator  
Department of Parks and Recreation  
Fairbanks North Star Borough

Cc: Brooks Ludwig, Park Superintendent, Northern Area: Alaska State Parks



## INTERIOR TRAILS PRESERVATION COALITION

---

# ITPC

Tuesday, November 9, 2010

To Whom It May Concern:

The Interior Trails Preservation Coalition supports the efforts of the Northern Area office of Alaska State Parks and Recreation to obtain grants for the Mastodon and Stiles Creek Extension trails in the Chena River State Recreation Area. The ITPC is happy to see these projects being addressed.

### Mastodon Trail

A lot of interior Alaska trail users are already anticipating construction of Mastodon Trail. Many years have passed since a new non-motorized trail has been built in the recreation area. The location selected for this trail is excellent. It will give trail users year-round access to Nugget Creek Public Use Cabin with another cabin being planned elsewhere along the non-motorized trail system. The new trail will also eventually provide access to the popular Granite Tors Trail, giving non-motorized trail users more trip options. And while non-motorized trails in the recreation area are primarily for foot traffic, this new trail will be built to accommodate a wide variety of non-motorized users, including mushers, mountain bikers, and horseback riders.

### Stiles Creek Extension Trail

The planned improvements to the Stiles Creek Extension Trail are an excellent idea. The current trail is wet down low and steep on its climb up the hill. The Stiles Creek Trail is already tremendously popular with many types of trail users, and improvements to that trail have been extremely well received. Improving the extension trail will make it usable for a broader range of trail users as well as give trail users of all types more options for trips. The Stiles Creek Extension Trail has also been identified as a site for a possible public use cabin. Such a cabin, along with the trail improvements, would allow another overnight option for trail users.

The Chena River State Recreation Area is already a tremendous asset to the Interior's residents and visitors. It enhances quality of life by adding to the outdoor recreational opportunities and increases tourism by offering an attractive destination. These trail improvements will make the area even more attractive.

Sincerely,

Eric Troyer  
Vice President

ITPC

P.O. Box 74263, Fairbanks, AK 99707

Phone: (907) 458-7968



711 Sheep Creek Road  
Fairbanks AK 99709  
907-455-7148

I would like to voice my support of the Mastodon Trail. This new trail will provide great, safe summer and winter access to the existing public use cabin and aligns nicely with future trail development in the area. These trails provide great opportunities for outdoor recreation that benefits the public. Getting people outside is great for their mental and physical health in a society that is increasingly sedentary.

Funding is critical to be able to properly design and construct trails to last. Many of the older poorly designed trails erode away. We need to move forward with properly designed trails like the Mastodon trail that are built to last.

My business depends on availability of trails like this to stimulate more people to ride and ski more often. This in turn allows me to employ more people and continue to support trail development.

Joel Buth

Owner of Goldstream Sports

## **Ludwig, Brooks A (DNR)**

---

**From:** Mike Kramer [mkramer@bnblaw.com]  
**Sent:** Monday, October 25, 2010 9:46 AM  
**To:** Ludwig, Brooks A (DNR)  
**Subject:** Letter of Support for Chena Rec Area trail projects

Brooks, As an avid trail user, I support expansion of the trail system in the Chena Rec Area. I understand the Mastodon Creek Trail and the Stiles Creek extension are two projects that are currently in need of grant money to move forward.

These projects would improve the trail network for both motorized and non motorized users. Making more loops and interconnected trails greatly facilitate multi day trip options and will help ensure the public use cabins are utilized more often.

I encourage State Parks to continue its efforts to improve this trail network.

---

**Michael C. Kramer**  
Borgeson & Burns  
Key Bank Center  
100 Cushman St. Suite 300  
Fairbanks, Alaska, 99701  
(907) 452-1666  
[mkramer@bnblaw.com](mailto:mkramer@bnblaw.com)

## **TRAIL PLANNING HISTORY**

### **Chena River State Recreation Area Management Plan Direction**

The 2006 *Chena River State Recreation Area Management Plan* does not specifically identify any new trails for the area; however, it does provide indirect justification for the proposed Mastodon Trail through its recommendations. On page 24, the plan states that “several routes are possible and should be considered for the future, such as trails ... connecting the Mist Creek Trail with the Granite Tors Trail. Future new trails should link with existing trails to create more loop trail opportunities or to extend access into new areas.” Elsewhere, on page 54, the plan directs Northern Area State Park to design the Mist Creek Trail for winter and summer non-motorized use and to work with user groups and individuals to expand winter trails and a cabin system for non-motorized users. Finally, on page 57, the plan recommends that trail access to the existing Nugget Creek cabin be improved.

These recommendations served as a catalyst for the Northern Area State Park proposal for the Mastodon Trail. The Mastodon Trail will implement these plan recommendations, providing a sustainably designed and constructed year-round trail that will substantially improve access for people of all ages and skill levels.

### **Public Outreach and Support**

The 2006 update of the *Chena River State Recreation Area Management Plan* involved several rounds of public review and many meetings and workshops that gave the public an opportunity to comment on plan proposals, including those recommendations highlighted above. Since that time, improvements made on other trails in the area have increased public support for trail development and the public has been kept abreast of recreation area trail projects through regular media releases. The Northern Area State Park Citizen Advisory Board (Northern Area CAB), a diverse group of trail users who assist recreation area staff with management and development issues, has been an important conduit for public participation and opinion, conveying ideas and concerns to and from park staff.

The proposed Mastodon Trail has the full support of the Northern Area CAB. In recent years, Northern Area CAB members, Tom Paragi and Dave Payer, have been instrumental in carrying forward the proposal. Both have researched a number of routes for the Mastodon Trail that would link the Tors Trail to the Mist Creek Trail and improve access to the Nugget Creek cabin. They conducted reconnaissance for these routes during the winter of 2007 and spring of 2008 and drew up a map reflecting their findings, including a potential shelter location. For the past several years additional volunteers have scouted and flagged alternative trails to the Nugget Creek cabin.

In 2010, Northern Area State Parks began a formal public involvement process to solicit input on the trail proposal. A video-conference was hosted on March 11 in Fairbanks by the Northern Area CAB and RTCA. Key stakeholders were invited to discuss the Mastodon Trail and receive training on sustainable trail design and construction and trail management objectives. Two Northern Area CAB members and three Northern Area State Park staff attended. Due to technical difficulties with the video-conferencing, however, the training component was rescheduled to March 23 when Kevin Meyer, Alaska NPS Regional Trails Specialist, could present the materials in person. At that later meeting, ten Northern Area CAB members, three Northern Area State Park staff, and seven visitors attended.

On May 6, the *Fairbanks Daily News Miner* published an article about the trail proposal and upcoming public open house hosted by the Northern Area CAB. The open house, held on May 12 in Fairbanks, gave the wider public an opportunity to learn more about the trail proposal and provide feedback. Nineteen people signed in at this open house.

As part of its public outreach, Northern Area State Park also set up an on-line survey for public input, with questions about the Mastodon Trail. The trail received broad public support in the on-line survey. Of the 181 people who completed the survey, more than 91% support building a sustainable trail to Nugget Creek cabin. Most survey takers (48%) selected hiking as the principal type of access they'd use the trail for, with skiing and bicycling selected by the next highest percentage of survey takers (16% each). Sixty-one percent of those surveyed supported opening the trail to bicycles. Ninety-five percent of those surveyed support a trail network with shelters in the Tors Management Unit.

On June 24, 2010, the *Fairbanks Daily News Miner* published an article noting that "after receiving overwhelming support, Alaska State Parks is going ahead with a plan to build a new non-motorized trail in the Chena River State Recreation Area." The article described the work done in June by RTCA trail specialists and Chena River State Recreation Area trail crews to layout and flag a conceptual trail corridor.

## New Trail Proposal in Non-Motorized portion of Chena River State Recreation Area [Edit](#)

Default Report + Add Report

### Response Summary

Total Started Survey: 181  
Total Completed Survey: 181 (100%)

PAGE: DEFAULT SECTION

#### 1. Which trail option do you support?

[Create Chart](#) [Download](#)

	Response Percent	Response Count
Existing access is suitable (status quo / no change)	8.1%	14
Build sustainable trail to Nugget Creek Cabin	91.9%	159
	answered question	173
	skipped question	8

#### 2. Under 11AAC 20.490 bicycles are only allowed in Chena River State Recreation Area in campgrounds and the following areas: 1.) Chena Dome Trail, 2.) picnic areas, and 3.) trails described as open to off-road vehicles. Do you support changing regulations to open the new trail to bicycles?

