

GENERAL REEVALUATION REPORT AND
SUPPLEMENTAL ENVIRONMENTAL
IMPACT STATEMENT II:

RIO GRANDE FLOODWAY,
SAN ACACIA TO BOSQUE DEL APACHE UNIT,
SOCORRO COUNTY, NEW MEXICO

APPENDIX F-11

Real Estate

RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE
UNIT PROJECT
SOCORRO COUNTY, NEW MEXICO

REAL ESTATE PLAN

JULY 2013



**US Army Corps
of Engineers**

Albuquerque District
South Pacific Division

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RIO GRANDE RIVER FLOODWAY FLOOD RISK MANAGEMENT PLAN

REAL ESTATE PLAN ANALYSIS

1. INTRODUCTION:

This report is tentative in nature, focuses on the Recommended Plan , and is to be used for planning purposes only. There may be modifications to the plans that occur as implementation documents for each phase are developed, thus changing items such as the final acquisition area(s) and/or administrative and land cost. The Albuquerque District's integrated General Reevaluation Report (GRR) and Supplemental Environmental Impact Statement II (SEIS-II) addresses alternative plans to provide higher levels of flood risk management to floodplain communities along the Rio Grande River from the San Acacia Diversion Dam (SADD) downstream to Elephant Butte Lake, New Mexico, within the San Acacia to Bosque del Apache Unit of the Rio Grande River Floodway. This reach of the Rio Grande River was included in a comprehensive plan for flood risk management in the Rio Grande basin, originally authorized in 1948.

This GRR/SEIS-II is the final response to determine (1) whether the authorized project is still implementable; (2) if any changes are necessary for implementation; and (3) if the changes are within the approval authority delegated to the Division Commander, the Chief of Engineers, or if they require additional Congressional authorization. This GRR/SEIS-II presents recommendations on future actions to best meet the flood risk management needs within the study area. This Real Estate Plan (REP) is prepared under the general guidelines of ER 405-1-12, Chapter 2 and Chapter 12.

Measures and alternatives evaluated in the current and previous analysis efforts can be found in detail in the GRR Report at Table 4.1. A Reevaluation Report was completed in 1989 and a Supplemental EIS was completed in 1992.

The Recommended Plan is the National Economic Development (NED) Plan. This Real Estate Plan focuses on the recommended plan or National Economic Development (NED) Plan.

The recommended plans consists of an earthen levee extending approximately 43 miles along the west bank of the Rio Grande, from the San Acacia Diversion Dam to Tiffany Junction, which is approximately 3 miles north of the Railroad Bridge at San Marcial and ancillary features to the engineered levee. See Section 3 of the REP for further description of recommended plan.

a. INTERESTED PARTIES AND STAKEHOLDERS:

The principal land and facility managers in the Middle Rio Grande Valley include the Middle Rio Grande Conservancy District (MRGCD), Bureau of Reclamation (BOR) and the US Fish and Wildlife Service (FWS). The State of New Mexico (State Engineer and Interstate Stream Commission and Department of Game and Fish and Environmental Department) also has management roles and responsibilities in the project area.

This Proposed Project is being prepared in partnership with MRGCD and the New Mexico Interstate Stream Commission (NMISC), who are the interested non-federal cost sharing partners and would be the signatories to a Project Partnership Agreement. The Middle Rio Grande Conservancy District (MRGCD) and the State of New Mexico Interstate Stream Commission (NMISC) support the Recommended Plan (TSP). Partnership interests follow:

MRGCD: Local sponsor responsible for obtaining and granting access and easements for all phases of levee construction which fall under their jurisdiction, consisting of approximately 444.36 acres in project Segments 1 through 4 and a portion of Segment 5, provides input to USACE and non-federal cost share. MRGCD will assume operation and maintenance of levees which fall under their jurisdiction after construction and have done so historically using their cooperative agreement with BOR.

NMISC: Local Sponsor responsible for obtaining and granting access and easements for all phases of levee construction which fall under their jurisdiction, consisting of approximately 363.41 acres in a portion of project Segment 5 and Segment 6, provides input to USACE, non-federal cost share and review of overall project design and to ensure the project does not have implications to New Mexico obligations to the Rio Grande Compact. NMISC will assume responsibility for levee operation and maintenance in areas which fall under their jurisdiction after construction and have done so historically using their cooperative agreement with BOR.

BOR: The Bureau is a federal stakeholder for the project and is the managing federal agency of the lands of the Rio Grande channel and Low Flow Conveyance Channel (LFCC) for a large portion of the project consisting of approximately 608.95 acres in Segments 1 through 5 and a portion of Segment 6. The lands ownership is currently in dispute with the local sponsor, MRGCD, as explained in Section 5, paragraph 6 of this plan. As the ownership dispute is not resolved, the Bureau's approval for the project is necessary. Additionally, the Bureau constructed and maintains the low flow conveyance channel (LFCC) which exists throughout the entire project area and accounts for all of the federal benefits on the project.

DOI, U.S. Fish and Wildlife Service: The Service is an interested party for the portions of the project, consisting of approximately 196.34 acres that will be constructed and maintained within the Sevilleta and Bosque del Apache National Wildlife Refuges (NWR) located in Segments 3 and portions of Segments 5 and 6. NWR cooperation for the project is necessary. Additionally, there are a few NWR facilities that will be protected by the project.

The U.S. Army Corps of Engineers will be responsible for all engineering design, analysis, permitting and compliance, NEPA and ESA compliance, and construction and oversight.

b. BACKGROUND:

The study area has a long history of flood damage. Recorded flood history in the study area dates back to the 1920s. Before that time, newspaper accounts identify major floods that occurred in July 1895 and September 1904. Recorded major floods, which would have exceeded the methods for accomplishing flood risk management in the study area have been evaluated for compliance with Corps planning policy as well as the National Environmental Policy Act (NEPA), both of which were established after 1948.

MRGCD was formed in 1925, primarily because of concerns over a decrease in irrigated areas in the Middle Rio Grande Valley resulting from water shortages, poor drainage, inadequate irrigation facilities, and periodic flooding. From 1925 to 1935 the MRGCD constructed El Vado Dam, a storage reservoir on the Rio Chama, four major irrigation diversion dams on the Rio Grande one of which is San Acacia, two canal headings, 345 miles of main irrigation canals, and rehabilitated old irrigation ditches. The San Acacia Diversion Dam (SADD) diverts water from the Rio Grande to provide irrigation water to fields in the Socorro area. MRGCD operates and maintains irrigation and flood control management facilities in the Middle Rio Grande Valley.

Endangered or Threatened Species of the project area are the Rio Grande Silvery Minnow, the Southwestern Willow Flycatcher, the Interior Least Tern, and the Pecos Sunflower.

2. PROJECT AUTHORITY:

The Rio Grande Floodway, San Acacia to Bosque del Apache Unit flood control project was authorized for construction by section 203 of the Flood Control Act of 1948, as amended by section 204 of the Flood Control Act of 1950, and in accordance with the Chief of Engineers Report dated April 5, 1948, as found in House Document No. 243, 81st Congress, 1st Session.

The Flood Control Act of 1948 concluded the flood problems of the Rio Grande Basin were severe and could be addressed under the Corps' flood risk management program in conjunction with the BOR which would strive to provide a stable channel having a lower river bed so that controlled releases of 5,000 cfs could be efficiently carried and also provide a lower river bed so that the channel effectively drains the river valley lands and results in a lower water table. Due to changes within the basin over the years, including budgetary requirements, real estate constraints, flood risk management features implemented in the upper watershed, and environmental concerns the features of the project have changed several times.

The recommended levee plan has been divided into 20 phases and 6 segments (see Exhibit C) for funding and manageable construction purposes and construction contracts will be issued and sequenced from segment 1 to segment 6 with multiple contracts needed to build each segment, with the exception of segment 3 which is recommend as one contract. Local sponsors, MRGCD and NMISC, have requested that construction begin at the Socorro diversion channel and proceed south to Brown Arroyo. Three activities relating to the proposed work below the ordinary high water mark OHWM are planned and include 1) earthen levee construction; 2) placement of riprap along the riverward slope and toe of the levee and; 3) a temporary river crossing to access the east side of the river to excavate a terrace above the OHWM. Material

from the spoil bank will be used to build the proposed engineered levee, with some exceptions. The new levee cross section is narrower in the northern portion and gets larger as you proceed South than the existing spoil bank. The new levee design height is equivalent to the water surface elevation corresponding to the mean 1% chance flow, plus an additional 4 feet (base levee +4 ft).

In 1956 the United States Senate directed a review of the authorized plan (in addition to other elements contained in the Rio Grande Floodway) to determine whether any additions or modifications should be made. In response to this review an interim report was prepared, resulting in Cochiti and Galisteo Dams being authorized for construction by the Flood Control Act of 1960. In accordance with the recommendation of the Chief of Engineers, as found in House Document No. 243, 81st Congress, 1st Session, dated 5 April 1948, which reads as follows:

“The comprehensive plan for the Rio Grande Basin as set forth in the report of the Chief of Engineers, dated April 5, 1948, and in the report of the Bureau of Reclamation (BOR), dated November 21, 1947, all in substantial accord with the agreement approved by the Secretary of the Army and the Acting Secretary of the Interior on November 21, 1947, is hereby approved except insofar as the recommendations in those reports are inconsistent with the provision of this Act and subject to authorization and limitations set forth herein.”

The approval granted above shall be subject to the following conditions and limitations:

a. Construction of the spillway gate at Chamita Dam, later relocated and renamed Abiquiu Dam and Reservoir shall be deferred so long as New Mexico shall have accrued debits as defined by the Rio Grande Compact and until New Mexico shall consistently accrue credits pursuant to the Rio Grande Compact;

b. Chiflo Dam and Reservoir later relocated and renamed Cochiti Dam and Lake Project on the Rio Grande shall be excluded from the Middle Rio Grande Project authorized herein without prejudice to subsequent consideration of Chiflo Dam and Reservoir by the Congress:

c. The BOR, in conjunction with other interested federal agencies, is directed to make studies to determine feasible ways and means of reducing non-beneficial consumption of water by native vegetation in the floodplain of the Rio Grande and its principle tributaries above Caballo Reservoir; and

d. At all times when New Mexico shall have accrued debits as defined by the Rio Grande Compact all reservoirs constructed as part of the project shall be operated solely for flood control except as otherwise required by the Rio Grande Compact, and at all times all project works shall be operated in conformity with the Rio Grande Compact as it is administered by the Rio Grande Compact Commission.

