

ENVIRONMENTAL ASSESSMENT

Case File No.: AA-082237

AK-040-EA00-010

Type of  
Action: Land Lease and Recreation Permit

Location: Lot 3, Section 14, T. 16 N., R. 3 E., Seward Meridian

Applicant: F.K. (Red) Starr

Prepared By: Lands Staff  
Resources Staff

Preparing  
Office: Bureau of Land Management  
Anchorage Field Office  
6881 Abbott Loop Road  
Anchorage, Alaska 99507

Date: July 17, 2000

I. INTRODUCTION

A. Purpose and Need for the Proposed Action:

The Proposed Action would provide for a scenic tour experience for tourists and residents of Alaska. There is an increasing demand for eco-tourism type activities. Alaska has many scenic viewing opportunities, many of which are not accessible unless a service is provided by a tour operator.

B. Conformance With Land Use Plan:

The lands are within the boundary of the Alaska Southcentral Planning Area Management Framework Plan (MFP), dated March 1980. This type of Proposed Action is not specifically addressed, but is generally covered by Recreation Objective R-4 "Provide for the needs of visitors seeking an experience through sightseeing, photography, observation and/or interpretation" and Lands Objective L-1 "Satisfy state and local government needs as well as public and/or private demonstrated needs for lands as they arise." Additional guidance for this type action is provided by Visual Resource Objective VR-1 "Maintain the scenic quality of the physiographic regions."

C. Relationship to Statutes, Regulations, Policies, Plans or Other Environmental Analyses:

The Proposed Action may be authorized under regulations found in 43 CFR 2920 which provides for the issuance of long term leases of public land involving substantial construction and investment. Commercial recreation use of public lands is authorized under regulations found at 43 CFR 8372.

II. PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action:

The Proposed Action is to construct a staging/rest area for a recreational river boat business. Mr. F. K. (Red) Starr would like to start construction around April 17, 2000, in (portion of Lot 3) Section 14, T. 16 N., R. 3 E., Seward Meridian, Alaska. The application is for approximately two acres of land between the Old Knik River Road and the Knik River. Mr. Starr would like to move his heavy equipment (caterpillar) into the area before break up occurs as the Department of Transportation has a weight restriction on the Old Knik River Road after break up. Equipment to be used in constructing the driveway and parking area are 4 cu. yd. front end loader, D-6 cat dozer, 580C case backhoe, 10 yard end dump truck, chainsaws and shovels.

The site is adjacent to the south bank of the Knik River approximately 5.3 miles upstream from the Old Glenn Highway bridge. Access to the area is off the Old Knik River Road. The proposal includes excavation of soil and vegetation on

roughly one acre. A dirt driveway (30' x 150') and parking area (300' x 125') would be constructed. The driveway, parking area and staging area would be cleared and grubbed as necessary to allow shaping of the parking area and to provide sufficient slope away from the river bank. Approximately 4,000 cubic yards of topsoil would be removed and stockpiled for landscaping as needed. The applicant proposes to remove 40 trees: 16 spruce (4 live, 12 dead); 20 birch (18 live, 2 dead); and 4 cottonwood (4 live). Small brush and forb species would also be removed. Woody materials removed would be piled and utilized as firewood on site. Gravel would be placed on top of the cleared area to accommodate parking of vehicles. On site gravel material from the driveway cut would be used for the top cover on the parking area.

The following temporary improvements would be placed in the area: a portable rest room, picnic tables (3-5), either a motor home or a travel trailer as an office, fire pits and trash barrels. Garbage would be hauled away daily and portable rest rooms pumped as necessary. Electrical power would be from the existing Matanuska Electric Association line near the site to the trailer/motor home office. Telephone service would be available, but may be by a cell phone. The temporary improvements would be removed from the parcel after the season.

The operating season would be approximately May through September. Passengers would be brought to the site or arrive on their own. Once there they would unload and embark upon the river boats. The tour would proceed upstream to the foot of the Knik Glacier and possibly land to let the passengers touch the glacial ice. The tour would come back to the launch site where the passengers would off load and leave the site via ground transportation.

Mr. Starr agreed that the parcel of land cannot be closed to the public and there would be a stipulation stating that the public land would be open for public access to the Knik River.

Plans also call for the future construction of a boat dock to allow for the loading of passengers onto the river boats.