[Create Chart](#) [Download](#)

	Response Percent	Response Count
Yes, I support opening the trail to bicycles	60.7%	108
No, I do not support changing the use in the area by opening the trail to bicycles.	39.3%	70
	answered question	178
	skipped question	3

#### 3. What is the principle type of access you would use on this trail? (CHOOSE ONE)

[Create Chart](#) [Download](#)

	Response Percent	Response Count
Dog Team	4.4%	8
Skijor	5.6%	10
Cross Country Ski	16.1%	29
Snowshoe	1.1%	2
Horse	9.4%	17
Bicycle	15.6%	28

Hike	<input type="checkbox"/>	47.8%	86
		answered question	180
		skipped question	1

4. What other type(s) of access would you use on this trail?

[Create Chart](#) [Download](#)

		Response Percent	Response Count
Dog team	<input type="checkbox"/>	9.8%	17
Skijor	<input type="checkbox"/>	16.8%	29
Cross Country Ski	<input type="checkbox"/>	50.3%	87
Snowshoe	<input type="checkbox"/>	34.1%	59
Horse	<input type="checkbox"/>	9.2%	16
Bicycle	<input type="checkbox"/>	29.5%	51
Hike	<input type="checkbox"/>	56.6%	98
		answered question	173
		skipped question	8

5. Do you agree with Alaska State Parks Vision Statement?

[Create Chart](#) [Download](#)

		Response Percent	Response Count
Agree	<input type="checkbox"/>	94.8%	164
Disagree	<input type="checkbox"/>	5.8%	10
		answered question	173
		skipped question	8

6. If you disagree with Alaska State Parks Vision Statement. Please tell us what you would like to see.

[Download](#)

		Response Count
	 Show replies	12
		answered question
		12
		skipped question
		169

7. Do you support a trail network with shelters in the non-motorized Tors unit?

[Create Chart](#) [Download](#)

		Response Percent	Response Count
Yes I support a trail network with shelters.	<input type="checkbox"/>	94.8%	165
No I do not support a trail network with shelters.	<input type="checkbox"/>	5.2%	9
		answered question	174
		skipped question	7

8. Please check the following age bracket that applies.

[Create Chart](#) [Download](#)

	Response Percent	Response Count
0 - 10	0.0%	0
10 - 20 <input type="checkbox"/>	1.7%	3
20 - 30 <input type="checkbox"/>	13.5%	24
30 - 40 <input type="checkbox"/>	18.5%	33
40 - 50 <input type="checkbox"/>	20.8%	37
50 - 60 <input type="checkbox"/>	32.0%	57
60 - + <input type="checkbox"/>	14.0%	25
<b>answered question</b>		<b>178</b>
<b>skipped question</b>		<b>3</b>

9. What is your gender?

[Create Chart](#) [Download](#)

	Response Percent	Response Count
Male <input type="checkbox"/>	50.0%	89
Female <input type="checkbox"/>	50.0%	89
<b>answered question</b>		<b>178</b>
<b>skipped question</b>		<b>3</b>

10. Do you live in the Fairbanks North Star Borough?

[Create Chart](#) [Download](#)

	Response Percent	Response Count
yes <input type="checkbox"/>	97.2%	174
no <input type="checkbox"/>	2.8%	5
<b>answered question</b>		<b>179</b>
<b>skipped question</b>		<b>2</b>

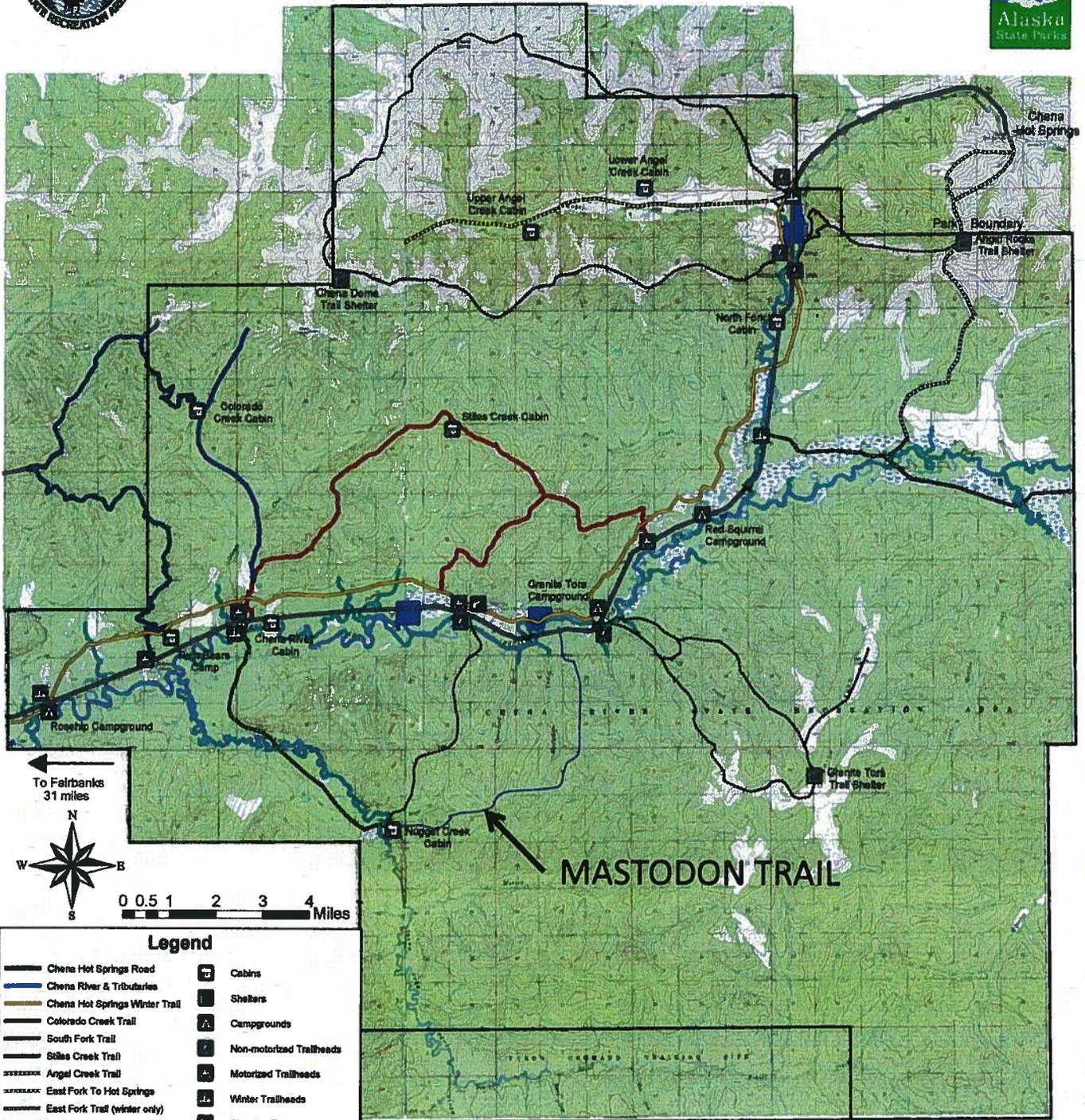
11. Are there any other comments / suggestions you'd like to make?

