

# 1. PURPOSE AND NEED FOR ACTION

## 1.1 INTRODUCTION AND BACKGROUND

The Rio Grande bosque (bosque) has been a crucial ecological and cultural component for the Pueblo of Sandia for thousands of years. The river and the vegetation communities it supports are important sources of plants and animals on which the Pueblo of Sandia relies. However, this riparian ecosystem has undergone dramatic degradation in the past century due to flood control, water diversions, drought, and other human-caused and environmental factors. These changes have reduced flows in the river and induced encroachment by non-native saltcedar (*Tamarix ramossissima*) and other species, leading to a loss of habitat for wildlife, such as the endangered Rio Grande silvery minnow (*Hybognathus amarus*) (silvery minnow) (Sublette et al. 1990; Bestgen and Platania 1991) and Southwestern willow flycatcher (flycatcher) (*Empidonax traillii extimus*) (Sogge et al. 1997). In 2003, the United States Fish and Wildlife Service (USFWS) issued a Biological Opinion regarding the effects of water management practices on the silvery minnow, flycatcher, and several other species. The USFWS developed a Reasonable and Prudent Alternative (RPA) to avoid placing these species in jeopardy in accordance with the Endangered Species Act (ESA) (16 United States Code [USC] 1531 et seq.). The U.S. Army Corps of Engineers (USACE) and the Bureau of Reclamation (Reclamation) have accepted and are implementing the general provisions of the RPA.

Several federal documents outline a strategy for habitat restoration that would benefit these species and implement the provisions of the RPA. For example, the Middle Rio Grande Endangered Species Act Collaborative Program (Collaborative Program) Science Subcommittee (2004) wrote:

*Potentials for successful survival and recovery of silvery minnow populations along the reaches of the Middle Rio Grande that are subject to drying would increase with additional and larger regularly wetted (irrigated) refuge pools.* Collaborative Program Science Subcommittee 2004)

In recent years, restoring habitat for the silvery minnow has become a high priority for several federal, state, and tribal organizations. Reclamation has already implemented several such projects, including one in the Albuquerque Reach similar in scope and nature to the project proposed herein, the Pueblo of Sandia Rio Grande Bosque Rehabilitation Project (Project).

The Pueblo of Sandia has worked with Reclamation since 2000 to improve and restore terrestrial wildlife habitat in the bosque. Most projects to date have involved removing non-native saltcedar and Russian olive (*Elaeagnus angustifolia*). With Collaborative Program funding through Reclamation, the Pueblo of Sandia proposes to initiate additional habitat improvements by creating a high-water channel through the bosque, placing large woody debris (LWD) within the newly renovated channel, and planting approximately 5 acres (20,234 m<sup>2</sup>) of native woody vegetation. The goal of the Project is to improve the silvery minnow adult and juvenile over-wintering habitat, egg retention habitat, and rearing habitat. This Project fits well with the recommendations of RPA Element S of the 2003 Biological Opinion (USFWS 2003), which calls for the restoration 1,600 acres (6,474,970 m<sup>2</sup>) of habitat for endangered species.

## 1.2 PROPOSED ACTION

The Proposed Action involves implementing various restoration treatments on Pueblo of Sandia lands. Restoration activities will occur in the bosque area within and adjacent to a historic side channel that is no longer connected hydrologically to the mainstem river. The proposed restoration treatments include constructing a meandering channel, placing LWD within the newly renovated channel, and planting approximately 5 acres (20,234 m<sup>2</sup>) of native woody vegetation. The design of the proposed Project includes passive restoration to encourage the hydrology of the river to naturally create desired restoration effects (e.g., to continually shape the features of the ephemeral channel).

The Proposed Action will occur within the Rio Grande floodplain on Pueblo of Sandia lands during periods of low flow between September 1 and April 15. The proposed restoration work will occur on the east side of the Rio Grande, approximately 1 mile (1.6 km) south of the Pueblo of Sandia village and adjacent to the village of Corrales.