Eklutna, Inc. (Eklutna), in a letter dated January 17, 2000, indicated their concurrence with the Proposed Action. (Please refer to section III B, Land Status, for details regarding Eklutna's land selection.)

- B. No Action Alternative:  
Construction would not be authorized, but current management would continue. There would be no surface disturbance, no cutting of trees, no parking lot, no road, and no physical structures put on the public land.

III. AFFECTED ENVIRONMENT

- A. Critical Elements:  
The following critical elements of the environment are either not present or would not be affected by the Proposed Action or No Action alternative:
- Air Quality
  - Areas of Critical Environmental Concern
  - Environmental Justice
  - Farm Lands, Prime or Unique
  - Invasive, Non-native Species
  - Native American Religious Concerns
  - T&E Species
  - Wastes, Hazardous/Solid
  - Water Quality, Surface and/or Ground
  - Wild and Scenic Rivers
  - Wilderness

1. Cultural Resources:  
The first archaeological evidence of people in the Cook Inlet area comes from two widely separated sites: the Long Lake site on the Glenn Highway and the Beluga Point site on Turnagain Arm along the Seward Highway. The Long Lake site contained a core and blade assemblage that may be associated with the end of the Denali Complex (approximately 8000-9000 years ago)(Reger and Bacon 1996). The oldest occupation at Beluga Point dates to approximately 7000 to 8000 years ago, but cannot be more firmly dated. The cultural component of these core and blade assemblages are unknown (Reger 1996).

The people inhabiting the Knik River area at the time of first recorded history were Tanaina of the Susitna society, a group which occupied the Cook Inlet area from approximately Turnagain Arm in the west to Tuxedni Bay to the east. The Tanaina lived in winter villages located along the major salmon streams which provided much of their food stores. One settlement appears to have been located on the Knik River at some time during the 19<sup>th</sup> to early 20<sup>th</sup> centuries. Although the Russians came into contact with some Tanaina by the beginning of the 19<sup>th</sup> century, this was not as intensive as it was on the Kenai Peninsula. No Russian settlements

were located in the Cook Inlet area. Most European impact upon the Cook Inlet Tanaina began in the 1880's when salmon canneries began to monopolize fishing streams in the area (Townsend 1981).

Between the 1890's and the first two decades of the 20<sup>th</sup> century, Non-Native settlement of this area was stimulated by the search for gold, the discovery and subsequent exploitation of coal in the Chickaloon area, and the building of the Alaska Rail Road. During the Depression the Roosevelt administration selected 203 farming families from the upper Midwest to settle in the Matanuska valley. With a stable farming community, a mining industry, and the build up of the military along Cook Inlet during World War II, a base for the present day population established itself.

The Anchorage Field Office Cultural Resources Specialist made a field examination of the parcel on April 20, 2000. No cultural resources were found in the area of the Proposed Action.

2. Floodplains:

The Knik River flows through a glacial valley. Typically these valleys are "U"- shaped with valley floor slopes of less than four percent. Soils consist of materials deposited as moraines or more recently deposited alluvium. Course deposition of glacial till is common along with glacio-fluvial deposits and glacio-lacustrine deposits.

The Knik River falls under Rosgen's "D" Stream Type. This stream type is a multiple channel system often referred to as braided. Channel bed materials are predominantly cobble or gravel with strong bi-modal distribution of sands. These systems are characterized by high bank erosion rates, excessive deposition occurring as longitudinal and transverse bars and frequent shifts of river bed morphology. Conditions responsible for channel braiding include high sediment supply, highly erodible banks, and flashy runoff conditions which can vary from base flow to over-bank high flows on a frequent basis. Bed morphology is characterized by a series of rapids and scour pools formed by convergent/divergent processes that are very unstable. Bank material is generally finer than bed material and is conducive to erosion.

The stream bank within the confines of the Proposed Action is protected by vegetation growing on a shallow layer of organic matter. In several areas bank slumping can be observed, indicative of active erosion at the

toe of the bank. The slumping bank with the large woody debris helps protect the bank from further undercutting. Since the bank at this reach of the river is high, it is unlikely that flows top the bank frequently.

From the sketch provided with the application, it appears that the wooded area “buffer” between the parking lot and the river varies from approximately 50 ft. to 100 ft. in width.

3. Subsistence:

The subject lands are not Federal Public Lands under the definition found in the Alaska National Interest Lands Conservation Act (ANILCA) Sec.102(3)(B). The term public lands means “...lands situated in Alaska which, after the date of enactment of this Act, are Federal lands, except—land selections of a Native Corporation made under the Alaska Native Claims Settlement Act...”.