[Download](#)

	Response Count
Show replies	70
<b>answered question</b>	<b>70</b>
<b>skipped question</b>	<b>111</b>



# Chena River State Recreation Area



To Fairbanks  
31 miles



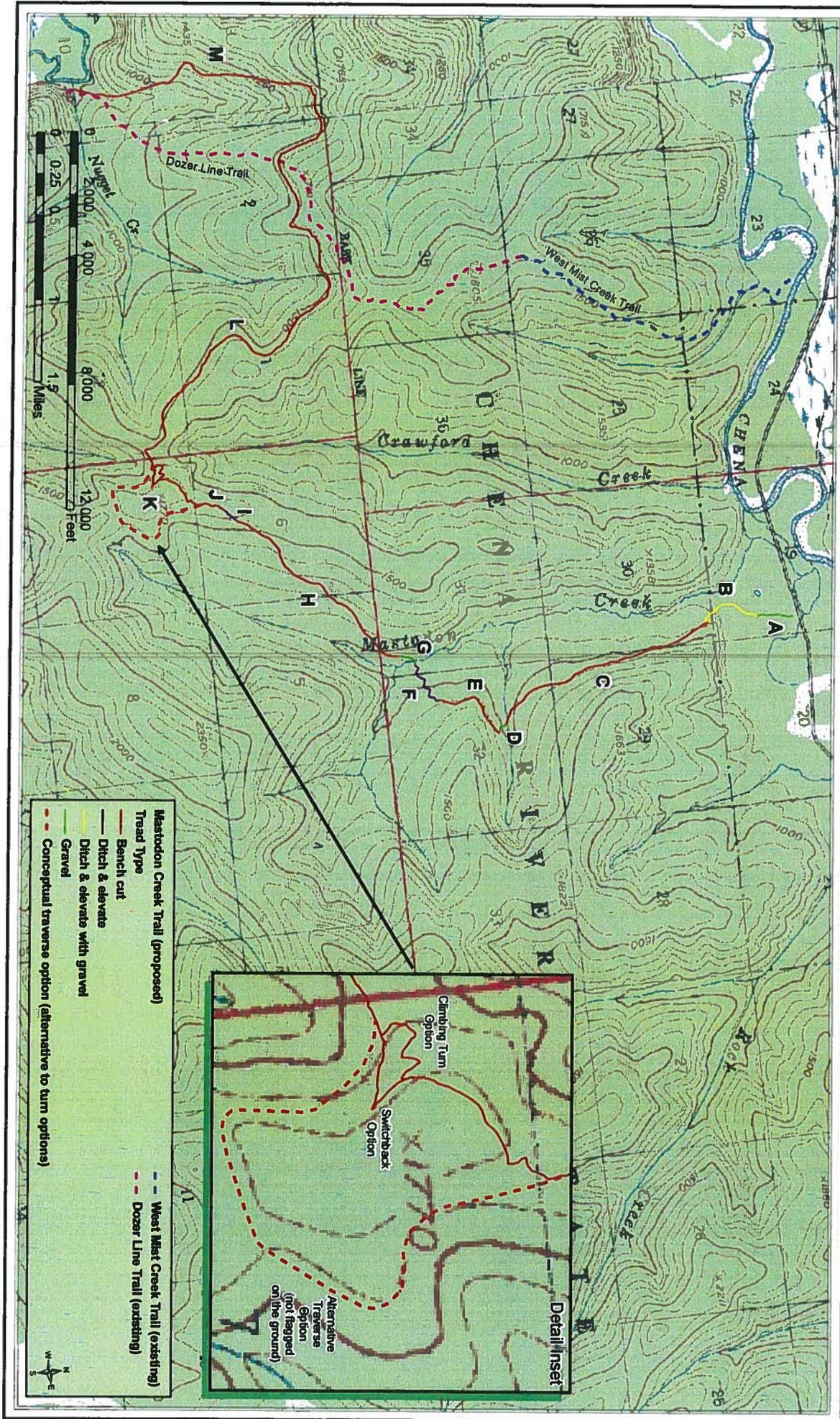
0 0.5 1 2 3 4 Miles

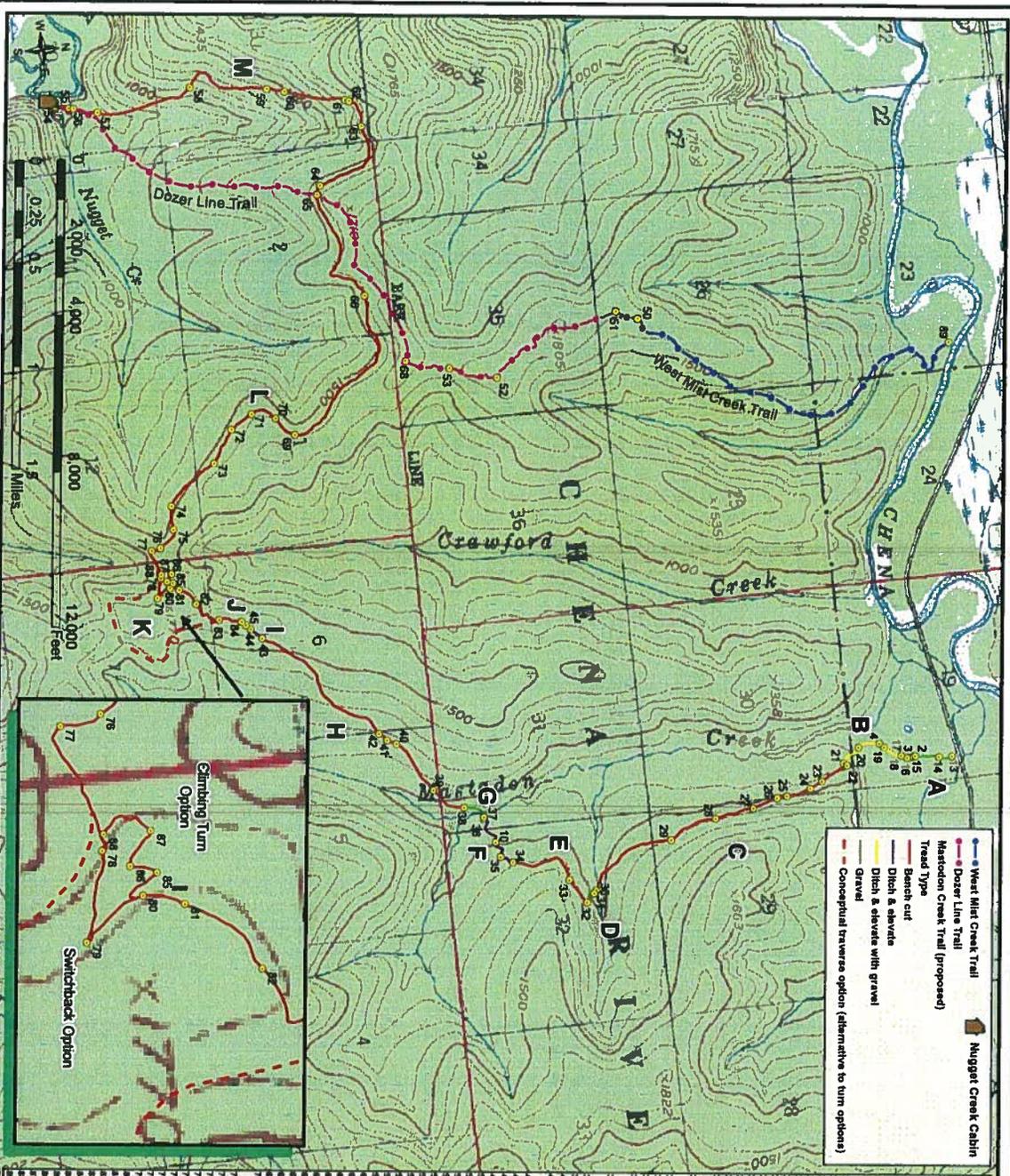
**MASTODON TRAIL**

Legend			
	Chena Hot Springs Road		Cabins
	Chena River & Tributaries		Shelters
	Chena Hot Springs Winter Trail		Campgrounds
	Colorado Creek Trail		Non-motorized Trailheads
	South Fork Trail		Motorized Trailheads
	Stiles Creek Trail		Winter Trailheads
	Angel Creek Trail		Shooting Range
	East Fork To Hot Springs		Bridges
	East Fork Trail (winter only)		Military Land (permit needed)
	Compass Trail		
	Little Chena Dozer Line		
	Trail (non-motorized)		
	Private Property		



Proposed layout provided by:  
National Park Service  
Rivers, Trails & Conservation Assistance





Trail Type	Symbol
West Mill Creek Trail	Blue line with dots
Dozer Line Trail	Red line with dots
Mastodon Creek Trail (proposed)	Red line with squares
Bench cut	Yellow line
Ditch & elevate with gravel	Orange line
Gravel	Green line
Conceptual traverse option (alternative to turn options)	Dashed red line

