



United States  
Department of  
Agriculture

Forest  
Service

Bitterroot National Forest

1801 N. First  
Hamilton, MT 59840  
406-363-7100

File Code: 7500/2720

Date: September 11, 2003

Mr. Les Groeneveld  
President  
Tin Cup County Water and/or Sewer District  
P.O. Box 292  
Darby, MT 59829

Dear Mr. Groeneveld,

This letter documents my denial of Tin Cup County Water and/or Sewer District's request for mechanized ground access to Tin Cup Dam as described in your two September 9, 2003 letters to Dan Ritter. The purpose for the requested access is to make urgent repairs to your dam as noted in your August 26, 2003 letter to Dan Ritter. I am authorizing, in a separate letter, alternative access via helicopter.

My primary reason for denying this request is because there is another reasonable, feasible, and viable means of access (helicopter, as you also describe in your September 9 letters) suitable to the current scope of work that I believe better addresses the urgency of the situation and which would result in fewer and less severe impacts on the public resources. Your letters of September 9 indicate the ground access would not begin until October 1 and would take an additional seven days to reach the dam. Given the uncertainty of suitable weather conditions, the urgency of the situation, and the immediate availability of helicopter access, I believe it is unacceptable to delay the repairs that long.

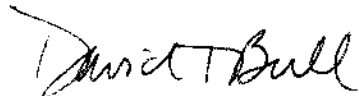
Second, while your proposed ground based access proposal may have "minimal impacts on the ground and vegetation," it is still likely to have irretrievable if not irreversible impacts that, in the current situation, can be reasonably avoided. I understand your long term interest in a more practical and economic means to access your facility, but I believe those decisions would be better served by more deliberate discussions, additional evaluation on the ground, and a better understanding of your long term intent and needs for the dam.

I have enclosed for your convenience a copy of the "Minimum Requirement Process" documentation completed for your access request. It provides some additional, relative comparisons between the available access options and their potential effects.



You also asked, on the fax cover sheet for the September 9 letters, whether this can "be considered a formal request for mechanized trail access for future work so the USFS can start the EIS process now?" In short, the answer is no. We will need more information concerning your future proposal before we could accept an application. Specific requirements are described at 36 CFR 251.54. When you are ready we would be happy to work with you so you may develop a suitable application.

Sincerely,

A handwritten signature in black ink that reads "David T. Bull". The signature is written in a cursive style with a large initial 'D'.

DAVID T. BULL  
FOREST SUPERVISOR  
cc: Dan Ritter

enclosure

MINIMUM REQUIREMENT DECISION PROCESS  
PERMISSION FOR MOTORIZED EQUIPMENT AND MECHANIZED TRANSPORT  
TIN CUP DAM 2003

## Introduction

The Tin Cup County Water & Sewer District (TCCW&SD) has requested use of motorized equipment and mechanized transport for work on Tin Cup Dam in 2003. The proponent's goal is to rehabilitate the 109 year-old dam for compliance with dam safety requirements, for retaining full storage water rights and to insure efficient releases.

The TCCW&SD's proposed work includes:

- Raising the partial breach elevation in relation to the spillway elevation so future spring run-off is carried by the spillway instead of over-topping the breach. This work will be accomplished through removing large rock from the partial breach and then creating a berm approximately 6 feet high by 6.5 feet wide on the reservoir side of this area.
- Protecting the partial breach from erosion and internal piping by installing an impermeable liner covered by filter fabric, soil and rock.
- Repairing a sinkhole in the partial breach.

Additional proposed work, if time and weather permits:

- Increase the effectiveness of the spillway by removing rocks in restricted areas and smoothing the channel bottom. This work may include blasting, concrete work and/or armoring in areas where erosion is occurring.
- Construct a new log boom to deflect debris.