4. Wetlands/Riparian Zones:

The site of the Proposed Action is within the riparian zone of the Knik River. Vegetation consists of live and dead white spruce, paper birch and cottonwood with an under story of willow, alder and high bush cranberry. Disturbed areas adjacent to the road and beneath the power line right-of-way are dominated by blue joint grass.

The river front along the entire west edge of the site (approximately 600 feet), is an actively eroding river bank, with gravel deposits at the base of the bank, and finer glacial/alluvial deposits near the surface and covering the entire site. Bank slumping with large woody debris characterize the site. A shallow layer of organic topsoil supports the vegetative cover on well drained upland areas of the site. The site is seasonally wet, but well drained, and is not considered a wetland under the U. S. Army Corps of Engineers wetland classification system.

B. Land Status:

The subject lands have been withdrawn by Public Land Order (PLO) 3324 of February 7, 1964, and are administered by the BLM for use as public recreation areas and for preservation of public recreation values. The withdrawal was established because the area was recognized as having outstanding characteristics that were important to preserve. However, while PLO 3324 is a protective withdrawal, the land is not used in connection with the administration of federal facilities. As such, the lands were withdrawn, subject to valid existing rights, from all forms of appropriation pursuant to Section 11(a)(1) of the Alaska Native

Claims Settlement Act (ANCSA) and are available for selection and conveyance to Eklutna.

Eklutna has selected the township in which the subject lands are located pursuant to Section 12(a) of ANCSA. Eklutna is currently under selected by approximately 2,500 acres, thereby making conveyance of the subject land to Eklutna highly likely. Based upon the status of Eklutna land selection surveys in the area, conveyance could occur as soon as FY 2001. This conveyance is not discretionary. Upon conveyance, PLO 6590 would revoke PLO 3324 as to any lands conveyed to Eklutna.

The subject land is also encumbered by a 10' wide electric line right-of-way (case file AA-057743) issued to the Matanuska Electrical Association.

C. Fisheries:

The Knik River is a braided glacial system common to Alaska. Its waters carry high sediment loads which causes the water to remain turbid through the summer period. Usually, these streams clear during the winter under base flows. These systems often support a variety of fish in various life stages.

The Knik River is listed in the Alaska Department of Fish and Game's (ADF&G) Catalog of Waters Important For Spawning, Rearing or Migration of Anadromous Fishes. The Atlas associated with the catalog indicates the river is used by coho, chum and sockeye salmon for spawning. Spawning areas are most likely associated with up-welling areas in the channels.

Salmon hatched in glacial systems typically migrate to clear water tributaries or lakes to rear. However, while not documented in ADF&G's Atlas, some rearing stages of salmonid species could be utilizing the river, particularly during the winter.

D. Forestry:

The project area is located in a mature mixed spruce hardwood forest. White birch, cottonwood and white spruce are the predominant over story species represented. Most of the spruce within the project area have been killed by spruce bark beetle. Hardwoods within the stand are over mature with significant defect from wind throw, rot, and associated age related defects. Regeneration of spruce and hardwoods on the project area is sparse. There is no evidence that fire has recently affected the stand.

- E. Soils:  
The soils on this site consist of a dark gray stratified silt loam and fine sandy loam 25 to 60 inches thick lying over loose coarse sand, gravel, and cobblestones. The loamy sediment commonly contains buried lenses of organic material. Soils on this site are well drained because of the gravel substrate and direct proximity to the river.
- F. Vegetation:  
The site is within the Matanuska Valley area which is part of the Cook-Inlet-Susitna Lowland of Southcentral Alaska. The project area is on a river terrace within the flood plain of the Knik River, extending to the bank on the west side and the Knik River Road to the east. The dominant vegetation on the site is a birch forest with scattered white spruce and cottonwood. Under story vegetation consists of devil's club, rose, willow, alder and grasses. Disturbed areas in the utility right-of-way have revegetated with blue joint grass.
- G. Wildlife:  
The site, bounded by the river and the Knik River Road, is within a wildlife travel corridor used by animals moving between higher elevations and the river bottom. Moderate to low densities of moose occur in association with the shrubs and mixed forest on the site. Shed antlers on the site indicate some early winter use of the area by moose and tracks indicate year-long uses. Resident and migrant land birds nest and feed on the site's shrub habitats. Snowshoe hare are also common on the site as indicated by browsed vegetation. Black and brown bear may frequent the area, but are highly mobile and would be present for short periods of time. There are no known threatened and endangered wildlife species within the area.
- H. Recreation and Visual Resources:  
Most access to the land comes from the Knik River Road. Recreation use is made by hunters during the fall moose season and some small game hunters. There is limited use made by berry pickers, hikers and skiers because of a lack of trails. Some access occurs from boats coming up the Knik River.