Station	Notes	Grade %
1	Creek crossing	
2	North edge of burn, on small bank, inward look, method at surface	
3	Hot burn, flat, moderate slope	
4	Hot burn, flat, moderate slope	
5	Hot burn, flat, moderate slope	
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7	Hot burn, flat, moderate slope	
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81	Hot burn, flat, moderate slope	
82	Hot burn, flat, moderate slope	
83	Hot burn, flat, moderate slope	
84	Hot burn, flat, moderate slope	
85	Hot burn, flat, moderate slope	
86	Hot burn, flat, moderate slope	
87	Hot burn, flat, moderate slope	
88	Hot burn, flat, moderate slope	
89	Hot burn, flat, moderate slope	
90	Hot burn, flat, moderate slope	
91	Hot burn, flat, moderate slope	
92	Hot burn, flat, moderate slope	
93	Hot burn, flat, moderate slope	
94	Hot burn, flat, moderate slope	
95	Hot burn, flat, moderate slope	
96	Hot burn, flat, moderate slope	
97	Hot burn, flat, moderate slope	
98	Hot burn, flat, moderate slope	
99	Hot burn, flat, moderate slope	
100	Hot burn, flat, moderate slope	



# Trail Management Objectives (TMO)

**\* D R A F T \***

Rev. Date:  
1/12/2007

Area:

Park Unit:

District:

Trail Name:

Trail ID:

Trail Beginning Termini:

Beg. Milepost:

Trail Ending Termini:

End. Milepost:

Trail Inventory Length:  Miles

Trail Mileage Source:  Wheel

GPS

Map

Unknown

## TMO Trail Section (if applicable)

Section Beg. Termini:

Beg. Milepost:

Sec.#

Section End. Termini:

End. Milepost:

## Designed Use Objectives

Trail Type

(Check one)

- Terra Trail
- Snow Trail
- Water Trail

Trail Class

(Check one)

- 1 (Primitive/Undeveloped)
- 2 (Simple/Minor Development)
- 3 (Developed/Improved)
- 4 (Highly Developed)
- 5 (Fully Developed)

### Difficulty Rating

(Check one)

- Easiest (white circle)
- Easy (green circle)
- Intermediate (blue square)
- Difficult (black diamond)
- Most Difficult (dbl diamond)

### Elevation Chg

+ or - Feet

### Level of Use

- Low (0-10 per day)
- Moderate (10-100 / day)
- High (100+ per day)

Est  Act  Counter

### Designed Use

(Check one)

- Hiker / Pedestrian
- Pack & Saddle
- Bicycle
- Wheelchair (ADA stds)
- Motorcycle
- All Terrain Vehicle (ATV)

- Cross-Country Ski
- Snowmachine
- Snowshoe
- Dog Sled
- Skijoring

- Watercraft - Non Motorized
- Watercraft - Motorized

### Design Parameters

(Fill in all that apply)

Basic Tread Width, inches

Clearing Width, feet

Clearing Height, feet

Backslope: 1/1, 2/1, 1/2

Target Grade, %  
( >95% of trail )

Max. Sustainable Grade, %  
for distance (ft)

Turn Radius Min, ft

### Target Frequency

Maintenance per Year

(Fill in all that apply)

Trail Opening

Tread Repair

Drainage Cleanout

Logging Out

Brushing

Snow Trail Grooming

Condition Survey



# Trail Management Objectives

## Trail Use Strategies

Managed Use		Season	
(Fill in all that apply)		From	To
		(mm/dd)	(mm/dd)
<input checked="" type="checkbox"/>	Hiker / Pedestrian	5/15	10/15
<input checked="" type="checkbox"/>	Pack & Saddle	5/15	10/15
<input checked="" type="checkbox"/>	Bicycle	5/15	10/15
<input type="checkbox"/>	Wheelchair		
<input type="checkbox"/>	Motorcycle		
<input type="checkbox"/>	All Terrain Vehicle (ATV)		
<input type="checkbox"/>	_____		
<input checked="" type="checkbox"/>	Cross-Country Ski	10/15	4/20
<input type="checkbox"/>	Snowmobile		
<input type="checkbox"/>	Dog Sled		
<input type="checkbox"/>	Skijoring		
<input type="checkbox"/>	_____		
<input type="checkbox"/>	Watercraft - NonMotorized		
<input type="checkbox"/>	Watercraft - Motorized		

Prohibited Use		From	To
(Check if applicable)		Date	Date
		(mm/dd)	(mm/dd)
<input checked="" type="checkbox"/>	All Motorized Use		
(Or, fill in all that apply)			
<input type="checkbox"/>	Hiker / Pedestrian		
<input checked="" type="checkbox"/>	Pack & Saddle	20-Apr	14-May
<input checked="" type="checkbox"/>	Bicycle	4/20	5/14
<input type="checkbox"/>	Wheelchair		
<input type="checkbox"/>	Motorcycle		
<input type="checkbox"/>	All Terrain Vehicle (ATV)		
<input type="checkbox"/>	_____		
<input type="checkbox"/>	Cross-Country Ski		
<input type="checkbox"/>	Snowmobile		
<input type="checkbox"/>	Dog Sled		
<input type="checkbox"/>	Skijoring		
<input type="checkbox"/>	_____		
<input type="checkbox"/>	Watercraft - NonMotorized		
<input type="checkbox"/>	Watercraft - Motorized		

Other Use		Accept	Discourage	Eliminate
(Optional: Check any that apply)				
<input type="checkbox"/>	Hiker / Pedestrian	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Pack & Saddle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Bicycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Wheelchair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Motorcycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	All Terrain Vehicle (ATV)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Cross-Country Ski	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Snowmobile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Dog Sled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Skijoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Snowshoe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Watercraft - NonMotorized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Watercraft - Motorized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Special Considerations	
(Check any that apply. Underline appropriate clarifier in parenthesis. Provide specifics and reference information below.)	
<input type="checkbox"/>	Accessible per Current Agency Guidelines
<input type="checkbox"/>	Mechanized Tools or Equipment Prohibited
<input type="checkbox"/>	Threat, Endang or Sens Species ( <u>Plant / Wildl</u> )
<input type="checkbox"/>	Cultural Resource Present
<input type="checkbox"/>	Easement across Non-Park Land ( <u>Existing / Needed</u> )
<input type="checkbox"/>	Existing Permit or Agreement ( <u>Trail-Specific / Area</u> )
<input checked="" type="checkbox"/>	<u>Trail is in non motorized section of park</u>

Remarks / Reference Information	
(Use continuation sheet if needed.) A Directors Order will be needed to open the trail to bicycles.	

Completed by: Brooks Ludwig Title: Area Superintendent Date: 05/18/2010  
 Approved by: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_



# Trail Management Objectives (TMO)

**\* D R A F T \***

Rev. Date:  
1/12/2007

Area:

Park Unit:

District:

Trail Name:

Trail ID:

Trail Beginning Termini:

Beg. Milepost:

Trail Ending Termini:

End. Milepost:

Trail Inventory Length:  Miles

Trail Mileage Source:  Wheel

GPS

Map

Unknown

## TMO Trail Section (if applicable)

Section Beg. Termini:

Beg. Milepost:

Sec.# Section End. Termini:

End. Milepost:

## Designed Use Objectives

- (Check one)
- Trail Type
- Terra Trail
  - Snow Trail
  - Water Trail

- (Check one)
- Trail Class
- 1 (Primitive/Undeveloped)
  - 2 (Simple/Minor Development)
  - 3 (Developed/Improved)
  - 4 (Highly Developed)
  - 5 (Fully Developed)

### Difficulty Rating

(Check one)

- Easiest (white circle)
- Easy (green circle)
- Intermediate (blue square)
- Difficult (black diamond)
- Most Difficult (dbl diamond)

### Elevation Chg

+ or - Feet

### Level of Use

- Low (0-10 per day)
- Moderate (10-100 / day)
- High (100+ per day)

Est  Act  Counter

### Designed Use

(Check one)

- Hiker / Pedestrian
- Pack & Saddle
- Bicycle
- Wheelchair (ADA stds)
- Motorcycle
- All Terrain Vehicle (ATV)
- Cross-Country Ski-ungroomed
- Snowmachine
- Snowshoe
- Dog Sled
- Skijoring
- Watercraft - Non Motorized
- Watercraft - Motorized

### Design Parameters

(Fill in all that apply)

Basic Tread Width, inches

Clearing Width, feet

Clearing Height, feet

Backslope: 1/1, 2/1, 1/2

Target Grade, %  
( >95% of trail )

Max. Sustainable Grade, %  
for distance (ft)

Turn Radius Min, ft

### Target Frequency

Maintenance per Year

(Fill in all that apply)

Trail Opening

Tread Repair

Drainage Cleanout

Logging Out

Brushing

Snow Trail Grooming

Condition Survey



# Trail Management Objectives

## Trail Use Strategies

### Managed Use

(Fill in all that apply)