The TCCW&SD is requesting the use of helicopters to transport people, heavy equipment, supplies and materials. They propose to use heavy equipment (a mini-excavator, mini bobcat and a compactor) as well as other motorized equipment (including an electric impact drill, generator, water pump, chainsaw, chainsaw winch and misc. other tools).

Regional Forest Service Manual Supplement 2300-98-1 requires proposals for use of mechanized transport to be evaluated based on the "minimum tool" necessary to accomplish the project AND that one or more of the following conditions be met in order to approve requests for use of motorized transport or mechanized tools in association with wilderness dams:

- Emergencies (Immediate threat to life and property)
- Where impacts to wilderness/resources would be greater using non-motorized/non-mechanical methods
- Where physically infeasible to use non-motorized methods
- When costs make the use of primitive tools infeasible.

In making a determination on reasonable access, the Forest Service must use existing regulations/policies AND balance potential effects on wilderness character with effects on the Tin Cup County Water & Sewer District (TCCW&SD).

Issues that affect the wilderness character, visitors and TCCW&SD workers include federal dam safety requirements and the ability to complete the project before winter conditions set in, the feasibility of using traditional methods vs. motorized/mechanized methods, the level of impact created by access (trail vs. helicopter), and cost.

The following Minimum Requirements Worksheets are used to document the process to determine the minimum action necessary and reasonable to complete the project. *Values and figures used are best current estimates based on available information. They are intended to provide a relative comparison between potential alternatives and their effects, not necessarily absolute values.*

## Minimum Requirements Worksheets

### STEP 1 – DETERMINING THE MINIMUM REQUIREMENTS FOR MOTORIZED EQUIPMENT AND MECHANIZED TRANSPORT TO TIN CUP DAM (A two-part process)

#### PART A – Minimum Requirement Key to making a determination on wilderness proposals

(Answering these questions will help determine the minimum required action in wilderness.)

Guiding Questions		Use the available space or additional sheets as needed.		
Is this an emergency (i.e., a situation that involves an inescapable urgency and temporary need for speed beyond that available by primitive means, such as fire suppression, health and safety of people, law enforcement efforts involving serious crime or fugitive pursuit, retrieval of the deceased or an immediate aircraft accident investigation)?		Answer:	YES: <input checked="" type="checkbox"/>	NO: <input type="checkbox"/>
If Yes, then:		<b>Explain:</b> On July 9, 2003 TCCWSD representatives discovered and reported evidence of a minor overtopping event in a notched portion of Tin Cup dam as well as a sinkhole on the downstream side of the notch. Further analysis of the situation indicated the spillway has a 10-20% chance of the dam overtopping in any given year during high spring flows. In the event the reservoir water level reaches the overtopped area again in 2004, there is an unacceptably high probability of failure as water overtops and erodes the dam. The existing sinkhole could progressively erode into the dam and cause a failure. While there is no imminent danger of dam failure now, it could fail during spring runoff. Homes and buildings in the town of Darby and some of the outlying areas, as well as Highway 93 near the creek could be flooded. Consequences could include loss of life, economic loss to residents and property owners, and damage to public and private natural and economic resources. Environmental damage could include loss of the threatened bull trout and its habitat in and along Tin Cup Creek.		
If No, then:				
↓ Go to next question				
Document rationale for line officer approval using the minimum tool form and proceed with action				
Does the project or activity conflict with the stated wilderness goals, objectives and desired future conditions of applicable legislation, policy and management plans?		Answer:	YES: <input type="checkbox"/>	NO: <input type="checkbox"/>
If Yes, then:		<b>Explain:</b>		
If No, then:				
↓ Go to next question				
Do not proceed with the proposed project or activity.				