The scenic quality of the area rates at 24 points, which is in the Class A scenic category. The minimum rating for Class A is 19. This area is managed under a Class I Objective. This management class identifies the different degrees of modification allowed to basic elements of the landscape. The Class I Objective is to preserve the existing character of the landscapes. The level of change to the characteristic landscape should be very low and must not attract attention. In part,

because of these outstanding characteristics and values, the area was withdrawn for “preservation of public recreation values.”

There are no components of the Wild and Scenic Rivers System in this area. This area is not within or adjacent to a Wilderness Area.

I. Socioeconomic:

The economy of Alaska is based in a large part upon tourism. The economic contribution to the local area from tourism is important. Support of the tourism industry results in employment for large numbers of people.

IV. ENVIRONMENTAL CONSEQUENCES

A. Impacts of the Proposed Action:

1. Cultural Resources:

There are no impacts expected to cultural resources since no cultural resources were found during the inventory. Standard cultural stipulations would be required to protect any unknown resources that could be encountered.

2. Floodplains:

The Knik River is actively moving across the flood plain. The historic Old Knik River Road has already been removed by the river (in this area). Aerial photographs reveal that at this site, the bank is eroding approximately 2.5 ft./year. Recreation use of this bank would further accelerate the erosional process unless stabilization measures are taken to slow the process.

The principal impact would be the loss of approximately two acres of riparian habitat in the flood plain from the area cleared for road access, parking facilities and the pathway to the river. An increase in bank erosion would result from clearing stream bank vegetation to allow river access.

3. Wetlands/Riparian Zones:

The Proposed Action would permanently remove riparian vegetation from the site. BLM policy requires minimizing loss of riparian communities due to the importance, function and sensitivity of these areas. The clearing of the forest and building a driveway, parking lot, picnic area and pathway to the river would cause an irreplaceable loss of forest and shrub habitat within the riparian zone. Intensive human use of the pathways to the river would result in river bank trampling and accelerated erosion beyond the 70

feet of bank loss over the last 30 years due to natural processes. A 30 foot wide pathway for passengers to the river from the parking lot would expose more area to surface and bank erosion than a narrower trail. This trail cannot be relocated to reduce potential bank erosion on the site and constant maintenance would be required. The river channel is currently actively eroding the bank approximately a quarter mile upstream and this erosion point will progress downstream. Natural erosion of the bank may increase in the next few years without aggravation from human activity. The historic Old Knik River Road was eroded away in this same area over 50 years ago.

4. Fisheries:

Since the river naturally carries a high sediment load, any additional sediment that would result from the proposed facilities would not have an impact on fish habitat.

5. Forestry:

The Proposed Action would remove a total of 25 trees from approximately two acres of dead and over mature timber. This removal would include five dead white spruce, one cottonwood, and nineteen birch with a total volume of 371 cubic feet. The action would remove the area from long term production of timber volume. Regeneration of a new timber stand would not occur since the affected area would be converted to an access road and parking lot. With the removal of dead and dying timber, fire fuel loads on the project area would decrease along with the potential for wildfire. However, with the use of camp fires the potential for man caused fires may increase because of the down canyon winds carrying sparks from the fire pit into the adjacent wooded areas.

6. Soils:

The organic mat would be stripped from the site exposing the surface organic soil layer. This organic layer would then be leveled or removed as needed to form a base for the parking lot and administrative site. Organic soil may form an adequate base for the proposed purpose. If not, gravel may be hauled in from the access road cut to surface the site where necessary. The organic layer would not redevelop to its previously existing state as long as the site remains active. The planned activities would result in additional soil compaction and potential bank erosion of the area.