	From (mm/dd)	To (mm/dd)
<input checked="" type="checkbox"/> Hiker / Pedestrian	5/15	10/15
<input checked="" type="checkbox"/> Pack & Saddle	5/15	10/15
<input checked="" type="checkbox"/> Bicycle	5/15	10/15
<input type="checkbox"/> Wheelchair		
<input type="checkbox"/> Motorcycle		
<input type="checkbox"/> All Terrain Vehicle (ATV)		
<input type="checkbox"/> _____		
<input checked="" type="checkbox"/> Cross-Country Ski	10/15	4/20
<input type="checkbox"/> Snowmobile		
<input type="checkbox"/> Dog Sled		
<input type="checkbox"/> Skijoring		
<input type="checkbox"/> _____		
<input type="checkbox"/> Watercraft - NonMotorized		
<input type="checkbox"/> Watercraft - Motorized		

### Season

### Prohibited Use

(Check if applicable)

	From Date (mm/dd)	To Date (mm/dd)
<input checked="" type="checkbox"/> All Motorized Use		
(Or, fill in all that apply)		
<input type="checkbox"/> Hiker / Pedestrian		
<input checked="" type="checkbox"/> Pack & Saddle	20-Apr	14-May
<input checked="" type="checkbox"/> Bicycle	4/20	5/14
<input type="checkbox"/> Wheelchair		
<input type="checkbox"/> Motorcycle		
<input type="checkbox"/> All Terrain Vehicle (ATV)		
<input type="checkbox"/> _____		
<input type="checkbox"/> Cross-Country Ski		
<input type="checkbox"/> Snowmobile		
<input type="checkbox"/> Dog Sled		
<input type="checkbox"/> Skijoring		
<input type="checkbox"/> _____		
<input type="checkbox"/> Watercraft - NonMotorized		
<input type="checkbox"/> Watercraft - Motorized		

### Other Use

(Optional: Check any that apply)

	Accept	Discourage	Eliminate
<input type="checkbox"/> Hiker / Pedestrian	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Pack & Saddle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Bicycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Wheelchair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Motorcycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> All Terrain Vehicle (ATV)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Cross-Country Ski	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Snowmobile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Dog Sled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Skijoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Snowshoe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Watercraft - NonMotorized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Watercraft - Motorized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Special Considerations

(Check any that apply. Underline appropriate clarifier in parenthesis. Provide specifics and reference information below.)

- Accessible per Current Agency Guidelines
- Mechanized Tools or Equipment Prohibited
- Threat, Endang or Sens Species (Plant / Wild)
- Cultural Resource Present
- Easement across Non-Park Land (Existing / Needed)
- Existing Permit or Agreement (Trail-Specific / Area)
- Trail is in non motorized section of park

### Remarks / Reference Information

(Use continuation sheet if needed.) A Directors Order will be needed to open the trail to bicycles.

Completed by: Brooks Ludwig Title: Area Superintendent Date: 05/18/2010  
 Approved by: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

# The Mastodon Trail: Access to the Nugget Creek Cabin

**Chena River State Recreation Area  
Northern Area State Park  
Alaska Division of Parks and Outdoor Recreation**

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## **Trail Corridor Evaluation**



Lisa Holzapfel – Alaska NPS RTCA Program Program Leader/Outdoor Recreation Planner  
Kevin Meyer – Alaska NPS Regional Trail Specialist  
Kristen Pearson – Alaska NPS GIS Specialist/Cartographer  
Heather Rice – Alaska NPS RTCA Program Outdoor Recreation Planner

National Park Service  
Rivers, Trails and Conservation Assistance Program (RTCA)

September 2010

## **EXCERPTS FROM THE NPS TRAIL CORRIDOR REPORT**

### **INTRODUCTION**

In October 2009, the Northern Area Alaska State Park was awarded a grant of technical assistance from the NPS Alaska Region Rivers, Trails, and Conservation Assistance program (RTCA) to help identify a new sustainable non-motorized trail to the Nugget Creek cabin in the Chena River State Recreation Area. The cabin is currently accessed by the Mist Creek Trail and an old dozer trail, both of which are over-steep and unsustainable. The new trail is referred to as the Mastodon Trail.

RTCA technical assistance was provided from October 2009 through September 2010. Specifically, assistance focused on:

- Identifying major negative and positive control points from the Chena Hot Springs Road to Nugget Creek cabin;
- Identifying an optimal trail corridor; and
- Flagging the trail corridor in the field.

RTCA also used the field work associated with the project as a training opportunity for Chena River State Recreation Area staff to teach them skills necessary to design and layout the initial sustainable trail corridor on their own.

This report details the work completed by RTCA in partnership with the Northern Area Alaska State Park, and provides recommendations and next steps needed to fully design and construct the Mastodon Trail.

### **EXISTING ACCESS TO THE NUGGET CREEK CABIN**

The Nugget Creek cabin is accessed by two existing routes described on the Alaska Division of Parks and Outdoor Recreation website (<http://dnr.alaska.gov/parks/cabins/north.htm>). The winter trail starts on the south side of 31.4 mile Chena Hot Springs Road and is accessible by snowmachine, dog team, skis, or snowshoes. The 6.4 mile winter trail is marked with green diamonds starting at the Chena River. The traveler must cross the Chena River and there is often thin ice or open water, even in late winter, so caution is encouraged.

The Mist Creek Trail provides summer access to the Nugget Creek cabin and begins at mile 36.4 across the Chena Hot Springs Road from the entrance to the shooting range. Hikers must cross the Chena River to reach the start of the trail. The Mist Creek Trail actually has two branches, an east and a west branch. Most hikers follow the west Mist Creek Trail which traverses 0.25 miles of swampy lowland then steeply climbs the ridgeline west of Mist Creek until the top is reached at approximately 2.3 miles. An alternate, though less used and unmarked, route to the ridge is via the east branch of the Mist Creek Trail, which steeply ascends the ridge on the eastern slope above Mist Creek. Once on the ridge, hikers continue to the Nugget Creek cabin on an old dozer trail that descends the mountain and crosses a wet valley floor in a southerly direction to the cabin.

The west branch of the Mist Creek Trail and the dozer trail were recently marked with green and black diamond markers from the halfway point, but the markers can only be seen from one direction and the

combined 5.4 mile access remains little more than a route. Furthermore, it is a route that, according to Superintendent Brooks Ludwig, is virtually unusable by anyone other than the hardy adventurer willing to ford chest deep water in the Chena River or portage a canoe 300 yards then cross the river.

In early June, 2010, Kevin Meyer, Lisa Holzapfel (Alaska NPS RTCA Program Leader), Kristen Pearson (Alaska NPS GIS Specialist/Cartographer), and Heather Rice (Alaska NPS RTCA Outdoor Recreation Planner), hiked the west Mist Creek Trail and the dozer trail to the Nugget Creek cabin, assessing conditions along the way. Neither trail meets any of the six sustainable trail guidelines (see table below). Instead, both trails run primarily on fall line, are overly steep, and have no water control. Due to moisture accumulation and a lack of full bench construction, the tread is not durable. The dozer trail, in particular, is deeply entrenched across the flats, with protruding roots and sections of standing water. Neither the Mist Creek Trail nor the dozer trail is regularly maintained. Both would be classified as nonsustainable and unmaintainable in that it would be cost-prohibitive to bring them up to a sustainable condition.

**West Mist Creek Trail and Dozer Trail Compliance with Sustainable Trail Guidelines**

Sustainable Trail Design Guideline	Comply/Fail to Comply?
1. Contour Curvilinear Alignment	Fail
2. Controlled Grade	Fail
3. Integrated Water Control	Fail
4. Full Bench Construction	Fail
5. Durable Tread	Fail
6. Regular and Appropriate Maintenance	Fail

**TRAIL RECONNAISSANCE**

On March 24, 2009, Kevin Meyer conducted a site visit with Superintendent Brooks Ludwig. The purpose of the site visit was to better understand the character of the local landscape in which the proposed Mastodon Trail would be built. All that was known at this point was that the Mastodon Trail corridor would need to start at Chena Hot Springs Road, cross over the top of an unnamed ridge, and descend to the Nugget Creek cabin. The site visit provided an opportunity to scout possible trailhead locations and approaches to the cabin.