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Are there other less intrusive actions that should be tried first (i.e. signing, visitor education or information)?		<b>Answer:</b>	<b>YES:</b>	<b>NO:</b>
If <b>Yes</b> , then:		<b>Explain:</b>		
Implement other actions using the appropriate process.				
If <b>No</b> , then:				
↓ <i>Go to next question</i>				
Can this project or activity be accomplished outside of wilderness and still achieve its objectives (i.e. some group events)?		<b>Answer:</b>	<b>YES:</b>	<b>NO:</b>
If <b>Yes</b> , then:		<b>Explain:</b>		
Proceed with action outside of wilderness using the appropriate process.				
If <b>No</b> , then:				
↓ <i>Go to next question</i>				
Is this project or activity subject to valid existing rights (i.e. a mining claim or right-of-way easement)?		<b>Answer:</b>	<b>YES:</b>	<b>NO:</b>
If <b>Yes</b> , then:		<b>Explain:</b>		
Proceed to minimum tool section of this document, STEP 2.				
If <b>No</b> , then:				
↓ <i>Go to next question</i>				
Is there a special provision in legislation (the 1964 Wilderness Act or subsequent wilderness legislation) that allows this project or activity (i.e. maintenance of dams or water storage facilities with motorized equipment and mechanical transport or control of fire, insects and disease)?		<b>Answer:</b>	<b>YES:</b>	<b>NO:</b>
If <b>Yes</b> , then:		<b>Explain:</b>		
The proposed project or activity can be <u>considered</u> but it is not necessarily required just because it is mentioned in legislation. <i>Go to Part B, as needed.</i>				
If <b>No</b> , then:				
↓ <i>Proceed to Part B, Responsive Questions</i>				

## Minimum Requirements Worksheets

### STEP 2 – DETERMINING THE MINIMUM TOOL

#### (The Minimum Tool Analysis)

**Describe the alternatives. Be specific and provide detail.**

**Alternative 1 (TCCW&SD Proposal):** *Requested use of mechanized transport and motorized tools in the fall of 2003 at Tin Cup Dam would be authorized.*

The Tin Cup County Water & Sewer District (TCCW&SD) would use mechanized transport to get equipment, supplies, and materials to Tin Cup Dam. In Option A, all transport would be done with helicopters. In Option B, a “walking” excavator would use the existing trail to access the dam, requiring limited trail modifications. All other equipment, supplies and materials would be flown. In both Options, people would access the dam by a combination of traditional trail access and helicopter. In both Options, the TCCW&SD would use motorized equipment at the dam to raise the elevation of the partial breach, install a protective liner, repair a sinkhole, repair the spillway and install a new log boom. In both Options, work would be completed in 2003.

**Alternative 2:** *No mechanized/motorized use would occur on Tin Cup Trail. Mechanized transport would be authorized only for equipment or materials too heavy to transport with stock. All other equipment, materials, supplies and people would be transported with stock. All use of motorized tools would be authorized.*

The TCCW&SD would use a combination of traditional transport (primarily with stock) and helicopter transport for equipment, materials and supplies. All people would access Tin Cup Dam by foot or with stock. The TCCW&SD would use motorized equipment at the dam to raise the elevation of the partial breach, install a protective liner, repair a sinkhole, repair the spillway and install a new log boom. All work would be completed in 2003.

**Alternative 3:** *Mechanized ground access by limited width rubber track and/or rubber tired vehicles as described in TCCW&SD’s September 9, 2003 letters to Dan Ritter.*

In 2003, the TCCW&SD would use a “minimum width” excavator, (less than 8 feet wide) to clear an adequate trail /primitive road to the dam generally following the existing trail (see the letter for further descriptions and assumptions). Additional wheeled or tracked equipment would follow. Restoration work would be completed as the equipment exits, including replacing some 20 culverts. The excavator would start approximately October 1 and take approximately 7 days to reach the dam. The larger equipment could allow shorter work period at the dam site itself compared to what could be flown in alternative 1 and 2.