7. Vegetation:

The proposed project would result in the loss of two acres of cottonwood forest and shrub along the Knik River. The area is characterized by loose, wind deposited soils and episodes of high winds coming out of the Knik Canyon (“Knik Wind”) during late winter/early spring, when the ground is bare of snow, but green-up has not yet occurred. This vegetation provides a windbreak between the Knik River and the Knik River Road. Removal of the vegetation could result in additional loss of vegetation from wind throw and soil blowouts, which could accelerate the natural erosion process of the Knik River. Disturbed areas not covered in gravel would likely revegetate in blue joint grass.

8. Wildlife:

The impacts of clearing the forest and building a driveway, parking lot, picnic area and pathway to the river would cause an irreplaceable loss of forest and shrub habitat within the flood plain of the river. It would also cause a displacement of moose and land birds from those habitats.

The river bank at the site is highly erodible, and use of the gravel bar and river bank to dock boats and load passengers would accelerate bank erosion and contribute to loss of riparian wildlife habitat. Increased accessibility created by the parking area and improved access to the river may cause increased foot traffic use of the river bank, thereby accelerating erosion and loss of vegetative cover and wildlife habitat.

The presence of food materials or garbage at the site increases the likelihood of both black and brown bears being attracted to the source and becoming problem bears. There is potential for encounters with bears by persons using the facility and its picnic grounds, increasing the chance of the taking of bears for the defense of life and property.

The presence of fire pits and use would increase the risk of wild fire for the site and surrounding private land, and may encourage wood cutting for fire wood once the supply of wood provided from clearing the site is gone. This would eliminate trees in the buffer areas and eliminate cover along this wildlife travel corridor. Loss of useable wildlife habitat due to loss of vegetation and human disturbance during the use season would impact an area considerably larger than the developed site.

9. Recreation and Visual Resources:

There are several concerns resulting from opening access to the site and river. These include:

Vandalism. During the use season, there are more than 20 hours of daylight, which prompts late night use and loitering. During the off season (winter) the site would likely be used as a pull-off and attract party goers. This type of use could lead to an increase in vandalism to the site and an increase in wild fire potential.

Garbage. Additional garbage would be brought in by the visiting public. Most users are conscientious, but a minority would not clean up. While the applicant would be required to keep the area clean, an increased amount of trash would end up on public land outside the proposed permitted area.

Non-motorized boat put-in and take-out. This spot would serve as an ideal location to put in or take out non-motorized water craft for the public. Since there is currently no access for non-motorized water craft at this site, public access would be enhanced if the authorization provided for public access through the site.

Parking. With the potential for public use through the area, there would be an increased demand for parking. If people park out on the road, it would detract from the scenic quality of the surrounding area.

Loading Dock. The applicant would like to place a loading dock at the end of the pathway to load people into the boats and to park boats overnight. This would expose the dock and some portion of the pathway and parking area to people traveling up the river, detracting from the scenic quality. The Knik River is a Key Observation Point that was taken under consideration when determining the scenic quality. Another Key Observation Point is from the Old Knik River Road. With the construction of a driveway big enough to accommodate tourist buses, this would likely detract from the scenic quality of that area since there are currently no other disturbances between the road and the river in this area.

At this time the face of the Knik Glacier is up against a rock wall preventing passage of boats to Inner and Upper Lake George. The glacier is receding at a rapid rate. This area, known as "The Gorge", would likely be accessible within the next ten years. Once this event occurs, it is

reasonable to assume that there would be an increase in boat traffic on the Knik River. This would place increased human activity and pressure on the proposed site.

The Proposed Action does not meet the Class I Management Objective for the immediate area which is to preserve the existing character of the landscape. This would result in a decrease of the visual quality.

10. Socioeconomic:

The impacts of the Proposed Action to the socio-economic base of Southcentral Alaska would be very slight. It would provide income to the operator and some benefits to suppliers of materials utilized by the operation. The impact on the tourism industry would be slight because of the large tourism base.

B. Impacts of the No Action Alternative:

The No Action Alternative would not change current management. It would be managed as undeveloped public land subject to natural processes. Specific impacts to affected resources from this alternative are described below.

1. Flood plains:

The Knik River is actively moving across the flood plain. The historic Old Knik River Road has already been removed by the river in this area. Aerial photographs reveal that at this site the bank is eroding approximately 2.5 ft./year. This movement across the flood plain would continue.

2. Wetlands/Riparian Zones:

The river channel is currently actively eroding the bank approximately a quarter mile upstream and this erosion point will progress downstream. Natural erosion of the bank may increase in the next few years without aggravation from human activity. Some loss of riparian habitat would likely occur at this site.