On the morning of March 24, Brooks and Kevin snowmachined upriver to the Nugget Creek cabin, which is located on the south side of the unnamed ridge. From the cabin, they visually scanned the south facing slopes of the drainage immediately to the north, and hiked the drainage itself, looking for possible trail alignments connecting the cabin to the top of the ridge. The southeast facing slopes of the drainage appeared more suitable for the new trail alignment due to suspected more favorable soil conditions. The valley floor had significant off-icing, which could create unsafe conditions for winter use and, therefore, was eliminated as an option. Given these observations, the best location for the alignment between the cabin and the top of the ridge was determined to be along the southeastern aspect of the ridge west of the drainage.

After scouting the areas around the cabin, Kevin and Brooks travelled to the north side of the ridge, along the Chena Hot Springs Road. Here, they looked for a new trailhead and a trail corridor that would

ascend the ridge from the north side, ultimately connecting to the cabin trail on the south side. As noted earlier in this report, Northern Area CAB members, Tom Paragi and Dave Payer, had researched a number of routes to improve access to the Nugget Creek cabin. One of those routes was a ridgeline east of the existing Mist Creek Trail, between Crawford Creek and Mastodon Creek. However, Kevin and Brooks found the north facing bluff of the toe of this ridge too steep, with too much exposed bedrock, to build a sustainable trail. Additionally, following the ridgeline would create a fall line trail, which would not meet trail management objectives. Therefore, this route was eliminated from consideration. The north and east facing side slopes of Mastodon Creek also were eliminated from consideration, because they were too steep, wet, and heavily incised for trail construction.

After further reconnaissance, Kevin and Brooks determined that the best location for the Mastodon Creek trailhead would be between milepost 38 and 39 of Chena Hot Springs Road. From here, the trail would cross the valley floor, then traverse the previously burned west facing slope of the ridge to the east of Mastodon Creek. After about two miles, the trail would cross an eastern fork of Mastodon Creek then traverse the northwest facing slope above the eastern fork, angling south and west until it reached the main channel of Mastodon Creek. The trail then would cross Mastodon Creek and slowly climb a southeast facing slope to gain the ridge. After crossing the ridge, the trail would contour below the ridge along the southwestern and southern aspects of the ridge to descend slowly along a southeast facing slope to the Nugget Creek cabin. (See Appendices B and C for maps.)

## **CONCEPTUAL TRAIL CORRIDOR IDENTIFICATION**

In June 2010, Kevin Meyer, Lisa Holzapfel, Kristen Pearson, and Heather Rice travelled to Chena River State Recreation Area to identify and flag a conceptual trail corridor for the Mastodon Trail. Marty Schatz, Chena River State Recreation Area Chief of Maintenance and Trails, and David Charron, Chena River State Recreation Area Trails Coordinator, also contributed time and assistance on the layout. Three volunteer trail crew members from the Chena River State Recreation Area helped set up a spike camp to support work on the last half of the layout.

The team spent five days in the field, hiked a total of 49 miles (36 of which were bushwacking), and roughly laid out and flagged 10.5 miles of conceptual trail corridor. Had this been the work of a contracted trail crew, only one experienced trail professional and one trained assistant would have been necessary, but the total cost would have been approximately \$44,000. This total cost estimate is based on the following assumptions:

- 15 days each for field work given a typical pace of 3/4 mile per 10-hour day for rough layout and flagging (note, for the much more precise pre-construction layout and flagging, the pace would drop to about 1/4 mile per 10-hour day, quadrupling the costs);
- 10 8-hour days each for pre-field preparation and logistics;
- 10 8-hour days each for post-field analysis, map creation, and report writing;
- Wages of \$60/hour for a trail professional and \$45/hour for the trained assistant;
- Travel costs of about \$6,000 total; and
- 15% overhead.

The conceptual trail corridor was flagged using bright pink Arctic Grade tape. When crossing the valley floor, flagging marks the conceptual trail center line. At the point the bench cut starts (WP 21), flagging

is along the critical edge (i.e., the outer edge) of the trail. All water control grade reversals are marked with double flags, one above the other on the same tree. All switchbacks are marked with triple flags, all three on the same tree. At one place on the top of the ridge, there were several pink trapper trail flags so RTCA wrote "NPS" in black marker on its flags to differentiate them from trapping and other flag lines. A rough GPS/GIS trail log was created documenting site conditions and possible trail construction methods; this log is not intended to be a detailed trail prescription, nor intended to be used for final trail construction.

**A. Gravel Cap (WP 13 to WP 17)**

From WP 13 to WP 17, approximately 1,177 linear feet of trail would need to be constructed to cross the flat valley floor. This would require using imported gravel fill material with a 1 to 2-foot average lift. The organic mat would be removed down to mineral soil and a geotextile material laid down prior to applying the gravel fill.

The average trail grade would be less than 5%. To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with a construction prism of up to 2 feet either side. Though this would create an initial disturbance area of 8 feet, naturally occurring vegetation regrowth would reduce the width over time.

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
1,177 linear feet	Gross estimate: <ul style="list-style-type: none"> <li>• 392 cubic yards imported gravel fill material for 2-foot average lift</li> <li>• 1,177 linear feet geotextile material</li> </ul>	<ul style="list-style-type: none"> <li>• Skid steerer for loading gravel at trailhead</li> <li>• SWECO OR MINI-EXCAVATOR for initial grubbing and spreading gravel</li> <li>• Tracked carrier for transporting gravel</li> <li>• Compactor</li> </ul>	6-8 person crew (including heavy equipment operator)

**B. Ditch and Elevate with Gravel Cap (WP 17 to WP 22)**

From WP 17 to WP 22, approximately 2,160 linear feet of trail would be constructed using the ditch and elevate technique with a 2- to 4-inch cap of imported gravel to cross wet soils. With the ditch and elevate technique, the tread surface is built up using material from excavated side ditches. Between WP 21 and WP 22, the trail would ascend the hillside in a series of S-turns with an 8% grade.

To allow for mechanical construction, and to support long-term maintenance using all-terrain vehicles (ATVs), the width of the gravel bench should be 4.0-4.5-feet, with an outslope and backslope of up to 2 feet either side. Though this would create an initial disturbance area of 8 feet, naturally occurring vegetation re-growth would reduce the width over time.

Construction work would be done by heavy equipment with support from hand crews. The table below provides details to complete this task.

Approximate Distance	Materials	Tools (partial list)	Labor
2,160 linear feet	Gross estimate: <ul style="list-style-type: none"> <li>• 108 cubic yards imported gravel material for 4-inch cap</li> </ul>	<ul style="list-style-type: none"> <li>• Skid steerer for loading gravel at trailhead</li> <li>• Excavator to ditch and elevate</li> <li>• SWECO for initial grubbing andgrading</li> <li>• Tracked carrier for transporting gravel</li> <li>• Compactor</li> </ul>	6-8 person crew (including heavy equipment operator)

**Construction**

With funding in-hand, compliance complete, construction documents done and the final trail alignment flagged and surveyed, the next step is actual trail construction. Trail construction should occur in the following order:

1. Clear the conceptual alignment;
2. Re-shoot the grade and reflag the critical edge of the trail;
3. Construct trail sections (with daily trail crew leader oversight);
4. Finish and polish full bench cut sections, creating the backslope and dressing up the side cast; and
5. Clear and disburse construction debris and perform vegetation rehabilitation as necessary so the corridor appears natural and is aesthetically pleasing.



**C. Social and Economic:** Describe the positive and/or negative social and economic impacts (if any) to the local community, individual residents, and/or businesses: (For example, consider immediate and future affects to local commuters, the elderly, and other recreational users.)

**Social and Economic impacts:**

This new trail (Mastodon) will provide safe, year-round access to Nugget Creek public use cabin. The existing access to the cabin crosses the Chena River which can be hazardous due to thin ice or open water, even in late winter. The new alignment will eventually link the very popular Tors Trail to the east forming a 40 mile trail network with three public use cabins / trail shelters.

**D. Archeological and Historical Resources:** Contact the Alaska Office of History and Archeology (OHA) at 907-269-8721; also on the web at <http://www.dnr.state.ak.us/parks/oha/index.htm>.

OHA Contact: Tracie Krauthoefer

Date of Contact: 11/02/2010

Contact's Title: Archaeologist II

1. Are there National Register listed or eligible sites in the project area?  Yes  No
2. Will the project effect any listed or eligible sites?  Yes  No

If "Yes" to any of the above, briefly summarize and attach the following: survey report, determinations and concurrences from the State Historic Preservation Office, and any agreements for resolution of adverse effects.

