ARIZONA GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP COMMITTEE
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL

Game Branch / HPC Project Number:	15-520

PROJECT INFORMATION

Project Title: Redevelopment of Catchment 52 – 96 Ranch #8

Region and Game Management Unit: 5/37B

Local Habitat Partnership Committee (LHPC):	**Was the project presented to the LHPC?**
• Tucson	**YES**[X] **NO**[]

Has this project been submitted in previous years? **YES**[X] **NO**[]
If Yes, was it funded? **YES**[] **NO**[X]→ **Funded HPC Project #(s)**:

Project Type: Redevelopment of existing water

Brief Project Summary:
This project will be the complete redevelopment of wildlife water catchment #52 – 96 Ranch #8. This catchment was identified as a "first priority" catchment for redevelopment due to failures and water hauling efforts in the 2002 Wildlife Water Development Team report. The existing 1400 gallon concrete vault system, constructed in 1947, is in dire need of replacement. To provide perennial water for wildlife, it will be redeveloped with a new 10,500 gallon 24" PVC pipe storage tank system with precipitation collection apron.

When previously proposed in 2007, deer NGO's suggested it be moved away from State Route 79 to avoid vehicle collisions with wildlife. The AGFD road kill database does not indicate that this is an issue and camera traps have shown high mule deer use on this catchment thus moving it may be counterproductive as generations of deer have learned that this is a perennial source of water.

Big Game Wildlife Species to Benefit: Mule deer, javelina, mountain lions

Implementation Schedule (Month/Day/Year):

Project Start Date:
September 1, 2014

Project End Date:
June 30, 2016

Environmental Compliance:
NEPA Completed: Yes[X] No[] N/A[]
Projected Completion Date: _____

State Historic Preservation Office - Archaeological Clearance:
Yes[X] No[] N/A[]
Projected Completion Date: _____

Arizona Game and Fish Department EA Checklist: N/A[]
To be Completed by: Joe Currie
Projected Completion Date: December 2016 if funded

PROJECT FUNDING

Special Big Game License Tag Funds Requested:	**$ 32,130** ($31,630+$500 for monitoring camera)
Cost Share or Matching Funds:	$20,000
Total Project Costs:	**$ 52,130**

PARTICIPANT INFORMATION

Applicant (please print):	**Address**:	**E-mail**:
Ben Brochu	555 N. Greasewood Rd.	bbrochu@azgfd.gov

Telephone: 520-591-7636	Tucson, AZ 85739	**Date**: September 1, 2015
AGFD Contact and Phone No. (If applicant is not AGFD personnel):		
Project has been coordinated with: Joe Currie (AGFD), Rachel McGee and John Patton (ASLD) - 8-6-07, 8-23-07		

NEED STATEMENT – PROBLEM ANALYSIS:

Game management unit 37B was once regarded as a premier mule deer unit. Its status is returning. Beginning around 1995, mule deer numbers in the unit began to decline and bottomed out between 2002 and 2005. Since 2005 they have been showing steady signs of recovery with significant increases beginning in 2008. Hunting permits have doubled since 2007 (500) as the AGFD now offers 1000 permits total between two hunts. No other unit in the state has shown increases in the mule deer herd or number of permits offered as 37B. While wildlife and habitat management is very dynamic and complex, the ultimate cause of the increase in the mule deer herd is likely for a variety of reasons, however we attribute it, at least in part, to an aggressive water development and redevelopment effort. Since 2005, 11 catchments have been developed/redeveloped, with the 12th planned for the spring of 2014. Camera monitoring efforts have confirmed that these catchments are being used heavily by wildlife, especially mule deer.