Ephemeral Channel. This treatment will be used to create aquatic habitat to accommodate flows in support of silvery minnow recruitment each year. The channel will be located in a historical side channel on the abandoned floodplain (riparian areas in the bosque are no longer regularly flooded).

The historic channel that is no longer functional during high-flow periods (due to the incision of the main channel) will be restored within its previous limits. The newly renovated ephemeral channel will be 1,680 feet (512 m) long, approximately 8 feet (2.4 m) deep, cover an area of 2.2 acres (8,903 m<sup>2</sup>), and have an average width of approximately 56 feet (17 m). Construction of the ephemeral channel will require eight to 10 weeks to complete and will involve removing existing vegetation and disturbing some sediment or soil. The channel will be cut to a depth that allows inundation at a mainstem discharge of approximately 2,000 cubic feet per second (cfs) or higher.

Excavation of the restoration site for the channel will begin above the ordinary high water mark (OHWM) and continue below the OHWM. An estimated 8.5 cubic yards (6.5 m<sup>3</sup>) of material will be generated per linear foot of the excavated channel, or approximately 14,280 cubic yards (10,918 m<sup>3</sup>) for the entire channel. This fill material will be placed along the bank of the new channel to strengthen it, and the remainder will be placed along the levee in already disturbed areas on the Pueblo of Sandia. No fill material generated during the proposed Project will be placed in the active river channel. Any excess fill that remains will be stored and used for future Pueblo of Sandia road improvements. Silt fencing will be used when disturbing sediments at ephemeral channel openings. Additional site preparation may include some maintenance for saltcedar sprouts and cutting or mowing weeds prior to channel construction.

The mouth to the channel will be left open, with no mechanical means of closure. Similar channels have been constructed at the Los Lunas Habitat Restoration Site adjacent to Los Lunas, New Mexico, and in the Albuquerque Reach near Central Avenue.

The high-flow channel option will provide benefits to the silvery minnow by providing a slow-moving habitat into which silvery minnow eggs could settle out of the current and into shallow areas where fish could spawn. The channel will dry during lower flows and is not designed to provide habitat for adult silvery minnows. In addition, riparian birds, mammals, reptiles, and amphibians will find improved habitat along the channel.

Large Woody Debris. This treatment involves placing LWD (root wads, trees, and branches) in the channel to create aquatic mesohabitats. LWD may be placed in high densities or dispersed throughout the channel; all LWD used during the Proposed Action will be placed in the channel and not anchored to the channel bed. LWD is available nearby to be placed in the channel to provide cover for aquatic species, especially the silvery minnow. This treatment also has the potential to armor the inlet and outlet of the newly renovated channel to increase the longevity of the channel feature.

Restoration of Riparian Vegetation. Replanting native riparian vegetation will be conducted during the proposed Project to encourage the establishment of desired species and help prevent the encroachment of noxious weeds. Following construction, approximately 5 acres (20,234 m<sup>2</sup>) of native plants, including coyote willow (*Salix exigua*) and Goodding's willow (*Salix gooddingii*), will be planted in patches along the margins of the channel to reduce erosion. Other native vegetation, including cottonwood (*Populus deltoides*), willow (*Salix* spp.) poles, and New Mexico olive (*Forestiera pubescens*), will be planted on disturbed areas (channel margins, access routes, staging areas, etc.). The plantings will stabilize the channel, reduce erosion, and provide habitat for silvery minnow egg retention. The channel will be lined with native willows, and native grasses will be seeded in other disturbed areas with a tractor and grass drill. Cottonwood pole planting or live trees will be planted at a density of 10 trees per acre adjacent to the channel. Holes for the poles will be drilled with an auger powered by a small Bobcat tractor.

Vegetation will be purchased from local stock to promote genetic compatibility with local native vegetation.