**Alternative 4:** *No Mechanized transport or motorized equipment would be authorized. All equipment, materials, supplies and people would be transported with stock.*

A rigging operation would be set up to remove the large buttress rock and then replace it. A berm approximately 6 feet high keyed into the existing partial breach would be constructed by non-motorized means. This structure would be faced with an impermeable liner and protected from floating debris by installing spar logs in the reservoir that would anchor a log boom. A new log boom would also be installed across the existing spillway and work would begin repairing the spillway. Approximately 115 days or two seasons would be required to complete the work. Approximately 8 stock trips (each with 20 stock) would be used to transport all equipment, material, supplies and laborers. The TCCW&SD would use traditional tools.

**Alternative Not Looked at in depth:** *No Action.*

This alternative does not meet federal dam safety requirements

**Alternative Not Looked at in depth:** Use of traditional transport and equipment to install a temporary raise on the partial breach using dimensional lumber and other “packable” materials. This alternative would not meet engineering specifications and would take longer than the emergency situation allows.

**Alternative Not Looked At In Depth:** *Breaching Tin Cup Dam.*

This alternative is outside the scope of Forest Service discretion.

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**Economic, Logistical and Timing Considerations**

**Notes:**

- While costs may be revised, they are used here to indicate relative values.
- The estimated transport, equipment and labor costs are NOT total project costs. Certain material, off-site logistics, insurance, fees and permits, and standard contingency mark-ups are not included in these comparative costs.
- One season is approximately 90 days (July, August, September). Snow and weather conditions outside this timeframe limit work and productivity.
- These timeframes do not thoroughly evaluate ways project pieces may overlap or ways additional support could speed work. They are used here to indicate relative values. For instance, a small bobcat and a stone boat may carry equal amounts but the bobcat will self load in @30 seconds while a stone boat will take laborers 20 minutes to load. This estimate did not calculate for multiple stone boats and laborers to allow the same amount of material to be hauled in the same amount of time.

	Alt 1 Option A	Alt 1 Option B	Alt 2	Alt 3	Alt 4
<b>Estimated Project Costs</b>	\$60,000-70,000*	\$68,000-78,000	\$70,500-80,500*	\$35,000 to 45,000 + Other Materials & Tools**	\$109,900
<b>Estimated days for access</b>	2-3	8-14	18-20	7 ingress, est. 4-7 egress	16
<b>Estimated time for project completion</b>	@2-3 Weeks beginning Sept 15	@ 3-4 Weeks beginning Sept 15	@ 5-6 Weeks beginning Sept 15	@3 weeks beginning Oct. 1	115 days or 2 seasons

\*TCCWSD September 9, 2003 letters to Dan Ritter estimates \$42,000 to 47,000 plus additional materials.

\*\* TCCWSD estimates from their September 9, 2003 letters to Dan Ritter. Does not include all their estimated costs, and does not consider additional costs that might be necessary due to FS environmental conditioning of that access.

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**Biophysical Effects:**

**Common to All Alternatives:** The Tin Cup drainage is in Opportunity Class 4 and receives relatively high use. Forest Plan standards allow some sign of human modification and visitors can expect to see some human impacts that persist from year to year. The area around Tin Cup Lake exceeds Forest Plan standards by the number of campsites that are too heavily impacted.

**Alternative 1:** Effects on fisheries, vegetation, sensitive plants and cultural resources would be low with air transport (unless a helicopter crashes - which has fuel spill and aircraft removal problems). If Option B were used (a "walking" excavator on the existing trail with some modifications to the trail), effects on these resources would be low (based on specialist's reports during previous repair projects). Effects on management indicators or T&E species would be low. Effects to mountain goats disturbed by air transport would be increased. There would be temporary wildlife displacement but primary effects would be the actual work project. Effects from the Tin Cup Lake worker campsite would be minimal because extensive camps have also been used in recent repair projects. These campsite impacts are considered traditional and are able to be mitigated. Natural integrity would be unaffected (long-term ecological processes are intact and operating).