A 1961 Senate Resolution directed further review of the 1948 Chief of Engineers Report to include the Rio Puerco and the Rio Salado.

Title 1 of the Water Resources Development Act (WRDA) of 1992 (Public Law 102-580) revised the project cost sharing as follows: “Notwithstanding any other provision of law, the project for flood control, Rio Grande Floodway, San Acacia to Bosque del Apache Unit, New Mexico, authorized by Section 203 of the Flood Control Act of 1948 (Public Law 80-858) and amended by Section 204 of the Flood Control Act of 1950 (Public Law 81-516), is modified to more equitably reflect the non-federal benefits from the project by reducing the non-federal contribution for the project by that percentage of benefits which is attributable to the federal properties; except that, for purposes of this subsection, Federal property benefits may not exceed 50 percent of the total project benefits” as directed by CECW policy guidance dated 22 February 1993. The cost-sharing for this project reduces the non-Federal share by the percentage of benefits attributed to federal properties.

3. PROJECT LOCATION:

The project area comprises a stretch of the Rio Grande extending from the San Acacia diversion dam (SADD), near the historic community of San Acacia and located 12 miles north of Socorro, south through the Bosque del Apache National Wildlife Refuge to the headwaters of BOR’s Elephant Butte Reservoir, south of the former village of San Marcial at Tiffany Junction. The San Acacia to Bosque del Apache Unit is the southern-most section of the Middle Rio Grande Valley, comprising 58 miles between the SADD and the northern end of Elephant Butte Reservoir just below the San Marcial Railroad Bridge. The principal city in this reach is Socorro with a 2010 census population of 9,051. In addition, six small agricultural villages occur on the flood plain: Polvadera, Lemitar, Escondida, Luis Lopez, San Antonio, and San Marcial. The project area is entirely contained within Socorro County, New Mexico.

4. PROJECT DESCRIPTION:

The San Acacia to Bosque del Apache Unit Project is a single-purpose flood control management project including mitigation of adverse effects. The Recommended Plan consists of replacement of the existing spoil banks to form a structurally sound levee paralleling the BOR Low Flow Conveyance Channel (LFCC).

The proposed project would remove approximately 43 miles of non-engineered spoil banks adjacent to the Rio Grande Floodway and replace them with engineered levees along the west bank of the Rio Grande capable of containing at least the mean 1%-chance flood event. The spoil banks were constructed with excess material removed while excavating the adjacent low flow conveyance channel (LFCC).

San Acacia Reach

The San Acacia Division has a markedly different floodway configuration than the two reaches directly to the north. The river here is unconstrained by a levee on its east side. The floodway can be over 2,000 feet wide in places and the river channel quite variable in width (from 100 to over 1,000 feet). Several small discontinuous drains on the east side of the river serve to drain water from relatively small farmed areas back to the river. The LFCC currently serves as the riverside drain on the west side of the floodway. The LFCC is larger and deeper than most other riverside drains in the middle valley. South of Escondida, the LFCC does not return water to the

river. Because of aggradation of the river bed, water in the LFCC is conveyed directly to Elephant Butte Reservoir. Significant bosque flooding can and does occur south of Escondida. Most irrigation, including that on the Bosque del Apache, occurs west of the floodway and is served by the Socorro Main Canal and the LFCC. In sharp contrast to the reaches to the north, sediment is being deposited by the river, and the river bed has aggraded in the reach from just north of NM-380 south. In some places near San Marcial the bed of the river is 5–10 feet higher than the valley floor to the west and 2–3 feet higher than the valley floor to the west, creating a significant flood risk. Levee sloughing, overtopping, and bank erosion of the levee are potential flood threats. Significant amounts of money are spent each year by the BOR and the ISC to keep the river channel open and reduce the risk of a levee failure. However, the existing flood risks significantly constrain upstream releases from the Corps of Engineers flood control reservoirs, which limits the potential for flooding of the bosque in upstream reaches.

Low Flow Conveyance Channel

The Middle Rio Grande LFCC is an artificial riprap lined channel that parallels the Rio Grande on the west side and extends the length of a 54-mile reach of the Rio Grande from San Acacia to San Marcial. The LFCC collects river seepage and irrigation surface and subsurface return flows, thus reducing evaporation. It is part of the 1948 Rio Grande Basin authorization for the purpose of reducing consumption of water, providing more effective sediment transport, improving valley drainage, and to aid delivery of Rio Grande compact waters. The LFCC has not actively diverted water from the Rio Grande since the 1980's but does deliver water to the MRGCD's Socorro diversion and to wetlands in the Bosque del Apache NWR. The LFCC is owned, operated, and maintained by the BOR. Construction began in 1951 and was completed in 1959. BOR estimates it spends \$2M annually on levee maintenance and the Interstate Stream Commission has spent \$11.3M over the past 9 years to dredge and maintain a pilot channel through the main stem of the Rio Grande to mitigate sediment accumulation at the headwaters of the Elephant Butte Reservoir, at the southern extent of the study area.

The usefulness of the LFCC is dependent upon the water level of Elephant Butte Reservoir. Depending upon the condition of the outfall, a maximum of 2,000 cfs can be diverted into the LFCC at San Acacia. Diversions from the river into the LFCC began in 1953, and diversions at San Acacia began in 1960. With above average water years the reservoir was relatively full through the 1980s. During this time the lowest reaches of the LFCC, which were inundated by the reservoir, became filled with sediment. This made the outfall of the LFCC difficult to maintain, and therefore diversions ceased in 1985. Since that time the LFCC has carried only drainage and irrigation return flows, with minor exceptions. Currently the spoil dike that protects the LFCC (and surrounding lands such as the Bosque del Apache National Wildlife Refuge) from Rio Grande flooding is threatened by overtopping downstream of the Bosque del Apache Wildlife Refuge because of sediment deposition in the river channel. Environmental groups have also raised concerns about the impacts of future LFCC operations on the bosque, wildlife resources, and endangered species in the river below San Acacia Diversion Dam. The states of Colorado, New Mexico, and Texas, and farmers in the lower Rio Grande have raised concerns that compact deliveries will be impaired if the LFCC is not operated. Due to these factors and the condition of the channel outlet, operations of the LFCC as originally intended are not currently possible.

In order to meet needs of the endangered Rio Grande silvery minnow, the BOR began pumping from the LFCC into the Rio Grande at four locations in 2000. These pump sites begin approximately 20 miles downstream of San Acacia Diversion Dam at the Neil Cupp pump site are located at the northern and southern boundaries of the Bosque del Apache National Wildlife Refuge, approximately 6 and 16 miles downstream respectively from the Neil Cupp location. Finally pumping occurs at the Fort Craig site approximately 10 miles downstream from the southern boundary of the Bosque del Apache National Wildlife Refuge. Fifteen pumps are currently available to supplement Rio Grande flows and manage river recessions consistent with the current Biological Opinion.



Low Flow Conveyance Channel Near Socorro NM

Current Land Uses

The Rio Grande corridor in Socorro County contains the largest contiguous undeveloped tracts of farmland in the Middle Rio Grande valley. The river and adjacent farmland function as a linked hydrologic and ecologic system, providing habitat to the endangered silvery minnow and southwestern willow flycatcher and some of the most significant remaining cottonwood–willow forest or “bosque” in the Rio Grande basin (in fact in the entire southwestern U.S.). The farmland in this reach, together with the managed field crops and wetland habitat at Bosque del Apache National Wildlife Refuge, provides winter habitat to more than 100,000 migratory waterfowl of the Rio Grande flyway. Farmland in the Middle Rio Grande valley is managed as small (less than 50 acres), medium (50 to 500 acres), and large (500 to 1,000 or more acres) farms. Socorro County operates more medium and large farms than the more populated counties of Valencia, Bernalillo, and Sandoval and cultivates more than 20,000 irrigated acres. The productive bottom lands of the Rio Grande produce some of New Mexico’s most delicious green chile and melons, and most nutritious alfalfa hay. The San Acacia reach stretches from the San Acacia Diversion Dam near the village of San Acacia southward to the Bosque del Apache National Wildlife Refuge and is contiguous with the Socorro Division of the Middle Rio Grande Conservancy District.

Recommended Plan

The San Acacia to Bosque del Apache Unit Project is a single-purpose flood control management project that includes mitigation of adverse effects. The Recommended Plan consists of replacement of the existing spoil banks to form a structurally sound levee paralleling the BOR Low Flow Conveyance Channel (LFCC). Adverse environmental impacts will be mitigated by revegetation in the floodplain and riparian zone of available areas reclaimed into the active floodplain.

The engineered levees will run approximately 43 miles along the west bank of the Rio Grande, from the San Acacia Diversion Dam (SADD) to Tiffany Junction, which is approximately 3 miles north of the Railroad Bridge at San Marcial. The Recommended Plan is located along the same alignment as the existing spoil bank system and parallels the LFCC.

The Recommended Plan is the National Economic Development (NED) Plan, which maximizes net economic benefits according to the GRR consistent with protecting the Nation's environment, as follows:

- The proposed levee embankment would have a crest width of 15 feet with 1V:2.5H and 1V:3H depending on the height of the levee. The levee height corresponds to 4 feet above the water surface elevation of the 1% chance mean exceedance event and levee height ranges from 1 foot at the northern end to 15.5 feet at the southern end.
- Material for the project would be obtained from existing spoil banks.
- For levee heights greater than 5 feet, 6-inch perforated pipe toe drain, discharge pipes into the LFCC, and risers as well as an 8-foot-wide by 4-foot-high inspection trench with 1V:1H side slopes would be required. In addition, a 2-foot-wide bentonite slurry trench would extend from 2-feet below the levee embankment crest to 5 feet into the foundation material.
- Ancillary features to the engineered levee in the project are 655 linear feet (LF) of concrete floodwall, approximately 3300 LF of overbank excavation, 2300 LF of channel excavation, approximately 6000 LF of soil cement bank armoring, approximately 395 LF roller compacted concrete, and rip-rap for erosion control at locations vulnerable to erosion from high stream velocities.