The Pueblo of Sandia will monitor the site for vegetative survival and regrowth, channel characteristics, and the presence of birds (especially the flycatcher) and other wildlife. Complete site restoration will likely take several years as plants get firmly established. Ultimately, long-term wildlife use (including the silvery minnow and flycatcher), habitation, and reproductive success will need to be assessed and quantified. Existing silvery minnow and flycatcher monitoring protocols established by the USFWS will be employed at the site. These long-term monitoring efforts will be addressed in detail with the creation of a Bosque Monitoring Plan. The Pueblo of Sandia conducts monthly monitoring of the silvery minnow with the USFWS. This monitoring has been conducted since 2002. The Pueblo of Sandia will explore the possibility of establishing monitoring sites in and around the project area after construction of habitat improvements.

### **1.3 PURPOSE AND NEED FOR ACTION**

The bosque has been a crucial ecological and cultural component for the Pueblo of Sandia for thousands of years. The river and the vegetation communities it supports are important sources of plants and animals on which the Pueblo of Sandia relies. However, this riparian ecosystem has undergone dramatic degradation in the past century due to flood control, water diversions, drought, and other human-caused and environmental factors. These changes have reduced flows in the Rio Grande, eliminated floods that used to occur in the bosque that created important wildlife habitat, and facilitated encroachment by non-native plants, such as saltcedar, Russian olive, and other non-native vegetation. In order to restore native species and native wildlife habitat, the Pueblo of Sandia has undertaken a series of measures aimed at reducing non-native vegetation and restoring native species. Implementation of the Proposed Action would satisfy the Pueblo of Sandia's management goals to re-establish a relict river channel.

This Project is funded by the Collaborative Program through Reclamation. The purpose of the Project is to create a high-water flow channel that would serve as spawning and rearing habitat for the silvery minnow and potentially provide habitat for the flycatcher and other riparian wildlife—an important component of the stated goals of the Collaborative Program. The need for the Proposed Action is to satisfy federal requirements under the Biological Opinion for Reclamation's Water and River Maintenance Operations, the USACE's Flood Control Operations, and Related Non-Federal Actions on the Middle Rio Grande, New Mexico 2003 (USFWS 2003). Specifically, there is a need to fulfill RPA Element S in the Biological Opinion to establish 1,600 acres (6,474,970 m<sup>2</sup>) of habitat for the silvery minnow and the flycatcher.

### **1.4 RELEVANT STATUTES, REGULATIONS, AND OTHER PLANS**

The Proposed Action will conform to the provisions of following regulations and associated federal and state agencies:

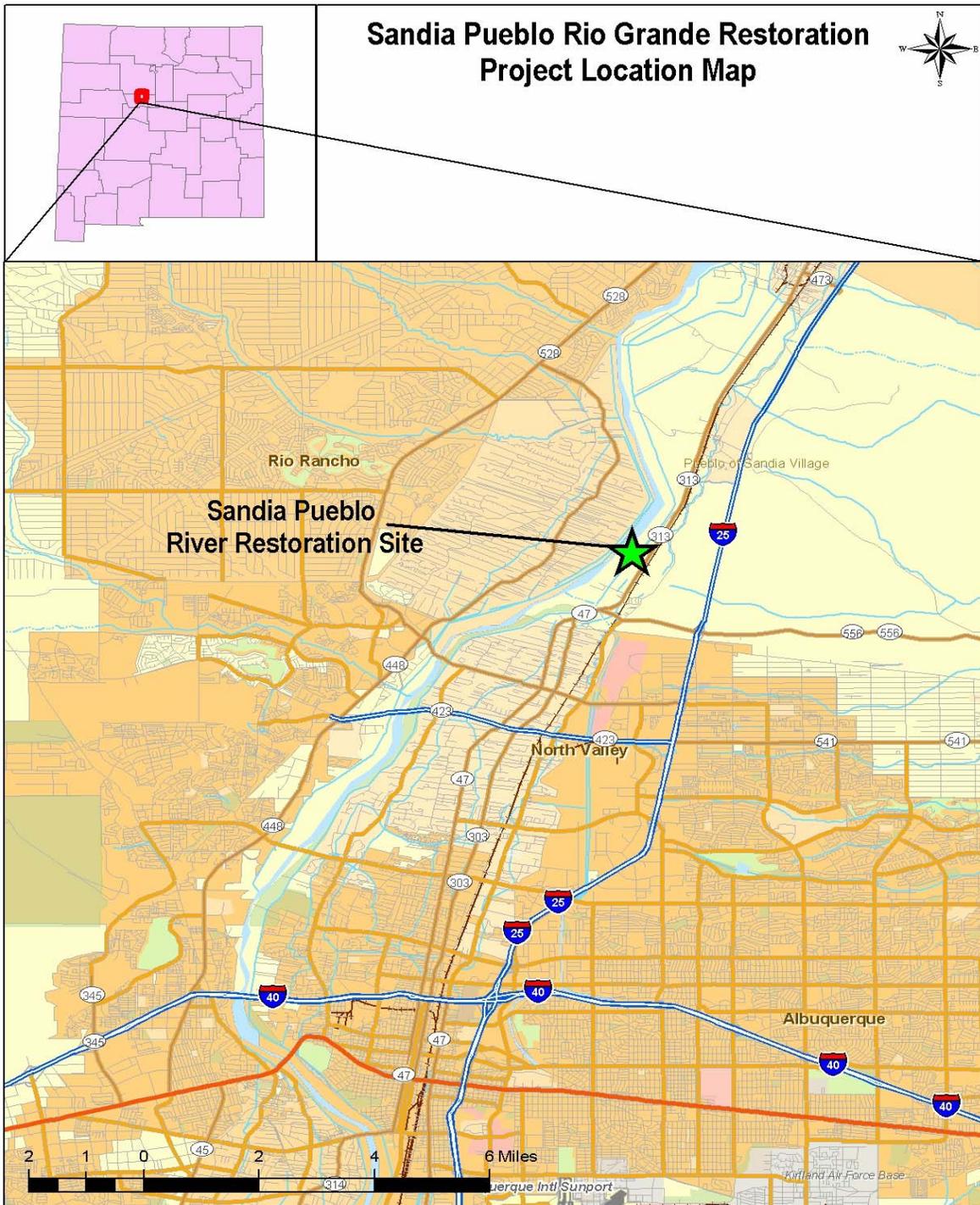
- American Indian Religious Freedom Act of 1978 (42 USC 1996)
- Archaeological Resources Protection Act of 1979 (16 USC 470)
- Clean Air Act of 1972, as amended (42 USC 7401 et seq.)
- Clean Water Act (CWA) of 1972, as amended (33 USC 1251 et seq.)
- Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 et seq.)
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, 1994
- Fish and Wildlife Coordination Act of 1958, as amended (16 USC 661 et seq.)
- Floodplain Management (Executive Order 11988)

- Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712)
- National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.)
- Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500 et seq.)
- National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.)
- National Pollutant Discharge Elimination System (NPDES), as amended (33 USC 1251 et seq.)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.)
- Protection and Enhancement of the Cultural Environment (Executive Order 11593)
- Protection of Wetlands (Executive Order 11990)
- Procedures for Implementing NEPA (33 CFR 230; ER 200-2-2)
- Secretarial Order 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act