**Alternative 2:** Helicopter effects would be the same as in Alternative 1. Possible effects on fisheries, vegetation, sensitive plants and cultural resources would be increased by stock impacts on Tin Cup Trail. The amount of time needed for transport and for work would be higher than in Alternative 1 (increasing wildlife displacement). There would be increased stock impacts to the Tin Cup Trail tread and drainage structures. Effects on campsites associated with stock transport would be minimal compared to past work projects that used stock on-site (and included containment). These campsite and trail impacts are considered traditional and are able to be mitigated. Natural integrity would be unaffected (long-term ecological processes are intact and operating).

**Alternative 3:** Effects on fisheries, vegetation, sensitive plants and cultural resources would likely be limited (based on specialist's assessments during similar repair projects here and nearby), although validation of trail improvement effects has not been completed at this time. Excavation near stream crossings and culvert replacements would generate some additional sediment. Effects on terrestrial management indicators or T&E species would likely be low. There would be temporary wildlife displacement. Effects of the Tin Cup Lake worker campsite would be minimal because extensive camps have also been used in recent repair projects. These campsite impacts are considered traditional and are able to be mitigated. Natural integrity could be affected along the trail access corridor; although the extent of those effects is uncertain at this time. Delayed start date increases risk of inclement weather interfering with proper completion of erosion control work and trail restoration on exit. Widened trail tread increases the potential for motorized trespass in the wilderness.

**Alternative 4:** There would be no effects associated with air transport. Possible effects on fisheries, vegetation, sensitive plants and cultural resources would be higher than in Alternatives 1 or 2. The amount of time needed for transport and for work would be higher than in Alternates 1 or 2 (prolonging wildlife displacement by multiple seasons). Effects to the Tin Cup Lake worker campsite would be similar to those during recent work projects. There would be increased stock impacts to the Tin Cup Trail tread and drainage structures. Effects on campsites associated with stock transport would be comparable to past work projects that used stock on-site (included containment). These campsite and trail impacts are considered traditional and are able to be mitigated. Natural integrity would be unaffected (long-term ecological processes are intact and operating).



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**Social/Recreational/Experiential Effects**

**Common to All Alternatives:** The Tin Cup drainage is in Opportunity Class 4 and receives relatively high use. Forest Plan standards allow some sign of human modification and more human interaction than would be expected in pristine areas. Visitors can expect to see some human impacts that persist from year to year, to encounter other users on the trail and at campsites, and to have a reduced opportunity to experience solitude or remoteness. The area around Tin Cup Lake exceeds Forest Plan standards by the number of campsites that are too heavily impacted. Tin Cup Trail #96 is a popular stock and foot trail.

**Alternative 1:** Visitor expectations of naturalness, remoteness and solitude would be impacted by the sight and sound of helicopters; by landings at the lakes (considered an intrusion of wilderness character); by encounters with motorized equipment at the lake and (in Option B) on the trail; and by camping restrictions associated with the work project. The physical effects of transport would total approximately 2-3 days in Option A or 14 days in Option B, and the work project would take approximately one month to complete (less in Option A, more in Option B).

**Alternative 2:** Visitor expectations of naturalness, remoteness and solitude would be impacted by the sight and sound of helicopters, by landings at the lakes (reduced slightly from Alternative 1) and by camping restrictions associated with the work project. Effects to visitor experience would be increased by trail encounters with stock trains. These effects are considered traditional and acceptable. The physical effects of transport would total approximately 12 days (4 days with helicopters and 8 days with stock - NOT done simultaneously because of site constrictions) and the work project would take approximately six weeks to complete.

**Alternative 3:** Visitor expectations of naturalness, remoteness and solitude would be impacted by the sight and sound of equipment using the trail corridor and at the dam (considered an intrusion of wilderness character) and by camping restrictions associated with the work project. The physical effects of transport would total approximately 14 days and the work project would take approximately three weeks total to complete, but access wouldn't begin until October 1.