Water is a critical component of mule deer habitat. Deer habitat, no matter how attractive, will not be utilized if it is not near a source of water. Water sites should be no more than 2-3 miles apart and even closer in rough terrain (Wildlife Management Handbook, Managing Desert Mule Deer). WAFWAs Habitat Guidelines for Mule Deer support this suggesting that water sources not be more than 3 miles apart so all mule deer habitat is within 1.5 miles of a permanent water source (Brownlee 1979, Dickinson and Garner 1979). Water is extremely scarce in the range and is only present in earthen stock tanks after a heavy monsoon period and during the winter and early spring months and seldom lasts into May. Marshal et al. (2006) stated that water in the absence of forge and cover likely will not create mule deer habitat, but forage and cover in the absence of water may provide deer habitat, at least seasonally. Thus, catchments might make forage resources, which would otherwise be unavailable, available year-round. Further, where deer might otherwise make seasonal movements between parts of their range with forage and parts with water, developments may reduce the need for seasonal movements, make a greater proportion of the range and its forage available to deer, reduce competition for forage in exploited range, decrease risks associated with long-distance movements (e.g., Nicholson et al. 1997, Bleich and Pierce 2001) and, thereby, increase deer abundance (Krausman and Czech 1998).

Old Catchment 52

PROJECT OBJECTIVES:

- To increase deer and javelina populations by providing dependable, long term, self-sustaining, quality water sources and by increasing the use of otherwise unavailable forage resources
- To increase hunter opportunity
- To install systems that have a long lifespan (40-50 years for storage and collection systems, 25 years for drinking troughs)
- To install systems that do not require supplemental hauling except in rare or exceptional circumstances
- To install systems that have minimal visual impacts and blend in with surrounding landscape
- To install systems that are accessible and that requires minimal routine maintenance
- To monitor the use of these waters using remote digital game cameras

PROJECT DESCRIPTION AND STRATEGIES:
Utilize big game special tag funds and approximately 15-25 volunteers to install the new system.

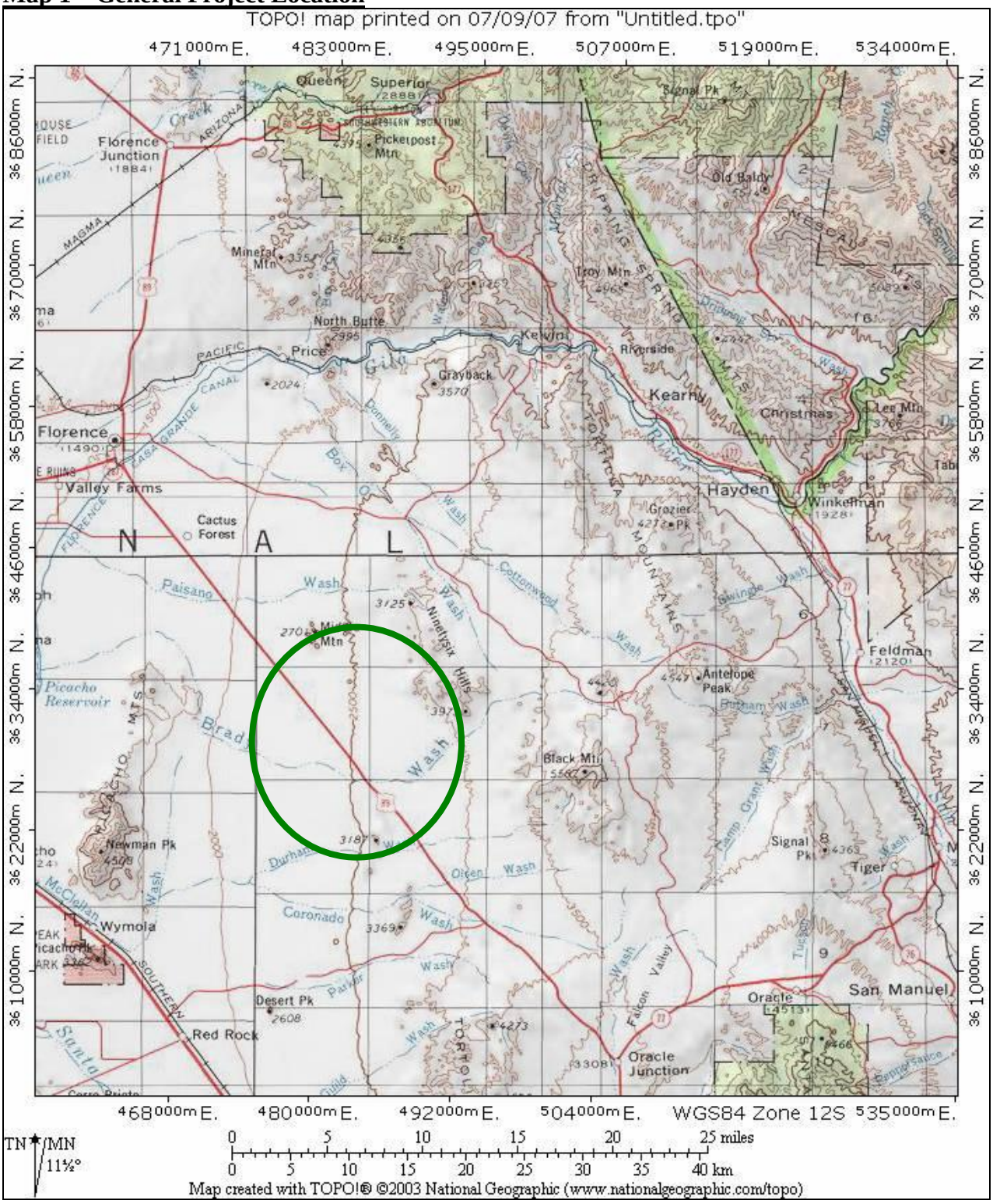
New Catchment 52 - (10,500 gallons) – purchase and install the following components:

- (4) 24”x100’ PVC pipe tanks
- (1) 3’ fiberglass walk-in drinker for PVC system
- 150’x150’ wildlife friendly piperail fence
- (1) 24’x72’ precipitation collection apron
- Required plumbing components

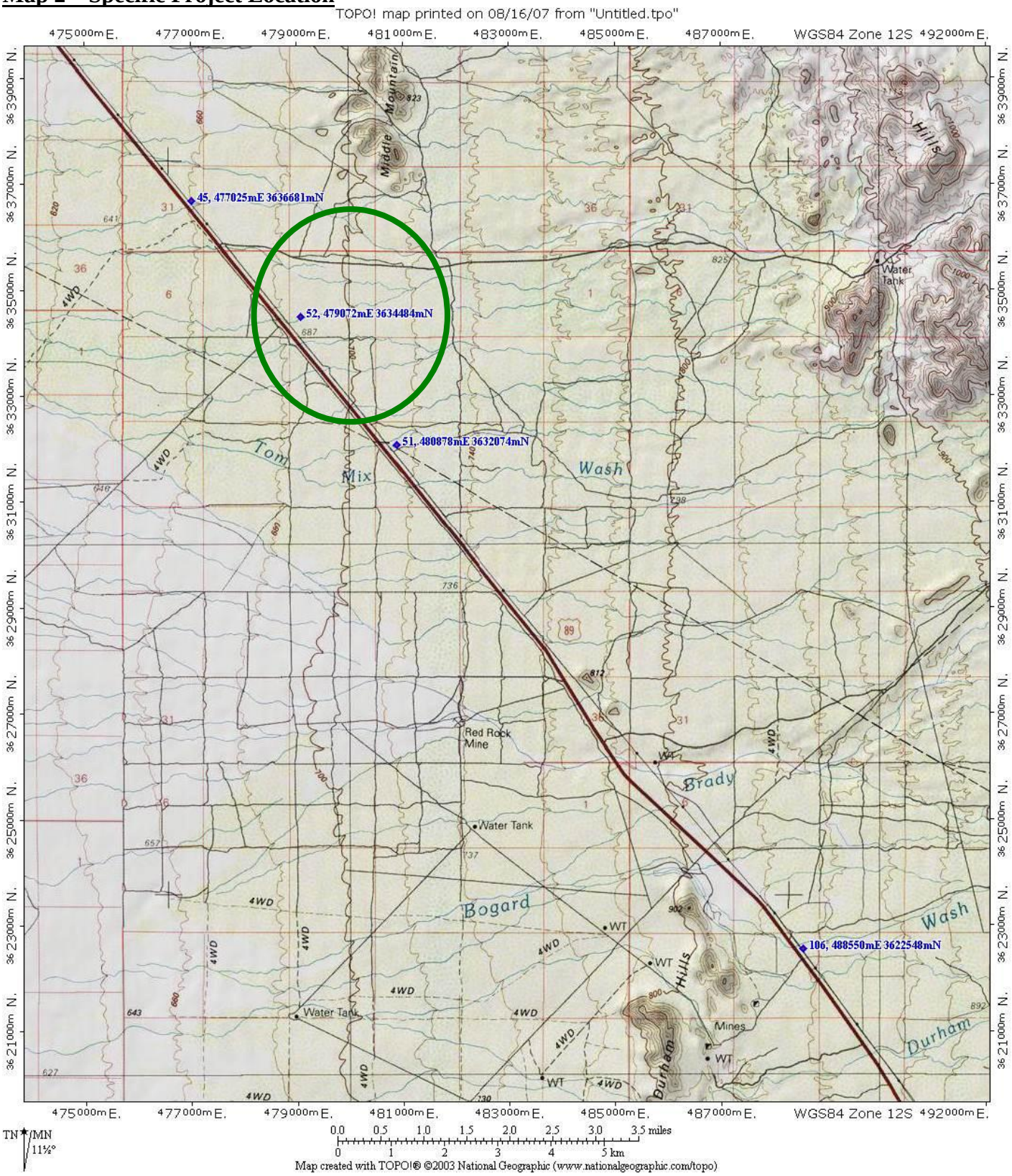
PROJECT LOCATION:
The project is located in central GMU 37B.