**E. Threatened and Endangered Species:** Contact the U.S. Fish & Wildlife Service (FWS) office; Northern Alaska (907)-456-0203; Central Alaska (907) 271-2888; Southeast Alaska (907) 780-1160; or on the web at <http://alaska.fws.gov/index.htm>

FWS Contact: Denise Walther (456-0277)

Date of Contact: 11/02/2010

Contact's Title: Fish & Wildlife Biologist

1. Are there threatened or endangered species present  Yes  No
- a. If "Yes", would project affect species or critical habitat?  Yes  No

Describe impacts and attach documentation of consultations with U.S. Fish & Wildlife Service.

No foreseeable impact on threatened or endangered species in this geographic location.

**F. Fish & Wildlife Habitat:** Contact the Alaska Department of Natural Resources, Office of Habitat Management and Permitting (OHMP), Northern Alaska (907) 459-7289; Central Alaska (907) 269-8690; Southeast Alaska (907)-465-4105; or on the web at <http://www.dnr.state.ak.us/habitat/>

OHMP Contact: Todd Nichols (459-7289)

Date of Contact: 11/02/2010

Contact's Title: Habitat Biologist

1. Are anadromous or resident fish populations present?  Yes  No
2. Does the project affect wildlife resources (game / subsistence species)?  Yes  No
3. Are migratory bird habitat or raptor nests present?  Yes  No
4. Will the project cross Essential Fish Habitat (EFH)?  Yes  No

Contact the National Marine Fisheries Service (NMFS) - Juneau Office at (907) 586-7638, Anchorage office at (907) 271-3029 or on the web at <http://www.fakr.noaa.gov/habitat/efh.htm>

F. (Continued)

NMFS Contact: \_\_\_\_\_ Date of Contact: \_\_\_\_\_

Contact's Title: \_\_\_\_\_

Describe impacts, list permits, and attach documentation of consultations with OHMP and/or NOAA/NMFS.

**G. Wetland:** Contact the U.S. Army Corps of Engineers (USACE), Wetland Permits at (907) 753-2712; or on the web at <http://www.poa.usace.army.mil/hm/default.htm> to determine if project involves wetlands.

USACE Contact: Christy Everett (474-2166) \_\_\_\_\_ Date of Contact: 11/02/2010 \_\_\_\_\_

Contact's Title: U.S. Army Corps of Engineers, Fairbanks Field Office, Manager \_\_\_\_\_

1. Will the project area impact wetlands?  Yes  No
- a. Total wetland acres affected: .109 \_\_\_\_\_ d. USACE authorization required:  None  Individual
- b. Total wetland fill (Cubic Yards): 392 \_\_\_\_\_  NWP  Other
- c. Total dredge quantity (Cubic Yards): \_\_\_\_\_

2. Describe impacts, list permits, and attach documentation of consultations with USACE.

Will need a NWP#14 to place 392 cubic yards of fill along 1,117 lineal feet of trail.

**H. Floodplains:** Contact the USACE at (907) 753-2712, or a local agency responsible for management of local floodplains.

Agency Contact: Doug Sims \_\_\_\_\_ Date of Contact: 11/02/2010 \_\_\_\_\_

Contact's Title: Fairbanks North Star Borough, Dept. of Community Planning, Planner III \_\_\_\_\_

1. Will the project encroach onto the 100-year floodplain?  Yes  No
- a. If "Yes", would the project increase the backwater elevation of the 100-year floodplain one foot or greater?  Yes  No
2. Is the project within a regulatory floodway?  Yes  No
- a. If "Yes", does the project adversely affect the floodway?  Yes  No

3. If "Yes" to any of the above, describe the impacts, list permits, and attach documentation of consultations.

from email with Doug Simms "I doubt very seriously that the nature of your project will increase water surface elevations to such a degree. The floodplain is quite broad and wide in the Upper Chena River Valley, such that any floodwaters can be accommodated".

**I. Waterbodies:** Contact the USACE at (907) 753-2712, or the U.S. Coast Guard (USCG) southeast (907) 463-2450, Valdez area (907) 835-7205 or 835-7217; western and northern Alaska (907) 271-6700. Indicate with whom from each agency this was discussed.

Agency: U.S. Army Corps of Engineers

Agency Contact: Christy Everett (474-2166)

Date of contact: 11/02/2010

Contact's title: Fairbanks Field Office, Manager

1. Will the project affect a water body (stream, pond, lake, river, etc.)?  Yes  No
- a. Will the project affect navigable waters [Ref. Sec. 9 of Rivers & Harbors Act]  Yes  No
- b. Will the project affect waters of the U.S. as defined by Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act?  Yes  No
- c. Will the project affect a catalogued anadromous fish stream?  Yes  No
- d. Will the project involve any of the following actions / installations regarding rivers or streams:
- Bridge  Culvert  Embankment fill  
 Temporary Diversion  Permanent Diversion

2. Describe the impacts, list permits, and attach documentation of consultations:

A NWT #14 will be initiated for the project

**J. Alaska Coastal Management Program:** Contact the Department of Natural Resources (DNR)'s Office of Project Management and Permitting (OPMP), in Southeast Alaska call (907) 465-3562 and for all other areas call (907) 269-7470; also on the web at <http://www.alaskacoast.state.ak.us/>

OPMP Contact: DNR website for Coastal Management Areas

Date of contact: 11/02/2010

Contact's title: http://www.alaskacoast.state.ak.us/

1. Is the project within the Alaska Coastal Management Program boundary?  Yes  No
- If "Yes", please complete and attach the Coastal Project Questionnaire found at <http://www.alaskacoast.state.ak.us/Projects/pcpg3.html>

**K. Water Quality:** Contact the Department of Environmental Conservation (DEC) as instructed for each item; visit DEC on the web at <http://www.dec.state.ak.us/water/>

1. Does the project affect a public or private drinking water source?  Yes  No  
[ Contact DEC Drinking Water Program Manager at (907) 269-7647 ]

DEC Contact / Title: Chris Miller (269-7549) Environmental Program Spec. IV Date: 11/02/2010

2. Does the project affect a designated impaired waterbody?  Yes  No  
[ Contact DEC Water Quality Assessment & Monitoring program office at (907) 269-3066 ]

DEC Contact / Title: Chris Miller (269-7549) Environmental Program Spec. IV Date: 11/02/2010

3. How many acres of ground-disturbing activities will result from the project: .109

4. Is there a municipal separate storm system (MS4) with a National Pollution Discharge Elimination System (NPDES) permit, or will runoff be mixed with discharges from an NPDES permitted facility?  Yes  No  
[ Contact DEC Wastewater Discharge Program at (907) 269-7565 ]

**K. Water Quality** (cont.)

5. Describe the impacts, list permits, and attach documentation of consultations:

NWT#14

**L. Hazardous Waste:** Visit the DEC website at <http://www.dec.state.ak.us/spar/csp/index.htm> and contact the Contaminated Sites Program at (907) 451-2143 to determine if hazardous waste is within the project site.

DEC Contact / Title: DEC, Contaminated Sites Program Website

Date: 11/02/2010

1. Are hazardous wastes located within the project area?

Yes  No

If "Yes", please describe below:

**Sections "M" and "N" are to be completed for Motorized and Diversified projects.**

**M. Air Quality:** To ensure compliance with air quality standards, contact the Environmental Protection Agency (EPA) on the web at: <http://yosemite.epa.gov/R10/Homepage.NSF/webpage/Alaska's+Environment?opendocument> or by phone at 907-271-5083 (Anchorage); or 907-586-7604 (Juneau).

EPA Contact / Title: EPA, Air Data Non-attainment/Maintenance Areas

Date: 11/02/2010

1. Is the project in a designated non-attainment or maintenance area for air quality?

Yes  No

a. If "Yes", is the project listed on an exempt projects list ([40 CFR 93.126](#))?

Yes  No

**N. Noise:**

1. Is the project in an existing designated recreational land use area or park?

Yes  No

2. Is the project located near residential areas, campgrounds, wildlife refuges, or wilderness areas?

Yes  No

2a. Describe the proximity and noise impacts to areas below:

This project is within the Chena River State Recreation Area and will not impact any residential areas or campgrounds, and is not a wilderness area.

3. Indicate the type and estimated number of mechanized vehicles using the trail by season.

For example, 15 snowmobiles/day in winter, and 25 ATVs/day off-winter.