**Alternative 4:** There would be no effects to visitor experience by helicopter use. Visitor expectations of naturalness, remoteness and solitude would be impacted by trail encounters with stock trains. These effects are considered traditional and acceptable. Camping restrictions associated with work project would be increased over Alternative 1 or 2. The physical effect of transport would total approximately 20 days (all days with stock and the work project would take approximately 115 days or two seasons to complete. Stock may be difficult to impossible to hire through outfitters during this time as it would coincide with bow season.

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**Societal/Political Effect**

**Common To All Alternatives:** The TCCW&SD remains liable for damages associated with dam failure.

**Health and Safety Concerns**

**Common to All Alternatives:** All work, when completed and accepted by Forest Service engineers, would meet Federal Dam Safety requirements including passing ½ the "probable maximum flood" on the Tin Cup Dam.

**Alternative 1:** There would be some risk of severe injury or death associated with helicopter use. There would be some risk associated with use and transport of hazardous materials (to on-site workers, visitors and down-stream properties). This alternative would meet the Federal Dam Safety requirements in 2003.

**Alternative 2:** There would be some risk of severe injury or death associated with helicopter use (but slightly less than in Alternative 1). There would be some risk associated with use and transport of hazardous materials (to on-site workers, visitors and down-stream properties). There would be some risk of moderate or severe injury associated with stock use. This alternative would meet the Federal Dam Safety requirements in 2003.

**Alternative 3:** There would be some risk associated with use and transport of hazardous materials (to on-site workers, visitors and down-stream properties) and heavy equipment. This alternative would meet the Federal Dam Safety requirements in 2003 if the weather cooperates and allows the work to be completed in October. The delayed start date increases risk of additional delays or not completing the work because of adverse weather conditions.

**Alternative 4:** There would be no risks associated with helicopter use. There would be no risk associated with use and transport of hazardous materials. Risks would be greater than in Alternatives 1 or 2 associated with increased stock use, length of time required to complete the project and physical demands associated with traditional tools. There would be increased risk to properties, resources, and habitats within the flood plain associated with partially completed work withstanding lake fluctuations over a number of years.

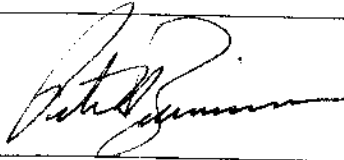
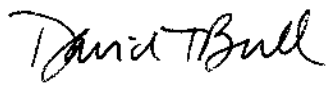
**Formulate a preferred action. Be specific and describe in detail below.**

Alternative 1, Option A meets two of the Regional Forest Service Manual Supplement 2300-98-1 requirements for proposals to use mechanized transport and/or motorized tools:

- **Emergencies or inescapable urgency – As shown in Step 1 part A there is no imminent danger of dam failure. However, it could fail during spring runoff in 2004. Homes and buildings in the town of Darby and some outlying areas, as well as Highway 93 near the creek could be flooded. Consequences could include loss of life, economic loss to residents and property owners, and damage to public and private natural and economic resources. Environmental damage could include loss of the threatened bull trout and its habitat in an along Tin Cup Creek. Thus, the urgency is there to do the required work this season.**
- **When costs make the use of primitive tools infeasible - Financial costs to the TCCW&SD in Alternatives 2, 3 and 4 would likely be unreasonable.**

Alternative 1, Option A most quickly meets Federal Dam Safety requirements (an area of high concern) and would affect visitor experience for the shortest amount of time (although this would be offset by the affects of motorized & mechanized use). These effects would be more ephemeral compared to the mechanized ground disturbing trail access options and alternatives.

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Approvals	Signature	Name	Position	Date
Prepared by:	<i>/s/ Marty Almquist</i>	Marty Almquist	Wilderness Ranger	09-07-2003
Prepared by:	<i>/s/ Debra Gale</i>	Debra Gale	Wilderness/Trails Program Manager	09-11-2003
Recommended by:		Peter N. Zimmerman	Assistant Planner	09-11-2003
Approved by:		David T. Bull	Forest Supervisor	09-11-2003