Earthen Levee Construction: The existing spoil bank will be removed, approximately one mile at a time, with bulldozers, scrapers, or excavators and the materials for the proposed levee will be stockpiled and mixed within the footprint of the levee alignment.

Riprap would be used for erosion protection along a total of 6.4 miles in various locations as determined by scour analysis of the riverward slope and toe for the proposed levee. Riprap would be installed in the areas most susceptible to scour during flood events and would be buried at depths of between 1 and 12 feet. It would be placed during levee construction when the area is dry.

Infrared aerials of the Rio Grande east bank were examined to determine the extent, if any, of induced damages which may be caused by placement of the proposed levee on the west bank. Those properties identified were then evaluated in the field for structure value and first floor elevation. Fifty (50) residential and commercial structures were located within the 100 year floodplain. The east bank inventory was generally limited to the small community of Pueblito, immediately upstream of Socorro, which sits on the west bank. The second area is northeast of the Village of San Antonio, consisting of residential and commercial structures along Bosquecito Road.

Aerial photos of floodplains downstream of the downstream extent of the proposed project were examined to determine the extent of induced flooding downstream attributable to the project. No properties were found. Any downstream flooding is more likely to occur because of changes in the Elephant Butte Reservoir stage rather than the Rio Grande flood stage.

5. REAL ESTATE REQUIREMENTS:

The current levee plan has been divided into 20 phases and 6 segments (see Exhibit C) for funding and manageable construction purposes. Construction contracts will be issued and sequenced from segment 1 to segment 6 with multiple contracts needed to build each segment, with the exception of segment 3 which is recommend to be completed under a single contract. Local sponsors have requested that construction begin at the Socorro diversion channel and proceed south to Brown Arroyo. As a result, the project's initial construction location will be known as phase 1, located in segment 1, beginning at the Socorro diversion channel with construction proceeding southward as funds allow for the funded fiscal year. As funds for the fiscal year are depleted, construction will cease until funding is in place for the project to proceed within the segment starting the next phase of construction. The project's phased construction will begin and end within a segment, by phases, as funding permits in the years ahead.

The requirements for lands, easements, rights-of-way and relocations (LERs/LERRDs) include permanent easements for construction of the engineered levee, an existing levee maintenance road, the levee footprint including a riverside 15' wide vegetation free zone, and ancillary features including a floodwall; temporary easements for access, staging areas, construction areas, and disposal areas; and fee interests required for environmental mitigation, totaling 1,147.9163 acres as outlined in the table below.

Most of the land needed for the construction, operation and maintenance of the proposed 43-mile engineered levee is currently owned in fee by either the Federal government or the NFSs. To the extent that neither the Federal Government nor either of the NFSs own the required LER, the NFSs will be responsible to provide the required LER as noted in the table below. Where the Federal Government owns the fee or otherwise asserts fee ownership, the Corps will work with the cognizant Federal agency to obtain, on behalf of the NFSs, all necessary rights to use such land for the purposes of the project.

The following acreage requirements were provided Albuquerque District Engineering Division. Maps are attached as exhibits.

Project Area	Project Feature	Acreage	Current Interest held by USA/ NFS	Standard Estate	Owner
Segments 1, 2, 3, 4, & 5 North of BDANWR	Levee	568.88	Fee	Flood Protection Levee Easement (FPLE)	⁴ USA (BOR/BLM)
Segments 3, 5 & 6 of BDANWR & SNWR	Levee	196.34	Fee	FPLE	USA (USFW)
Segment 6	Levee	51.1902	None	FPLE	Private
Segment 3	Levee	9.5	None	FPLE	ATSF/BNSF Railroad
Segment 1	Levee	8.0861	None	FPLE	City of Socorro
Segment 6 in Tiffany Basin	Spoil Disposal Sites	307.220	None	TWAE	Private
Segment 6	Temp Staging Areas	2.0	³ Fee	² TWAE	NMISC/TBD
Segment 6	Temp Construction Areas	2.0	³ Fee	² TWAE	NMISC/TBD
Segment 3 San Acacia Diversion Dam	Ancillary features: Temp Construction Area	1.2	Fee	TWAE	MRGCD
Segment 3 San Acacia Diversion Dam	Ancillary features: Floodwall	1.5	None	FPLE	BNSF Railroad
	Total	1147.9163			

Table 1.

¹ There is ongoing dispute between the BOR and the MRGCD regarding title to certain land in segments 1 through 4 and a portion of segment 5 of the project. The Federal position is that the land is owned in fee by the Government. This position is disputed by the MRGCD; however, for the purposes of project planning it is assumed that title is in the United States of America as discussed below.

²The precise location Temporary Work Area Easement will be determined at a later date in coordination with the construction contractor.

³The underlying estates are assumed to be held in fee by NMISC. A final determination of ownership will be made by the NFS prior to issuance of the certification of availability.

Lands required for mitigation are not noted separately. Mitigation consists of revegetation of areas disturbed during construction and will be completely within the project footprint. The lands required for mitigation are presently owned in fee by the Federal government or the NFS.

The MRGCD maintains and operates the project area from the SADD to an area north of the Bosque del Apache National Wildlife Refuge (NWR) as part of its contractual obligations outlined in a 1951 Agreement between BOR and the MRGCD for the Middle Rio Grande (MRG) Project. MRGCD will confirm its interest in the lands from Brown Arroyo to the northern boundary of the Bosque del Apache NWR. There is on-going dispute between BOR and the MRGCD regarding ownership of the land in (segments 1 through 4 and a portion of

segment 5) of the project. Therefore, the Corps will enter into an agreement with the Bureau to allow the use of the land for project purposes in the event that the Bureau prevails in the dispute.

MRGCD acknowledges that it will not receive a credit for the disputed lands. BOR does not object to the use of its lands for this project. A Special Use Permit for use of the disputed lands will be obtained through the Corps. The disputed lands comprise 568.88 acres.

Approximately 9.5 acres at San Lorenzo Arroyo, located approximately 3 miles south of the SADD, required for a levee tie back at the San Lorenzo drainage basin are owned in fee by MRGCD. MRGCD will receive credit for these lands as they were acquired subsequent to the 1951 MRG project are not among the disputed lands.

It is noted that lands in the BDANWR and SNWR are in Federal ownership administered by the United States Fish and Wildlife Service (USFWS); BOR currently utilizes lands under an agreement with USFS. A Special Use Permit for use of USFWS lands will be obtained through the Corps.

In addition to lands currently owned by the Federal government and the NFSs, the following additional lands are required for the project:

a. Approximately 307 acres are required in temporary construction easement at Tiffany Sedimentation Basin to support disposal activities during construction. These privately-owned lands will be used for disposal of any waste soil not appropriate for reuse in the engineered levee. The local sponsor will receive credit for acquisition of the 307 acre easement at Tiffany Sedimentation Basin.

b. Approximately 1.5 acres in permanent flood protection levee easement at the SADD will be needed north of the SADD for construction of ancillary features to the engineered levee consisting of a flood wall to be located within the railroad right of way. The local sponsor will receive credit for acquisition of the 1.5 acre permanent easement.

c. Approximately 8.0861 acres owned by the City of Socorro in permanent flood protection levee easement at North Socorro Diversion/Arroyo, located in vicinity of Socorro, NM are required for a levee tie back.

d. Approximately 51.19 acres of privately owned land south of the Bosque del Apache Refuge in permanent flood protection levee easement for levee construction. The local sponsor will receive credit for acquisition of the permanent easement

Real Estate requirements for the levee construction and temporary work areas include approximately 1,147.9163 acres. Approximately 15 feet in width, would be required along the entire length of the 43 miles of the levee project next to the riverside toe for a vegetation-free zone width, which is the maximum width required under existing vegetation on levee regulations. Additionally, an area of approximately 22 feet in width and 25 feet riverward of the LFCC, the existing maintenance road, is required for the approximately 43 miles of the project. Exact locations for construction staging areas have not yet been determined; however, the areas will be within the existing MRGCD/BOR area of the LFCC. The existing haul road adjacent to

and between the existing spoil-banks will be used for levee construction purposes. Turn-around areas will be located on the levee; therefore, no additional road easements and no new roads will be required.

The Sevilleta National Wildlife Refuge and Bosque del Apache NWR, managed by U.S. Fish and Wildlife Service, are a part of the National Wildlife Refuge System and subject to the provisions of the National Wildlife Refuge System Administration Act of 1966 (PL 89-669), which provides guidelines for administrations of lands and resources within the National Wildlife Refuge System. This Act authorizes the Secretary of the Interior to “permit the use of, or grant easements in, over, across, upon, through, or under any areas within the System for purposes such as, but not necessarily limited to, power lines, telephone lines, canals, ditches, pipelines, and roads, including the construction, operation, and maintenance thereof, whenever he determines that such uses are compatible with the purposes for which these areas are established.” A compatibility determination has previously been received from the Fish and Wildlife Service reflecting a finding of project interrelationship with refuge purposes and goals. Approximately 30.34 acres of the Sevilleta NWR, located just south of the SADD, on the east side of the river, will be needed for overbank and channel excavation purposes. The Non-Federal sponsors (NFS) will acquire, through the Corps, any rights from the USFWS necessary to use these federal lands in the Sevilleta NWR to include a temporary construction use agreement or permit for this purpose. In the south-central reach of the project, the project cuts through the length of the Bosque del Apache NWR. The refuge would be temporarily affected by all construction activities, including dust, noise, personnel, and the movement of large construction equipment. NMISC will acquire, through the Corps, any real property interest necessary to use these federal lands for this purpose.

The project has been divided into 6 segments and within each segment there are multiple phases. Currently, the phases are defined into 20 geographical areas due to the nature of the construction project and the federal appropriations mechanism. Each phase ends as funding is depleted in the fiscal year and each subsequent phase begins in the new fiscal year as funding is authorized. Exhibit C is a map of the proposed segments. Real Estate certification of sufficient real property interests to support construction will be accomplished adequately in advance of the project’s sequential phased progress and solicitations for construction contracts.