- **Maps 1 and 2 –** Project location in **GREEN** within GMU 37B

Map 1 – General Project Location



Map 2 – Specific Project Location



LAND OWNERSHIP AT THE PROJECT SITE(S)*:*
(if the project area is private property, please state specifically and provide the landowner's name)

- The project site is on land administered by the Arizona State Land Department, Tucson Field Office, 4455 S. Park Avenue Suite 101 Tucson, Arizona 85714 (520) 628-5480.

  IF PRIVATE PROPERTY, IS THERE A COOPERATIVE BIG GAME STEWARDSHIP or LANDOWNER AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?
  YES[] NO[] N/A[X]

HABITAT DESCRIPTION:
Game management unit 37B is located in Pinal County, Arizona, southeast of Phoenix. Two main biotic community types, Sonoran Desertscrub and Semidesert Grassland, comprise the bulk of the habitat in 37B. The catchment locations in the 96 Hills are represented by both community types. Common vegetation includes various types of grama grasses (*Bouteloua spp.*), bush muhly (*Muhlenbergia porteri*), turpentine bush (*Ericameria laricifolia)*, foothill palo verde (*Circidium microphyllum*), mesquite (*Prosopis spp*.), jojoba (*Simmondsia chinensis*), desert hackberry (*Celtis pallida*) and fairy feather duster (*Calliandra eriophylla*). Average rainfall is approximately 12-15" and elevation ranges from approximately 2800' to 3500'.

ITEMIZED USE OF FUNDS:

- **PVC System - 10,500 gallon - Catchment 52**

Item	Dimensions	Cost	Cost Share	Funds Needed
4- 24"x100' PVC systems (10,000 gallon) $3323 ea	24"x100' buried	$13,290		$13,290
3' walk-in trough for PVC system	3'	$3,500		$3,500
Plumbing/collection point components	varies	$1,000		$1,000
Piperail livestock exclosure fence	150'x150'	$3,700		$3,700
24'x72' precipitation collection apron	24'x72'	$6,000		$6,000
Backhoe rental if needed		$1500		$1500
Tax @ 9.1%		$2,640		$2,640
Labor		$20,000.00	AGFD, Volunteers	$0.00
Total		$51,630	$20,000	$31,630
Cost Per Catchment:		**$51,630**	**$20,000**	**$31,630**

- **Remote Digital Monitoring Camera: $500**

Special Big Game License Tag Funds
$32,130

Cost Share or Matching Funds (*for volunteer labor rates please refer to the worksheet below*)
$20,000

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:
I've had tremendous volunteer support and expect the same with this project.