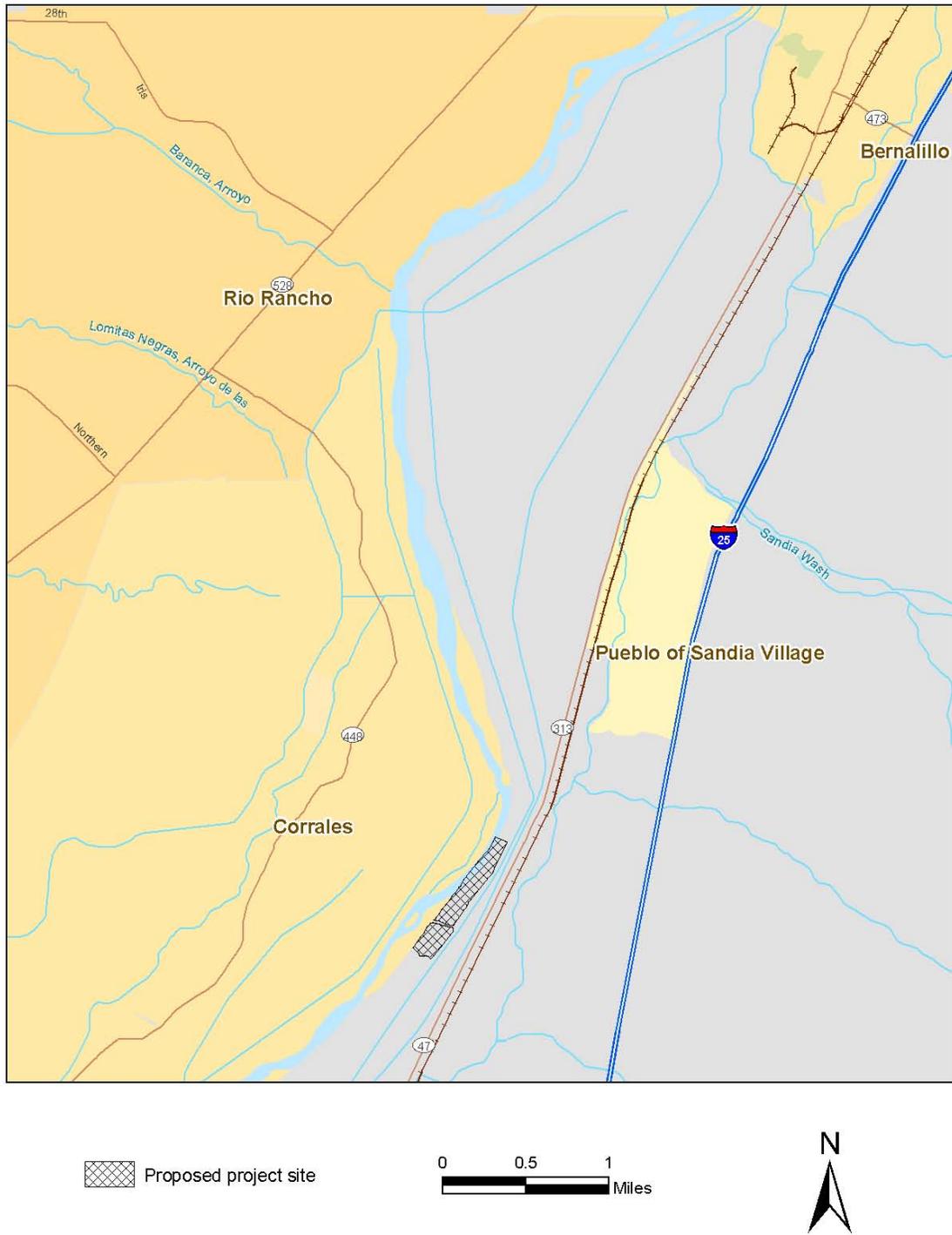
This Environmental Assessment (EA) also reflects compliance with applicable tribal regulations and statutes.

## **1.5 PUBLIC SCOPING ISSUES**

The proposed site has been designated as a natural area by the Pueblo of Sandia (Figures 1-1a, 1-1b, and 1-2). The project area exhibits no development, and there are no major public uses that are incompatible with the Proposed Action. The site has been intentionally left in a natural, undeveloped state, and there no grazing, hunting, or gathering takes place in area. The Pueblo of Sandia Tribal Council and the tribal general public have expressed their support of the Project, and the Pueblo of Sandia does not anticipate any controversy surrounding Proposed Action. The Pueblo of Sandia held one public meeting to inform local residents and stakeholders about the details of the Project. A draft Finding of No Significant Impact (FONSI) was provided with the Public Draft EA. No public comments were received by the Pueblo of Sandia Environment Department.