6. LERRDS OWNED BY THE NFS AND CREDITING:

The project’s 43 mile length crosses Federal, Private, Non-Federal Sponsor (MRGCD and NMISC) lands for the construction of an engineered levee, mitigation and spoil sites, and flood wall utilizing existing access roads for maintenance and operation purposes.

As discussed above, approximately 9.5 acres at San Lorenzo Arroyo, located approximately 3 miles south of the SADD, required for a levee tie back at the San Lorenzo drainage basin are owned in fee by MRGCD. MRGCD will receive credit for these lands as they were acquired subsequent to the 1951 Middle Rio Grande Project.

As noted above, there is an ongoing dispute between the BOR and the MRGCD regarding title to 568.88 acres of land in segments 1 through 4 and a portion of segment 5 of the project. The dispute is in over with lands purchased in connection with the Middle Rio Grande Project

constructed under the Flood Control Acts of 1948 and 1950. Besides improving and stabilizing the economy of the Middle Rio Grande Valley, the proposal sought to rescue and rehabilitate the Middle Rio Grande Conservancy District (MRGCD), organized with private capital in 1925 as a political subdivision of the State, but floundering by the late 1940s. To that end, the United States agreed to acquire the MRGCD's obligations and cancel all indebtedness in exchange for MRGCD's conveying and assigning "all of its property rights, including reservoirs, canals, dams, and flood-control works, together with its water rights, and including title and ownership thereto ... such property so conveyed to the United States shall be so held until Congress otherwise directs."

In September, 1951 United States and the MRGCD, entered into a contract pursuant to the Reclamation Acts of 1902, 1948, and 1950 (1951 Repayment Contract). Central to its terms was the transfer of title to all MRGCD works, defined as:

those structures, reservoirs, ditches and canals now constructed and operated by the District and those to be constructed or rehabilitated under the terms of this contract for the storage, diversion and distribution of water for use in the District, and the drainage of lands, together with rights of way therefor and for operation thereof.

The 1951 Repayment Contract provided that "title to all works constructed by the United States under this contract is vested in ...the United States until otherwise provided for by Congress, notwithstanding the transfer hereafter of any such works to the District for operation and maintenance."

The Federal position is disputed by the MRGCD however, for the purposes of project planning – the Federal position is: The 1951 Repayment Contract assigned all of the MRGCD's water filings to the United States. Not simply full repayment but also approval by Congress must predicate the reversion of title to the MRGCD under the MRG Project Act and the 1951 Repayment Contract. Unless and until a Federal Court of competent jurisdiction decides otherwise, or Congress acts to revert or re-vest ownership in the MRGCD, we presume title to the MRG Project works remains in the United States.

For the purposes of project planning it is assumed that title is in the United States of America. Therefore, no credit will be provided for any disputed lands as part of MRGCD's local cost share.

7. STANDARD FEDERAL ESTATES AND NON-STANDARD ESTATES:

Estates that may be required for this project are as follows: Fee Estate for diversion dam structure, Temporary Easements for levee, spoil/mitigation/disposal areas, construction and staging areas, and road easements for road access. There are no non-standard estates. The following estates are listed for reference at this time and may be required for the project and will be populated later.

FEE

The fee simple title to (the land described in Acquisition Schedule) (Tract Nos. ____, and ____), subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

FLOOD PROTECTION LEVEE EASEMENT

A perpetual and assignable right and easement in (the land described in Schedule A) (Tracts Nos. __, __ and __) to construct, maintain, repair, operate, patrol and replace a flood protection levee, including all appurtenances thereto; reserving, however, to the owners, their heirs and assigns, all such rights and privileges in the land as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

TEMPORARY WORK AREA EASEMENT

A temporary easement and right-of-way in, on, over and across (the land described in Schedule A) (Tracts Nos. __, __ and __), for a period not to exceed _____, beginning with date possession of the land is granted to the United States, for use by the United States, its representatives, agents, and contractors as a (borrow area) (work area), including the right to borrow and/or deposit fill, spoil and waste material thereon) (move, store and remove equipment and supplies, and erect and remove temporary structures on the land and to perform any other work necessary and incident to the construction of the _____ Project, together with the right to trim, cut, fell and remove there from all trees, underbrush, obstructions, and any other vegetation, structures, or obstacles within the limits of the right-of-way; reserving however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

BORROW EASEMENT

A perpetual and assignable right and easement to clear, borrow, excavate and remove soil, dirt, and other materials from (the land described in Schedule A) (Tracts Nos. __, __ and __); subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges in said land as may be used without interfering with or abridging the rights and easement hereby acquired.

MEMORANDUM OF AGREEMENT

A long term agreement between BOR and Corps of Engineers identifying the manner in which the project will be constructed, operated, repaired, and maintained for the anticipated duration of the project's beneficial existence and operation.

LICENSE/SPECIAL USE PERMIT

An agreement between BOR and Corps of Engineers identifying the manner, requirements, restrictions, and guidelines for construction work during each phase of the project.

There are no non-standard estates proposed or anticipated for the project.

8. DESCRIPTION OF ANY EXISTING FEDERAL PROJECTS IN OR PARTIALLY IN THE PROPOSED PROJECT:

The LFCC was constructed by BOR in the 1950's to aid the State of New Mexico in delivery of water obligated to Texas under the Rio Grande Compact (Compact). Prior to LFCC construction, the channel into Elephant Butte Reservoir was obstructed with sediment and vegetation such that no surface flows entered the reservoir, resulting in an estimated water loss of 140,000 acre-feet per year.

The Sevilleta NWR abuts the project area in the San Acacia vicinity and would be temporarily affected by all construction activities associated with the use of a 30.34-acre overbank area located just south of the SADD. In the south-central reach of the project, the project cuts through the length of the Bosque del Apache NWR. The refuge would be temporarily affected by all construction activities, including dust, noise, personnel, and the movement of large construction equipment. The LFCC is a valuable source of water for the Bosque del Apache NWR, which operates extensive water distribution systems throughout the refuge for waterfowl.

9. DESCRIPTION OF ANY FEDERALLY OWNED LAND NEEDED FOR THE PROJECT:

In addition to the disputed lands discussed in Section 6, the project will utilize lands within two U.S. Fish and Wildlife Service refuges; project requirements include 30.3 acres in the Sevilleta NWR and 196.3444 acres in Bosque del Apache NWR. The proposed project areas associated with these refuges contained acres are maintained and operated by BOR under the authorization of an existing Memorandums of Agreement/Understanding with USFWS.

Although the Project Partnership Agreement for this cost shared project will require that the NFS certify that sufficient property rights are owned by the NFS, to the extent land required for the project is owned or claimed by a Federal agency, the Corps will acquire from the Federal agency any federal interest necessary for the project. The Corps will acquire from the Department of Interior a license or special use permit for each parcel and for each phase of construction as well as a Memorandum of Agreement (MOA) for the entire project.

10. APPLICATION OF NAVIGATIONAL SERVITUDE TO THE LERRDS REQUIREMENT:

Not applicable.

11. PROJECT MAP:

Exhibit A depicts maps of the project area, Exhibit B is the associated land tract register and Exhibit C is the Segment Definition Map of the project area.

12. ANTICIPATED INCREASED FLOODING AND IMPACTS:

Hydraulic analyses performed by the Albuquerque District have indicated that implementation of the Recommended Plan, the engineered levee plan upstream of the San Marcial Railroad Bridge, has little to no effect on the likelihood of flooding to private and public lands.

Pre- and post-project floodplains on the East bank were evaluated to determine the change in equivalent annual damages (EAD) attributable to the proposed project. The start of damages was assumed to be the 10% chance exceedance event. The proposed levee projects do not have a measurable impact to the damageable property in the present condition, but a minor impact in the future. Therefore damage is di minimus.

13. COST ESTIMATE:

The cost estimate is based on November 30, 2012, Real Estate Cost Estimate prepared by Roger Jennings and Thurman Schweitzer, staff appraisers with the Fort Worth District, U.S. Army Corps of Engineers. The estimated land acquisition and administrative cost for the entire project is **\$ 998,620** as indicated in Table 2 below. The date of valuation for Lands and Easements is October 29, 2012.

LERRDS	ACRES	COST
Lands and Easements ((Includes Borrow Sites) (01 Account)	1147.9163	\$ 416,900
Incremental RE Costs (30% contingency) (01 Account)		\$ 125,070
Facility/Utility Relocations Costs (Includes 23% contingency) (02 Account)		\$ 0
Relocation Assistance Program P.L. 91-646 (Includes 23% contingency) (01 Account)		\$ 0
Subtotal LERRDs		\$ 541,970
*Non Federal Administrative Costs (including crediting) (01 Account)		\$ 174,150
Total Non-Federal LERRDs		\$ 716,120
**Federal Administrative Costs (01 Account)		\$ 282,500
Total Real Estate Costs		\$ 998,620

Table 2 – LERRDs and Cost

***Provided by Sponsor(s)**

****Provided by Albuquerque District**

A contingency for price changes through negotiations, undervaluation due to unknown conditions, court valuation differences, and unknown ownerships. No contingency is included for the Federally Owned Lands.

Typical Federal Real Estate costs include preparation of all Real Estate Reports, acquisition and review of all ownerships materials, review, coordination and planning meetings, review of documents, costs of legal reviews, mapping costs, and general administrative costs associated with the project, including monitoring activities. Here, the Federal Real Estate costs also include negotiation of use permits with BOR, BLM and USFS as necessary for each phase of construction.

14. PUBLIC LAW 91-646, RELOCATION ASSISTANCE BENEFITS:

Public Law 91-646, Uniform Relocation Assistance provides entitlement for various payments associated with federal participation in acquisition of real property. Title II makes provision for relocation expenses for displaced persons, and Title III provides for reimbursement of certain expenses incidental to transfer of property. There are no residential, tenant, business, or farm operations impacted by this project, i.e., no relocations are required.

15. MINERAL/TIMBER ACTIVITY:

Primary mineral resources that are present in the vicinity consist of sand and gravel. Commercial excavation and developed borrow pits exist in the Region, but not within the project area. Other mineral resources occurring in the area include barite, fluorite, calcite, uranium, silver, iron, perlite, and coal. The existing spoil-bank contains an appreciable quantity of excavated sand and gravel. There are no Oil and Gas activities/ownership within the project area. There are other mineral resources in the area, but not within the footprint of the project.