- Below is an all inclusive list of potential cooperators.
  - AZSCI – volunteer labor and equipment
  - Arizona Deer Association – volunteer labor and equipment
  - Mule Deer Foundation – volunteer labor and equipment
  - Coues Whitetail.com chat room inquiries – volunteer labor and equipment
  - Tucson HPC: coordinate project funding opportunities
  - Arizona State Land Department – Arch and NEPA clearances

WOULD IMPLEMENTATION OF THIS PROJECT ASSIST IN PROVIDING, MAINTAINING, OR FACILITATING RECREATIONAL ACCESS?
YES[] NO[] N/A[X]

PROJECT MONITORING PLAN:
Remote digital cameras will be used to monitor density and frequency of wildlife water use all year long if cameras are available. This will enable the Wildlife Manager to make better informed decisions for the management of wildlife within GMU 37B.

Water levels will be monitored at least twice per year with emphasis during the warmer drier months by the Wildlife Manager. Additional monitoring will be conducted as needed. Minor maintenance will also be conducted as needed by the Wildlife Manager. The AGFD Development Branch will be responsible for major maintenance issues.

PROJECT MAINTENANCE:
The maintenance of each catchment will continue to be the responsibility of the AGFD. The Wildlife Manager will be responsible for coordinating this.

PROJECT COMPLETION REPORT TO BE FILED BY:
SSDV

WATER DEVELOPMENT PROJECTS (*please use the worksheet below***):**

TREE CLEARING/REMOVAL PROJECTS (*please use the worksheet below***):**

ARIZONA GAME AND FISH DEPARTMENT
WATER DEVELOPMENT WORKSHEET

PROJECT TITLE: Redevelopment of Catchment 52

1) Is the water development listed as a priority in the most recent "Wildlife Water Development Annual Implementation Schedule?"
Yes

2) Please list the Development Branch personnel and date coordinated with for this project.
Joe Currie – 8-6-07

3) What is the estimated annual inches of precipitation for the area? (mark one)
[]2-4 []4-6 []6-8 []8-10 []10-12 [X]12-14 []14-16 []>16

4) Is there a perennial water source available to big game within four miles of this project?

YES[X] (please complete #5 below) NO[] (skip #5 below)

5) For the accessible, perennial water source nearest this project:

Name of water source: Catchments 46, 45, 991, 51, 101, 100, 48, 102
Type of water source (catchment, spring, dirt tank, etc.): catchments
Ownership of water source: ASLD
Distance in miles from project: 1.27, 1.74, 1.74, 1.83, 1.96, 2.34, 2.91, 3.75

6) Is the target wildlife species a result of transplant efforts? YES[] NO[X]

7) Please list any special land management status for the project site (i.e. Wilderness, National Park, National Monument). If private land, list landowner.
N/A

8) Please provide the following information about access to the proposed site:
Type of access (mark one): [X]2x4 vehicles []4x4 only []foot only**

**If foot access only: Distance in miles:_____ Approximate hiking time: _____

-- Does access to this site require crossing private or tribal lands? YES[] NO[X]

-- Please describe any restrictions to public access: None

9) Please list below (or on a separate sheet) the material type and dimensions of each component proposed to be added, modified, or repaired.
See itemized use of funds section above.

10) Was a site visit completed? Yes[X] No[]
Site visits were completed with Joe Currie on 8-6-07 and with Rachel McGee (ASLD) on 8-23-07.