No. of Vehicles per day: 2

Type of vehicle: Skiing / dog mushing

Winter

Off Winter

No. of Vehicles per day: 4

Type of vehicle: Hiking / Biking / horses

Winter

Off Winter

**IV Public Involvement.** Describe how public involvement was solicited and attach copies of public notices and comments.

Our organization solicited public involvement by:

The 2006 Chena River Management Plan made recommendations to improve access to Nugget Creek Cabin, provide summer access, and work with user groups to expand a cabin system for non-motorized users. Newspaper articles published 05/06/2010 and 06/24/2010 in the Fairbanks Daily News Miner sought public input for establishing the trail. An open house was hosted by Alaska State Parks for public comment and an online survey was filled out. More than 90% of the 178 people surveyed supported building a sustainable trail to the cabin. 95% of respondents support a trail network with shelters in the non-motorized portion of the park.

**V Environmental Commitments and Mitigation measures.** List commitments and measures that will be taken to avoid, minimize, or mitigate any impacts identified in Section III or IV above. List all permit conditions.

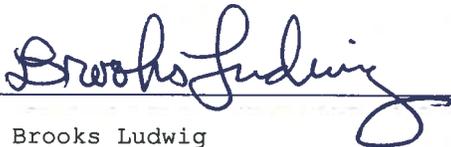
Our organizations commitments and mitigation measures include:

This is a great opportunity to provide a sustainable non motorized trail in Chena River State Recreation Area. It will eliminate the need for people making a dangerous river crossing and reduce erosion.

**VI Applicant Certification.**

I certify that the information provided on this form and any supplemental documents are accurate and complete to the best of my knowledge.

Signature: \_\_\_\_\_



Date: 11/02/2010

Printed Name: Brooks Ludwig

**For Official Use Only**

**Land Water Conservation Fund Act (LWCF), Section 6(f)(3):**

- 1. Are Section 6(f)(3) properties affected by the project?  Yes  No
- a. If "Yes", will the use of the property constitute a conversion?  Yes  No

Further coordination is not required  Further coordination required

Approved by: \_\_\_\_\_

LWCF State Liaison Officer

Date: \_\_\_\_\_

**Trails Coordinator Certification:**

Project qualifies as a Categorical Exclusion, per 23 CFR 771.117, and Stipulation 2 of the Programmatic Agreement between FHWA and the Alaska Department of Natural Resources (ADNR)

Yes  No

\* If project does not qualify as a CE, consult with FHWA

Approved by: \_\_\_\_\_

State Trails Coordinator

Date: \_\_\_\_\_

**Federal Highway Administration**

Approved by: \_\_\_\_\_

FHWA Recreational Trails Program Manager

Date: \_\_\_\_\_



# Application for Assistance

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**Project Name:** *Chena River State Rec Area – Trail Alignment Update* **Date:** July 31, 2008

**Project Location** *Fairbanks North Star Borough*

**City, County and State:** Fairbanks, Alaska

**Congressional District(s):** Alaska

**Applicant(s):** Alaska State Parks, Northern Area

**Primary Contact:** Brooks Ludwig **Title:** Park Superintendent

**Street Address:** 3700 Airport Way

**City:** Fairbanks **State:** AK **Zip Code:** 99709

**Email:** anna.plager@alaska.gov

**Daytime Phone:** 451-2698 **Fax:** 451-2754

## Project Description

### 1. Project Goals

Our next goal for the Chena River State Recreation Area Trail Inventory, Assessment & Treatment Prescription is to work on the non-motorized trail system. This project will map out a sustainable alignment for a new non-motorized trail known as Mastodon Creek Trail. This new trail will replace an existing steep trail (Mist Creek) that is not easily accessible during summer months because people have to cross the Chena River to get to it. This new alignment will provide an overland connection to Mist Creek trail and also links the very popular Tors Trail to the east forming a 40 mile network with three public cabins / trail shelters. We look forward to bringing our trail program into the limelight statewide as providing the very best trail experiences possible. The RTCA will be instrumental in helping us establish control points and layout for a sustainable alignment across the valley bottom and up along Mastodon Ridge.

### 2. Natural Resources Improved or Protected, Outdoor Recreation Opportunities Enhanced

The relocation of the trail will provide a safe, sustainable year-round trail and reduce erosion by eliminating the steep Mist Creek alignment. The benefits of this trail will be to provide a network of trail loops and cabin hopping opportunities.

### 3. Partners & Support Letters from Project Partners

The number of people commenting on the need to re-route / fix trails during the Chena River State Recreation Area Management Plan revision process (2003 – 2006) demonstrates the communities' support for more and better trails. Fairbanks North Star Borough residents love their trails as indicated in the recent phone survey done by UAF where they identified hiking as their favorite activity.

The following groups have indicated strong support for the Mastodon Creek Trail project, with written letters from some:

- Fairbanks Hiking Club
- Northern Area State Parks Advisory Board
- Fairbanks North Star Borough Parks & Recreation Dept.
- Fairbanks North Star Borough Trail Planning Committee
- Alaska Trails
- Interior Trails Preservation Coalition

### 4. Examples of Support: Plans; Endorsements; Public Votes or Surveys; Grants and Other Funds Awarded; or Media Coverage.

This trail assistance will allow State Parks to address public comments identified in the 2006 Chena River State

Recreation Area Master Plan, the Division of Parks & Outdoor Recreation Ten-Year Strategic Plan 2007-2017, and the Statewide Comprehensive Outdoor Recreation Plan 2004-2009. This trail project has the full support of the Northern Area State Park Citizen Advisory Board, a diverse group of trail users from around the area.

In addition to RTCA former grants in 2005 & 2006, 2007 & 2008, the Chena River SRA has also been awarded the following Recreational Trail Program grants:

1. Tors Trail Improvements, # 10795427, awarded 2003
2. Chena Hot Springs Winter Trail Clearing/Upgrade, # 1079550, awarded 2004
3. Granite Tors Trail Fire Rehabilitation # 10795634 awarded 2005
4. Chena River Trail Improvements # 10795624 awarded 2006
5. Northern Area Grooming Pool # 10790577 awarded 2006
6. Stiles Creek Re-Route # 10795775 awarded 2007
7. Colorado Ridge (Compeau) Trail #10795776 2007

Several Fairbanks Daily News Miner articles have covered the new developments in recent years in the Chena River SRA.

#### 5. Describe Assistance from RTCA Staff.

RTCA staff are asked to provide technical advice on how to locate sustainable alignments. This will involve field work to assess the conditions and possibilities for the Mastodon Creek Trail route. These field inspections will offer guidance to the Chena River SRA staff and Northern Area park staff responsible for constructing the new alignment. The final product will be a map showing the proposed GPS located alignment.

#### **Project Background and Context**

#### 6. Map of Project Location and Significant Resources

See map below. This assistance request covers the area from the trailhead to the proposed cabin shelter site.

The Chena River State Recreation Area is one of Fairbanks favorite recreation destinations and has an annual visitor count of 150,000. According to a 2006 UAF Visitor Use Survey, of Fairbanks North Star Borough residents, 50% had visited the Chena River SRA (page 11). The phone survey also noted that hiking was the favorite activity (page 9).

According to the Statewide Comprehensive Outdoor Recreation Plan, one of the highest priorities for communities is public use cabins. A summer trail would greatly benefit access to these public use cabins.

The current trail is virtually unusable by anyone other than those willing to ford chest deep water in the Chena River or portage a canoe 300 yards then cross the river. By providing a well-designed and well-constructed year-round trail, people of all ages and skill levels will be able to use the trail.

#### 7. Describe Physical Connections to Resources in the Region

This new trail will provide longer non motorized trail and cabin hopping opportunities. There are only 6 trails in Alaska that offer 30 mile or greater hikes. This new trail will connect the non motorized area within the Chena River State Recreation Area and provide a myriad of hiking options.

#### 8. Public Participation

The 2006 update of the Chena River State Recreation Area Management Plan involved several rounds of public review and many meetings and workshops that provided an opportunity for the public to comment on plan proposals, including designing a summer access for the Mist Creek Trail. The management plan also identified improving trail access to the Nugget Creek Cabin which is exactly what this alignment will do. The Citizen Advisory Board, recognizing the importance of trails to the community, sponsored a special open house to address these issues in September of 2005. New trail work on other trails in the area has kept this issue alive and the public is kept abreast of new developments through regular media releases from the department. The Citizen Advisory Board has provided a critical conduit to public participation and opinion to convey concerns to the division staff.