16. HAZARDOUS, TOXIC, AND RADIOLOGICAL WASTE IMPACTS:

According to the Hazardous, Toxic, and Radioactive Waste (HTRW) portion of Chapter 2, Section 2.3, of the Draft General Reevaluation Report and Supplemental Environmental Impact Statement (GRR/SEIS), Echota Technologies Corporation completed a Phase 1 Environmental Site Assessment on July 20 and August 8, 2005, of the project corridor in and around the Tiffany area which, includes the site of a former railroad maintenance facility roundhouse in the former town of San Marcial. Although the site is over 2,000 feet from the proposed levee alignment, the report states “if construction activities are anticipated near the former railroad facility, then a Phase II Environmental Site Investigation is recommended to verify the degradation of petroleum products”.

In addition, BOR operates two maintenance and storage facilities within the project area. The first maintenance facility is located 0.15 miles west of the SADD near the perimeter of the project limits, and the other is located 0.49 miles north-northwest of the LFCC near the Tiffany area. In the past, these two sites were identified as having some underground petroleum storage tanks leaks. BOR reported that the tanks were removed in 1991. The two sites are not expected to pose an HTRW risk unless construction activities are anticipated near either site. If construction activities are anticipated, a Phase II Environmental Site Investigation is recommended. None of these areas will be used for borrow areas, if borrow areas are needed.

17. NON-FEDERAL SPONSOR'S ABILITY TO ACQUIRE:

Assessments of the NMISC's and MRGCD's experience and capability to acquire real estate interest for the project are attached as Exhibit D and Exhibit E, respectively.

18. ZONING ANTICIPATED IN LIEU OF ACQUISITION:

There is no zoning modification proposed or anticipated at this time.

19. ACQUISITION SCHEDULE:

The following table is shown with Real Estate activities, projected for Phase 1 Fiscal Year 2013. Real Estate activities are planned to continue through the year 2026 to support the fourteen phases of construction that are planned. Schedules for future phases will be developed as funding is made available for this project. The detailed acquisition schedules will be developed for each Phase when the PPA has been executed and the final plans and specs developed for each Phase; and that Sponsors, PM and Real Estate Technical manager will formulate milestone schedule to meet dates for advertisement and award of construction contracts for each Phase.

Acquisition Tasks for Phase 1, Segment 3	Due
Real Estate Personnel meet with Non-Federal Sponsor (MRGCD)	After the Project Delivery Team has identified a Tentatively Selected Plan (completed)
Real Estate Plan (120 days) (actual <500)	28 Jun 2013
Prepare Acquisition Maps/Legal Descriptions for Phase 1 Construction	19 Oct 2012
Prepare Real Estate Cost Estimate	30 Nov 2012
Send Take Letter to NFS for Proof of LERRDs Ownership	03 May 2013
Real Estate Certificate of Sufficiency for Phase 1 Construction	28 Jul 2013
Obtain Right-of-Entry & License for Phase 1 Construction (MRGCD & BOR)	30Aug 2013
Prepare and Submit Credit Requests	14 Oct 2013
Review/Approve or Deny Credit Requests	14 Oct 2014
Establish Value for Creditable LERRDs	30 Nov 2014

Table 3.

The plans and specifications for phase 1 are being developed concurrently with the final review and approval of the General Reevaluation Report (GRR) and Environmental Impact Statement Report II. Phase 1 construction will begin 1000 feet west into the Socorro Diversion Channel to tie in the engineered levee to the Socorro Diversion then will proceed south along the existing spoil bank alignment south for approximately 3 miles.

Certification for construction of phase 1 is anticipated to be Aug 2013. All the necessary real estate interests for the entire project will be acquired or certification received in phases. The

current estimate is that total project will require 20 phases to construct based on an assumed federal funding level of \$10,000,000 per year. The Non-Federal Sponsors will be required to acquire the required real estate interests to support the construction of the project, one phase at a time and prior to advertisement of each phase of construction.

20. DESCRIPTION OF FACILITY AND UTILITY RELOCATIONS:

The term "relocation" shall mean providing a functionally equivalent facility to the owner of an existing utility, cemetery, highway or other public facility or town when such action is authorized in accordance with applicable legal principles of just compensation or as otherwise provided by Federal statute or any project report or House or Senate document referenced therein. Providing a functionally equivalent facility may take the form of adjusting, altering, lowering, raising, or replacement and attendant removal of the affected facility or part thereof. It is important to note that relocation assistance under Public Law 91-646 relates specifically to displaced persons, and should be distinguished from the separate concept of facility or utility relocations. Utilities and Facilities identified by District General Engineering Section and confirmed by Real Estate and described below. No facility or utility relocations are required for the project.

a. Facility Relocations: It is proposed to construct Project features consisting of a levee and a flood wall within the Railroad Right of way at the northern limits of the project adjacent to the San Acacia Diversion Dam in Segment 3. It has been determined that the features will not adversely impact the railroad facility and will not require adjusting, altering, or replacing the railroad facility.

b. Utility Relocations: Fiber optic communication lines, owned by CenturyLink (formerly Qwest), are known to exist within the spoil bank in Segments 5 and 6 and will be physically impacted as a result of construction of the engineered levee. If phases are funded as assumed, Segment 5 (phase 12) construction would begin at the earliest in federal fiscal year 2024. The Preliminary Attorney's Opinion of Compensability has determined that CenturyLink does not have a compensable interest in real property. A final attorney's opinion of compensability will be prepared. Neither the Government nor the Non-Federal Sponsor, MRGCD, has a legal obligation to relocate the communication line. As a result, any modification of the line or its location within the levee is not classified as relocation and any associated costs are not included as a LERRDs credit. A final opinion of compensability will be prepared as required by ER 405-1-12, 12-22. Total Project Cost (TPC) will be revisited in FY14 and adjusted as necessary.

21. ATTITUDE OF LANDOWNERS:

There is no known opposition to the project.

22. RISK LETTERS

Risk letters were sent to the two prospective non federal sponsors on 22 April 2013.



DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE NM 87109-3435

April 22, 2013

CESPL-AM-AB
Albuquerque Real Estate Branch

Mr. Subhas K. Shah
Chief Engineer
Middle Rio Grande Conservancy District
P.O. Box 581
Albuquerque, NM 87103-0581

Subject: Middle Rio Grande Floodway San Acacia to Bosque del Apache Project

Dear Mr. Shah:

During the planning and feasibility phase of civil projects, the U. S. Army Corps of Engineers identifies the estimated need and extent of real estate interests required for the proposed project. My staff and I have been working on the Middle Rio Grande Floodway San Acacia to Bosque del Apache Project real estate requirements and have come up with some initial estimates.

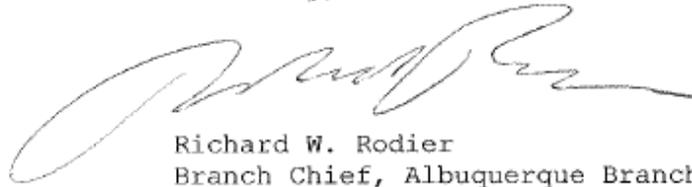
When real estate requirements are determined, Government regulations require us to send a letter advising the sponsor of the risks involved in acquiring necessary real estate interests prior to execution of the Project Partnership Agreement ("PPA").

This letter constitutes official notice of the risks involved with acquiring property rights for the proposed protection of the Middle Rio Grande Floodway for the flood control project located in the in the Middle Rio Grande Floodway from San Acacia Diversion Dam to Bosque del Apache Refuge, prior to the signing of the PPA. As the non-Federal sponsor, the Middle Rio Grande Conservancy District assumes full and sole responsibility for any and all costs, responsibility, or liability arising out of the acquisition effort. Generally, these risks include, but are not limited to, the following:

1. Congress may not appropriate funds to construct the proposed project;
2. The proposed project may otherwise not be funded or approved for construction.
3. A PPA, mutually agreeable to the non-Federal sponsor and the Government, may not be executed and implemented;
4. The non-Federal sponsor may incur liability and expense by virtue of its ownership of contaminated lands, or interests therein, whether such liability should arise out of local, state, or Federal laws or regulations including liability arising out of CERCLA as mentioned;
5. The non-Federal sponsor may acquire interests or estates that are later determined by the Government to be inappropriate, insufficient, or otherwise not required for the project;
6. The non-Federal sponsor may incur costs or expenses in connection with its decision to acquire or perform LERRD (lands, easements, rights-of-way, relocations, disposal areas) activities in advance of the executed PPA and the Government's notice to proceed which might not be creditable under the provisions of Public Law 99-662 or the PPA; and The non-Federal sponsor may initially acquire insufficient or excessive real property acreage which may result in additional negotiations and/or benefit payments under P.L. 91-646 as well as the payment of additional fair market value to affected landowners which could have been avoided by delaying acquisition until after PPA execution and the Government's notice to commence acquisition and performance of LERRD.

If you have any questions please contact Mr. Mark Turkovich,
at 505-342-3256/343-6270 or Mark.Turkovich@uasce.army.mil or
feel free to contact me at 505-342-3225 or
Richard.W.Rodier@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard W. Rodier', written in a cursive style.

Richard W. Rodier
Branch Chief, Albuquerque Branch
Asset Management Division
Los Angeles District
U.S. Army Corps of Engineers



DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE NM 87109-3435

April 22, 2013

CESPL-AM-AB
Albuquerque Real Estate Branch

Mr. Estevan López
Director
New Mexico Interstate Stream Commission
P.O. Box 25102
Santa Fe, NM 87504-5102

Subject: Middle Rio Grande Floodway San Acacia to Bosque del Apache Project

Dear Mr. López:

During the planning and feasibility phase of civil projects, the U. S. Army Corps of Engineers identifies the estimated need and extent of real estate interests required for the proposed project. My staff and I have been working on the Middle Rio Grande Floodway San Acacia to Bosque del Apache Project real estate requirements and have come up with some initial estimates.

When real estate requirements are determined, Government regulations require us to send a letter advising the sponsor of the risks involved in acquiring necessary real estate interests prior to execution of the Project Partnership Agreement ("PPA").