3. Forestry:

The existing over mature timber stand would continue to deteriorate in the short term. Spruce bark beetle impacts will eventually result in the death of most of the mature white spruce in the area. Wind throw of over mature hardwoods would continue. Eventually, the over story stand would fall and allow natural regeneration of timber to occur. In the interim, the potential for wildfire would increase from the accumulation of dead

woody material. Over time, natural regeneration of spruce and hardwoods would occur resulting in a replacement timber stand available for use as forest products or as wildlife habitat.

4. Vegetation:

Vegetation would be subject to natural changes that occur as the forest stand matures and the river continues to erode the banks. The vegetation composition would remain relatively similar except in those areas where erosion removed the bank and soils.

5. Wildlife:

Human use in the general area would likely increase even without the development of the site. Increased human use would cause some displacement of wildlife from the riverine habitat. The impacts to wildlife and habitat would be minimal until the overall area was more highly settled or developed.

6. Recreation and Visual Resources:

Most impacts resulting from development of the site would not occur. Vandalism and garbage disposal could still occur on the site but with no access road or attraction, little vandalism or trash disposal is likely.

River boat traffic would increase as area population increases. If the Knik Glacier recedes allowing passage to Inner and Upper Lake George, an increase in boat traffic up the Knik River is likely.

Visual management objectives for Class I would be met.

C. Cumulative Impacts:

The impacts from the Proposed Action would add to the impacts from the clearing and development of undisturbed land occurring throughout the area. Demands from an increasing human population and the development of housing and business complexes are encroaching on natural areas. Clearing of vegetation would add a small increment to the decline in the scenic quality and overall visual resources of the Matanuska-Susitna Valley area. There would be a slight loss of available wildlife habitat, which added to habitat losses from other causes, would mean a general decrease in wildlife numbers over the area.

A slight increase to the economic base of the area would result from the development of the Proposed Action, adding to the growth and economic importance of the tourism industry.

D. Mitigation Measures:

To minimize the loss of riparian habitat through the construction of the driveway, parking lot and access to the river, the total amount of clearing should be minimized. The access way from the parking lot to the river should be reduced from 30 feet to no more than ten feet if boats will be launched at the site, and no more than six feet if access is by a foot path.

The river access pathway near the bank of the river should be constructed of elevated fiberglass grating materials to protect the bank and riparian habitat. The elevated grating has been used successfully by the Forest Service on the Russian and Kenai rivers to protect riverine habitat.

A minimum 50 ft. buffer of natural vegetation should be left between the parking lot and the ordinary highwater mark of the river bank. Areas that are not cleared and used for the parking lot, driveway or access to the river, must be undeveloped with natural vegetation left in place. An additional 25 foot buffer strip should be preserved next to the Knik River Road.

Any topsoil removed from the site should be stockpiled adjacent to the site and managed to promote natural regrowth to help maintain the viability of the soil. Topsoil can also be used for landscaping the site to promote vegetation regrowth and for erosion control applications. Stockpiling of material should be within the footprint of the project area, and sited to act as windrows, to minimize the impacts on undisturbed vegetation.

Woody material resulting from clearing the site and not suitable for use as firewood should be removed and not left piled on site.

No non-native (i.e., ornamental) plant species shall be planted on site. Any landscaping shall be in accordance with Executive Order 13148 which provides for the use of plants native to the area.

To prevent unwanted bear encounters and the taking of bears for defense of life and property, all garbage generated at the site must be stored in bear proof containers, and removed from the site to a designated landfill on a daily basis. This includes the removal of garbage generated by public use in the off season, as well as the management of litter.

No wood cutting should be allowed on the site, and camp fires must be restricted to fire pits. No large bon fires should be permitted, and tools used to extinguish

small fires must be on site at all times. Fire equipment present on site should include, at a minimum, buckets, shovels, and water.

If commercial recreational river boat operations cease, a complete restoration of the site with natural vegetation should be required.

E. Residual Impacts:

The loss of riparian land cover may hasten erosion along the Knik River and could lead to an increased rate of loss of the river bank. Scenic quality would be diminished in the developed area.

V. CONSULTATION AND COORDINATION

A. List of Preparers:

Jeff Denton, Subsistence  
Donna Redding, Cultural Resources  
Bruce Seppi, T&E and Wildlife  
Mike Scott, Fisheries  
Dave Kelley, Soils  
Debbie Blank, Vegetation  
Mike Zaidlicz, Forestry

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