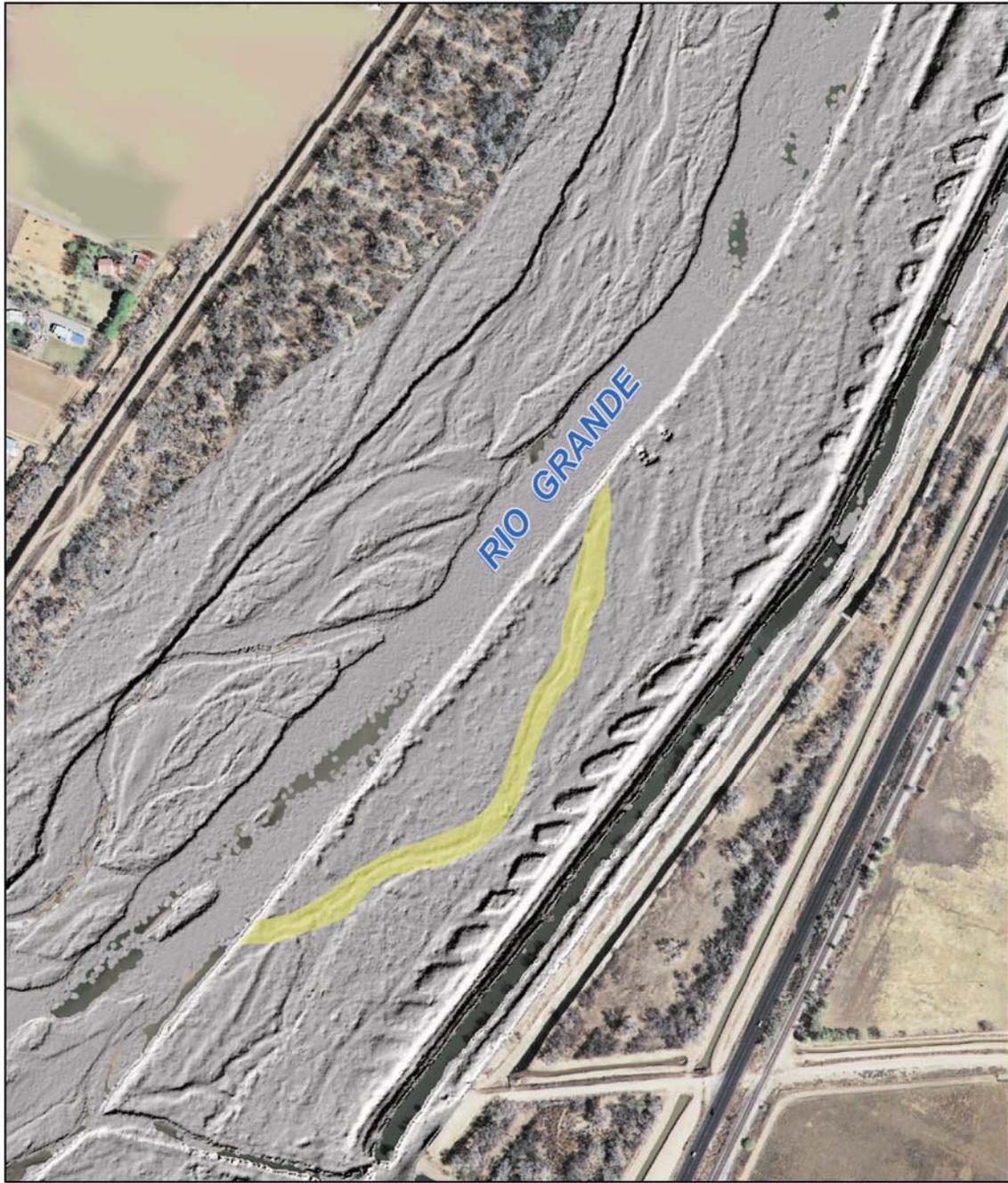


**Figure 1-1a. Project Location Map**



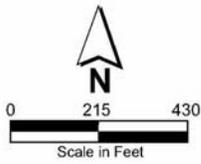
**Parametrix**

**Figure 1-1b. Sandia Project Site**



Parametrix Sandia Pueblo 575-4730-002/02(05) 8/07 (B)

Source: Simulated Land surface derived from LIDAR flight flown December 2006.  
Sandia Environment Department



 Proposed side channel

**Proposed Project Site**

**Figure 1-2. Proposed Project Site**