This letter constitutes official notice of the risks involved with acquiring property rights for the proposed protection of the Middle Rio Grande Floodway for the flood control project located in the in the Middle Rio Grande Floodway from Bosque del Apache Refuge to Tiffany Basin, prior to the signing of the PPA. As the non-Federal sponsor, the Middle Rio Grande Conservancy District assumes full and sole responsibility for any and all costs, responsibility, or liability arising out of the acquisition effort. Generally, these risks include, but are not limited to, the following:

1. Congress may not appropriate funds to construct the proposed project;
2. The proposed project may otherwise not be funded or approved for construction.
3. A PPA, mutually agreeable to the non-Federal sponsor and the Government, may not be executed and implemented;
4. The non-Federal sponsor may incur liability and expense by virtue of its ownership of contaminated lands, or interests therein, whether such liability should arise out of local, state, or Federal laws or regulations including liability arising out of CERCLA as mentioned;
5. The non-Federal sponsor may acquire interests or estates that are later determined by the Government to be inappropriate, insufficient, or otherwise not required for the project;
6. The non-Federal sponsor may incur costs or expenses in connection with its decision to acquire or perform LERRD (lands, easements, rights-of-way, relocations, disposal areas) activities in advance of the executed PPA and the Government's notice to proceed which might not be creditable under the provisions of Public Law 99-662 or the PPA; and The non-Federal sponsor may initially acquire insufficient or excessive real property acreage which may result in additional negotiations and/or benefit payments under P.L. 91-646 as well as the payment of additional fair market value to affected landowners which could have been avoided by delaying acquisition until after PPA execution and the Government's notice to commence acquisition and performance of LERRD.

-3-

If you have any questions please contact Mr. Mark Turkovich,
at 505-342-3256/343-6270 or Mark.Turkovich@uasce.army.mil or
feel free to contact me at 505-342-3225 or
Richard.W.Rodier@usace.army.mil.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. Rodier", written in black ink.

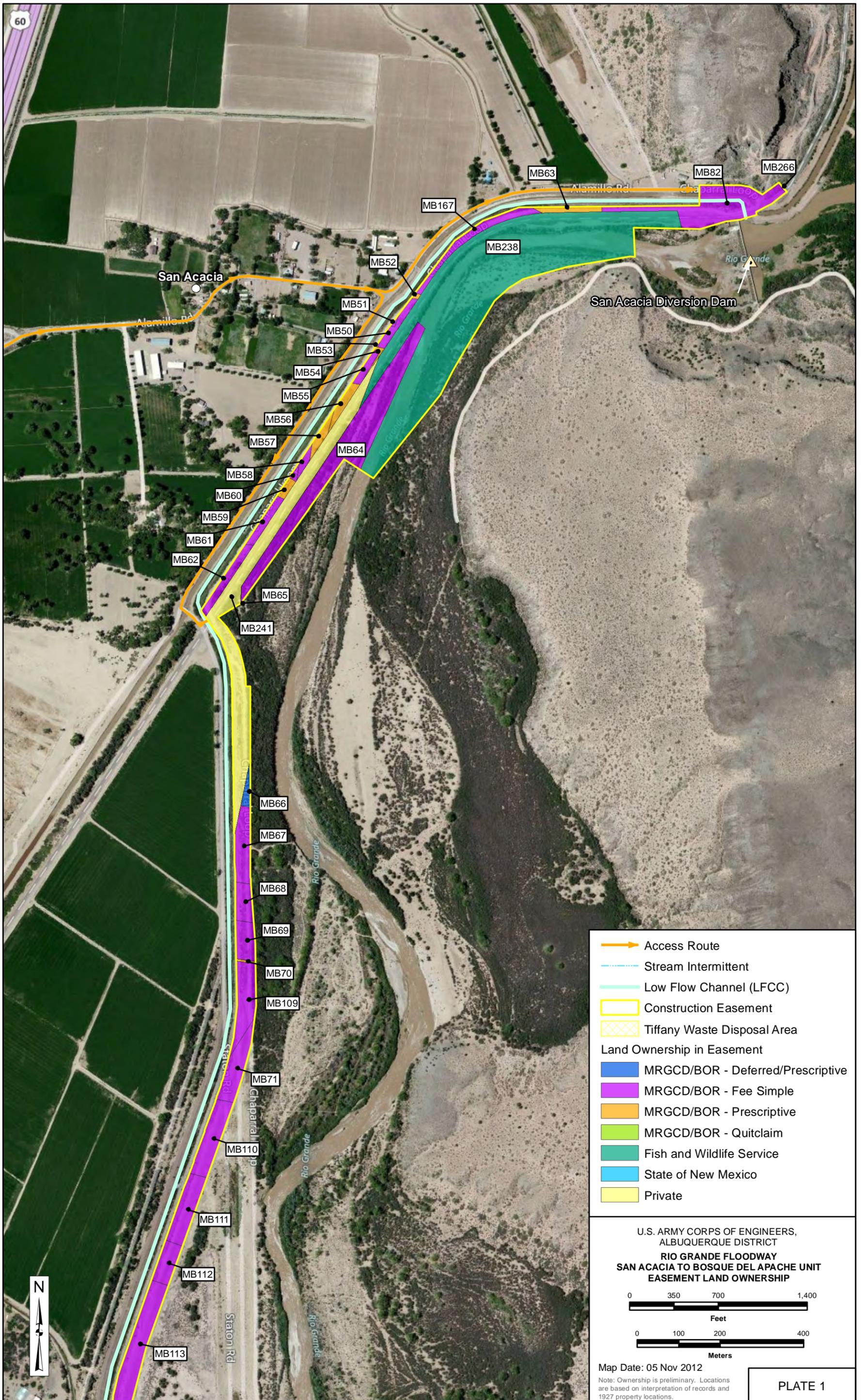
Richard W. Rodier
Branch Chief, Albuquerque Branch
Asset Management Division
Los Angeles District
U.S. Army Corps of Engineers

Real Estate Plan

Exhibit A

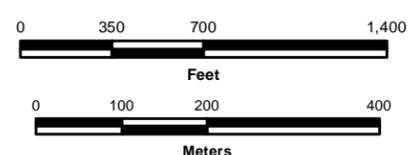
Project Maps

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- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

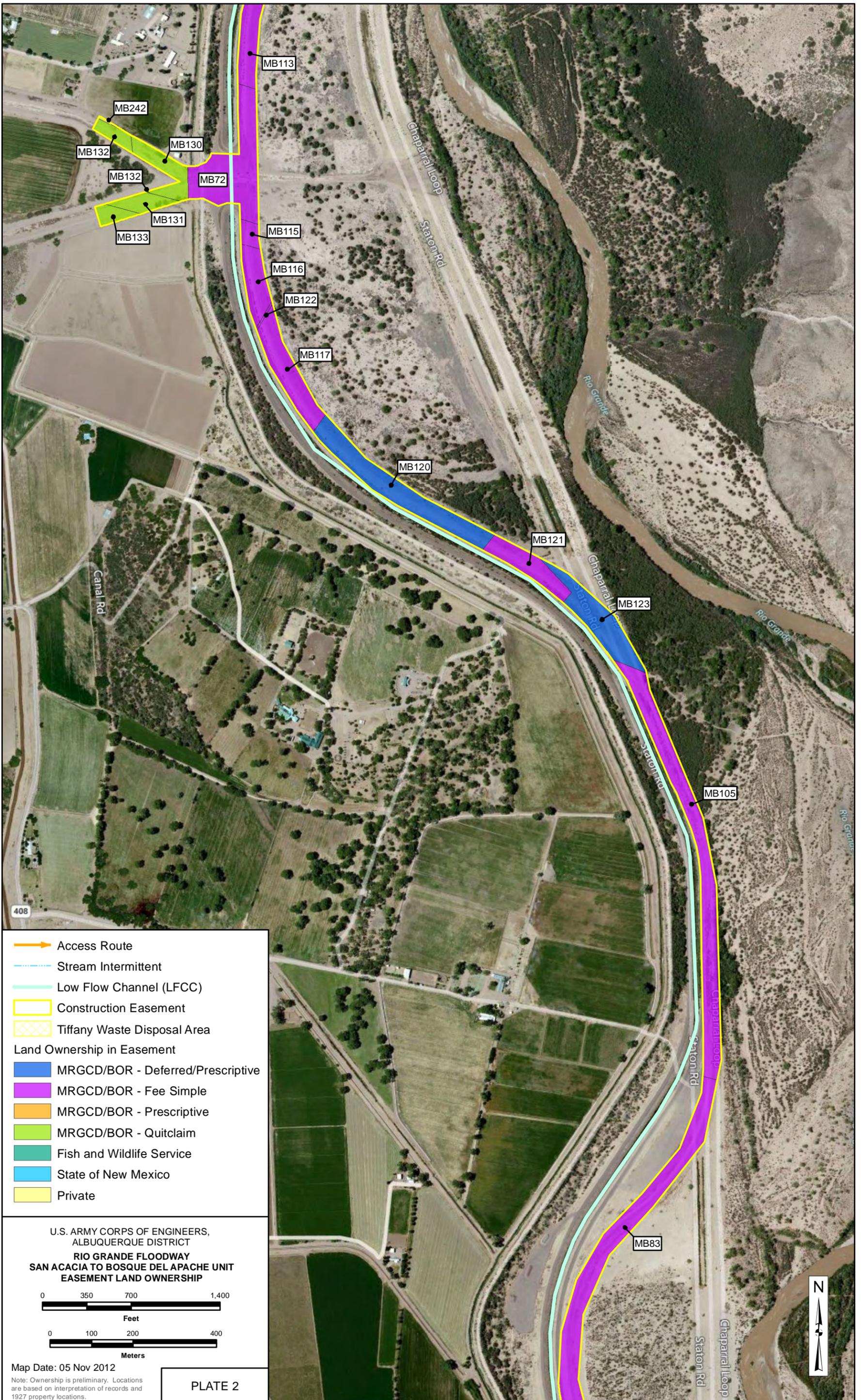
U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT
**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**



Map Date: 05 Nov 2012
Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 1

EXHIBIT A



-  Access Route
-  Stream Intermittent
-  Low Flow Channel (LFCC)
-  Construction Easement
-  Tiffany Waste Disposal Area
- Land Ownership in Easement
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-  Fish and Wildlife Service
-  State of New Mexico
-  Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT

**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**

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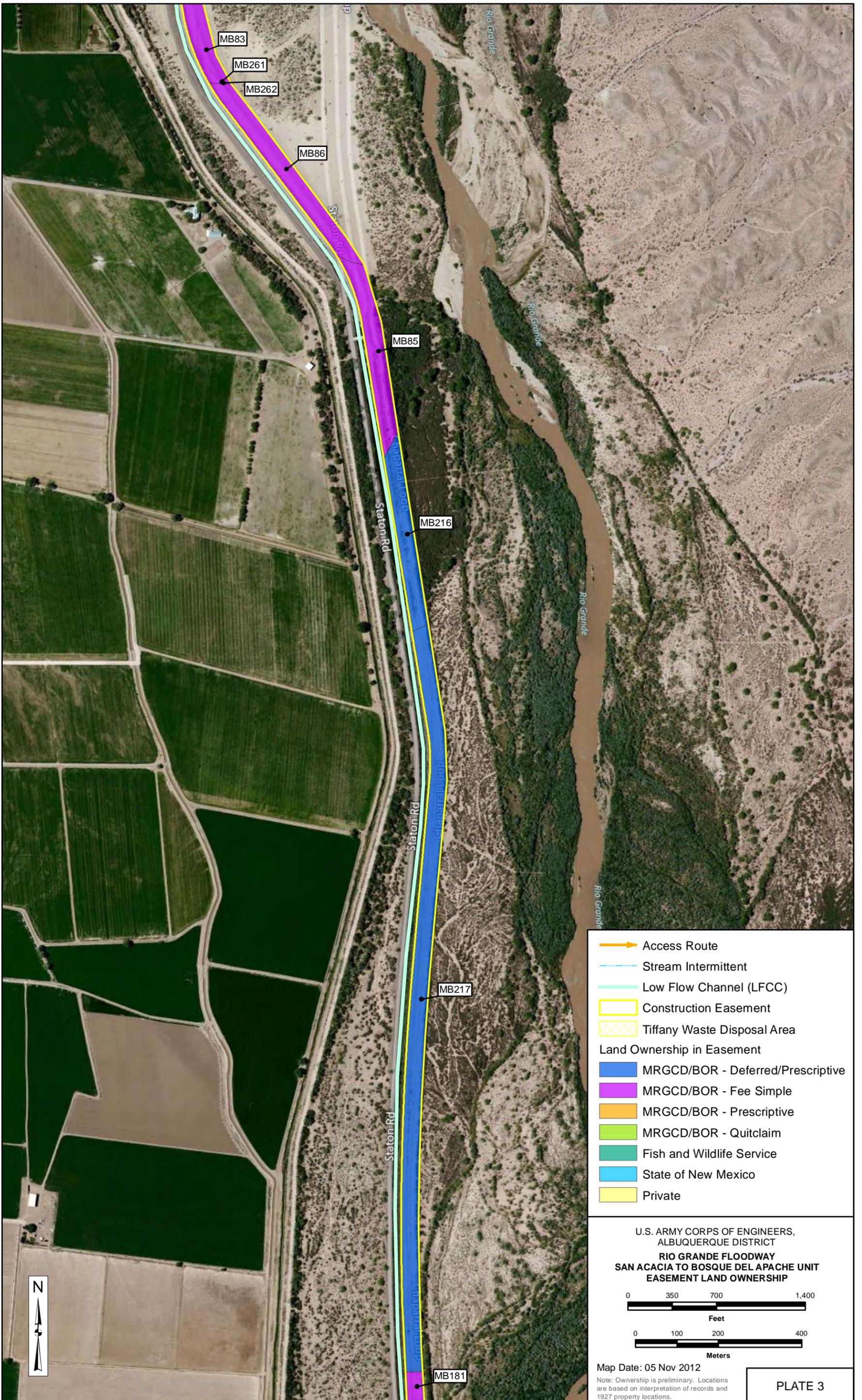
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Map Date: 05 Nov 2012

Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

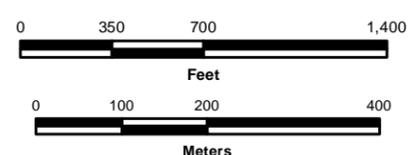
PLATE 2

EXHIBIT A



-  Access Route
-  Stream Intermittent
-  Low Flow Channel (LFCC)
-  Construction Easement
-  Tiffany Waste Disposal Area
- Land Ownership in Easement
-  MRGCD/BOR - Deferred/Prescriptive
-  MRGCD/BOR - Fee Simple
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-  Private

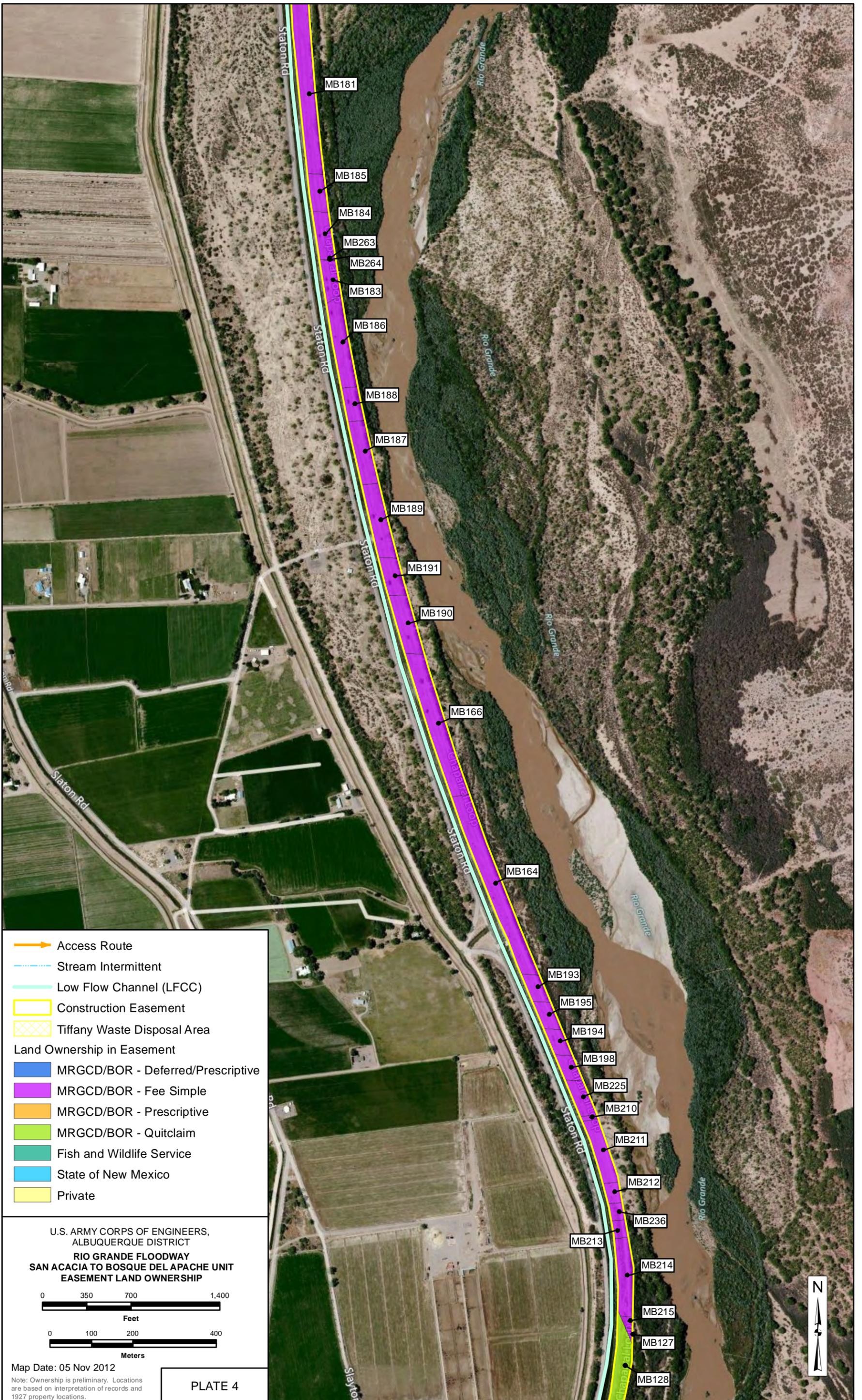
U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT
**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**



Map Date: 05 Nov 2012
 Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 3

EXHIBIT A



- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT

**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**

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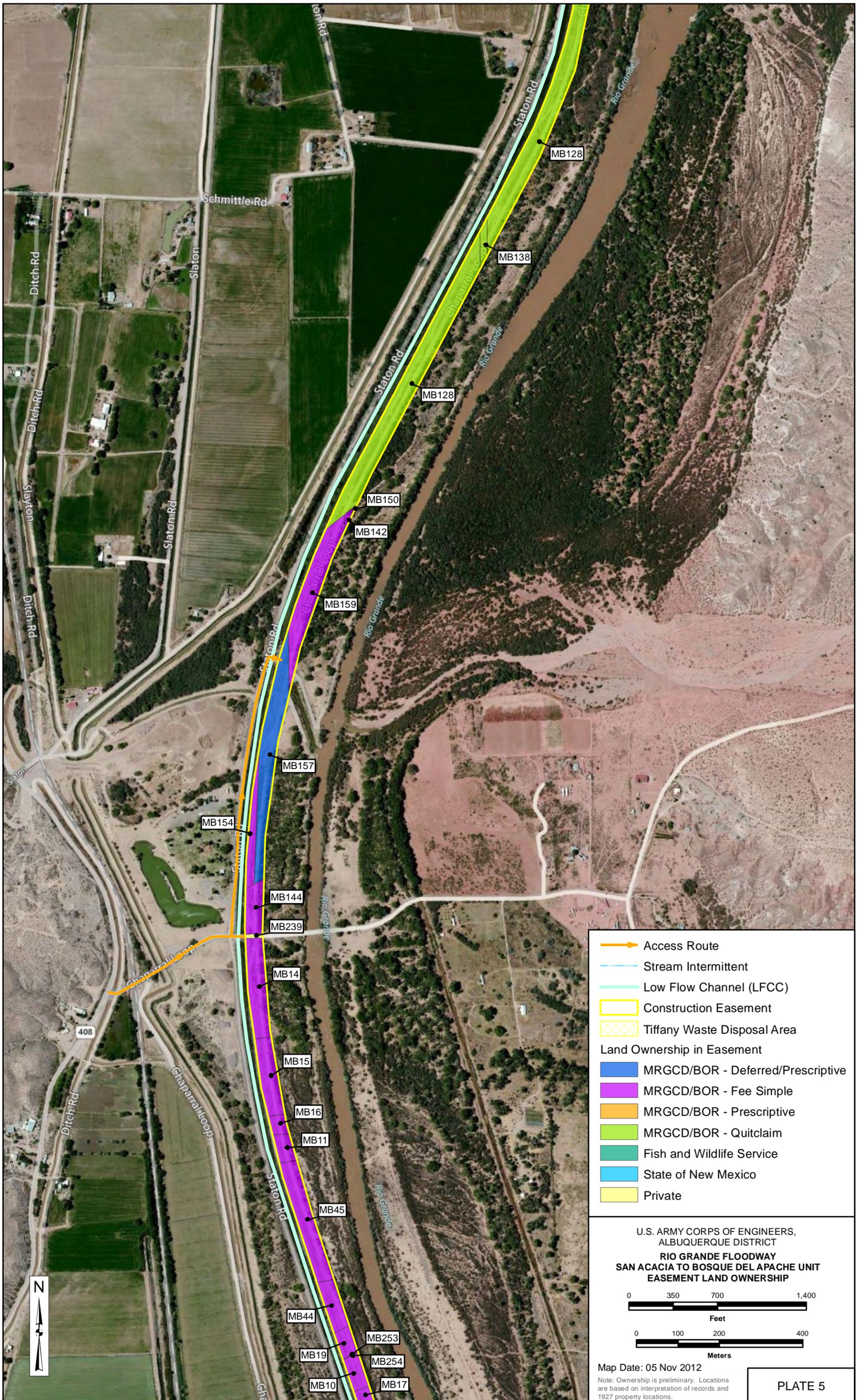
0 100 200 400
Meters

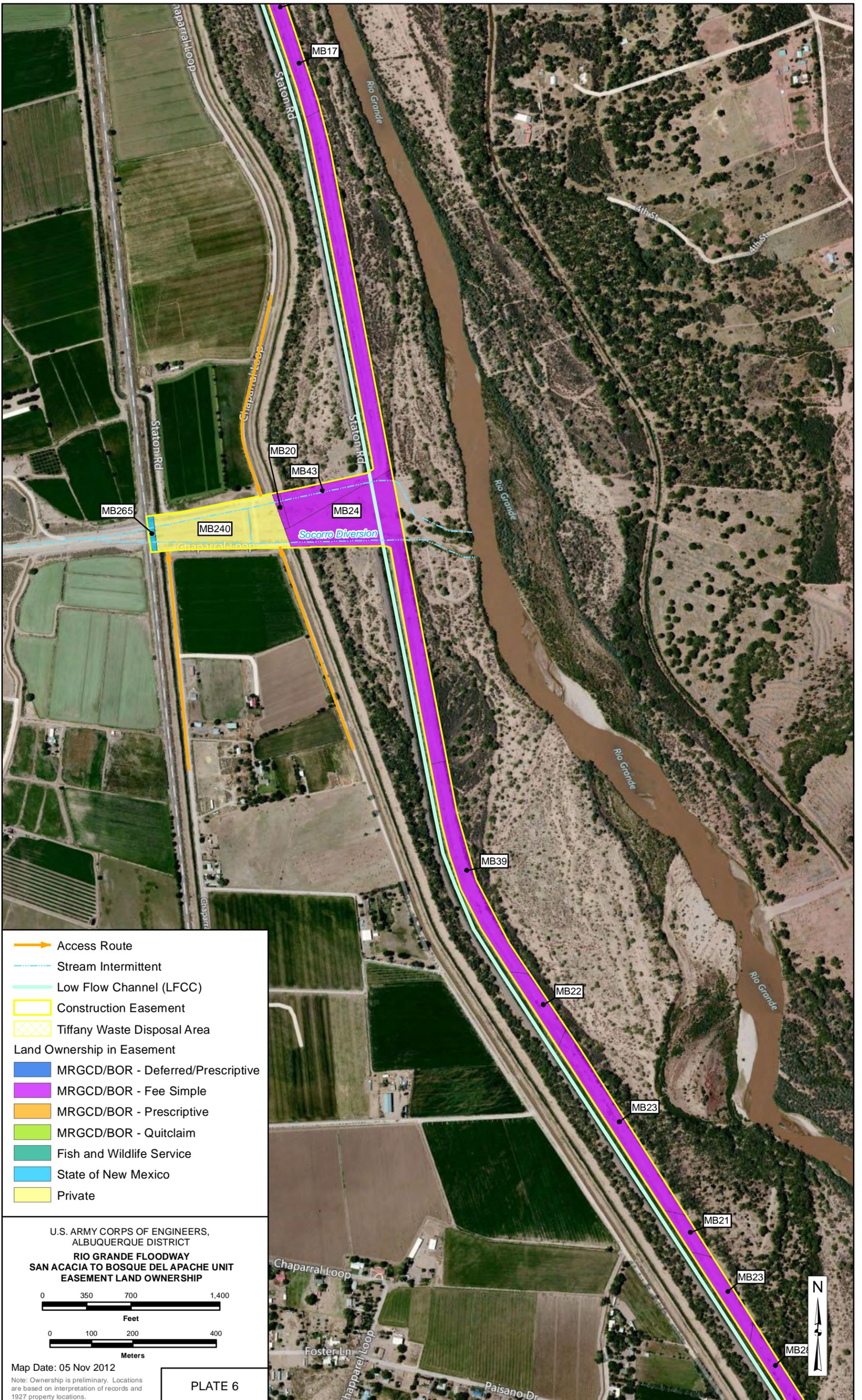
Map Date: 05 Nov 2012

Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 4

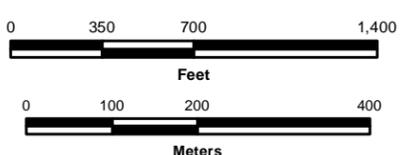
EXHIBIT A





- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT
**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**



Map Date: 05 Nov 2012
Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 6

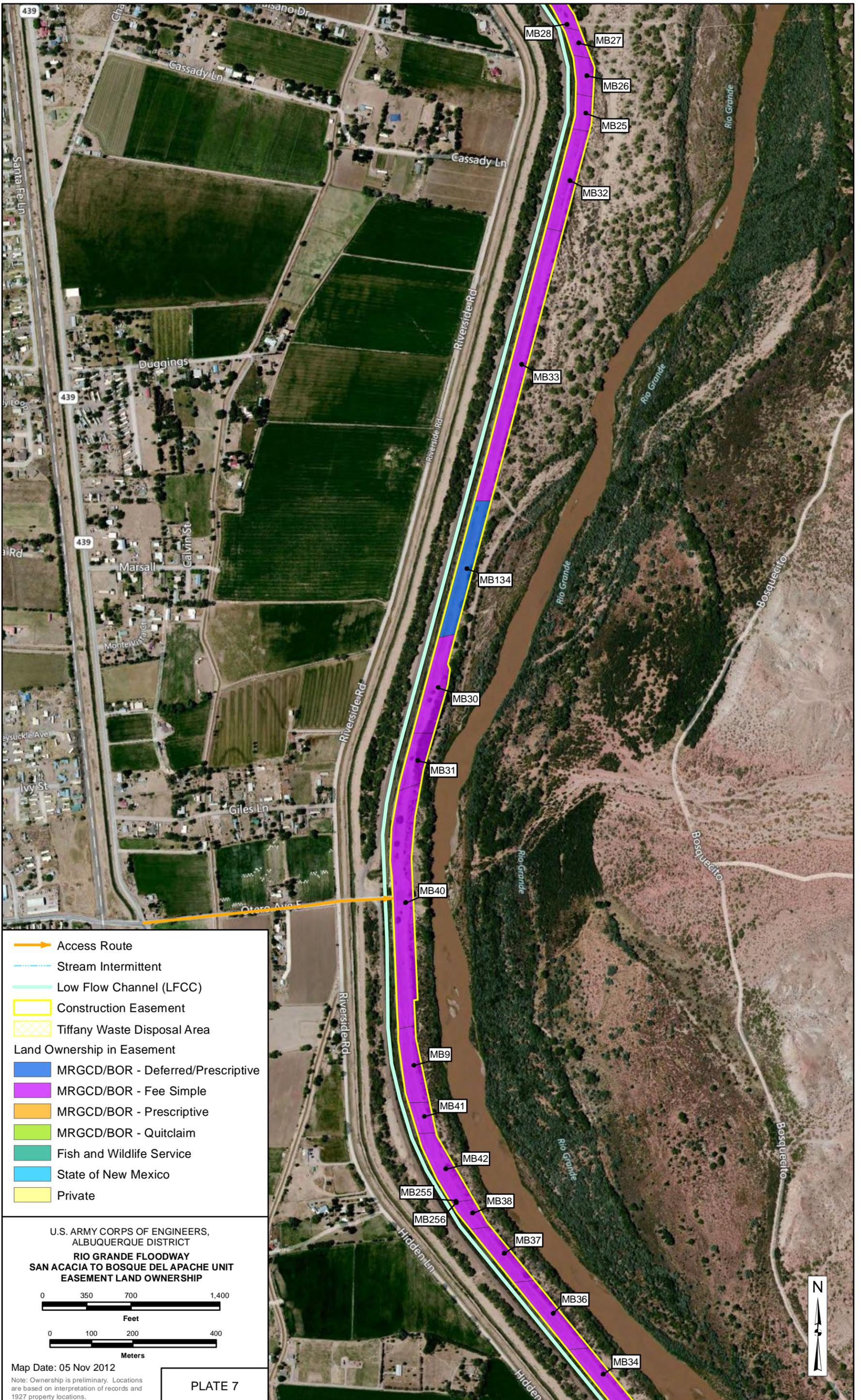
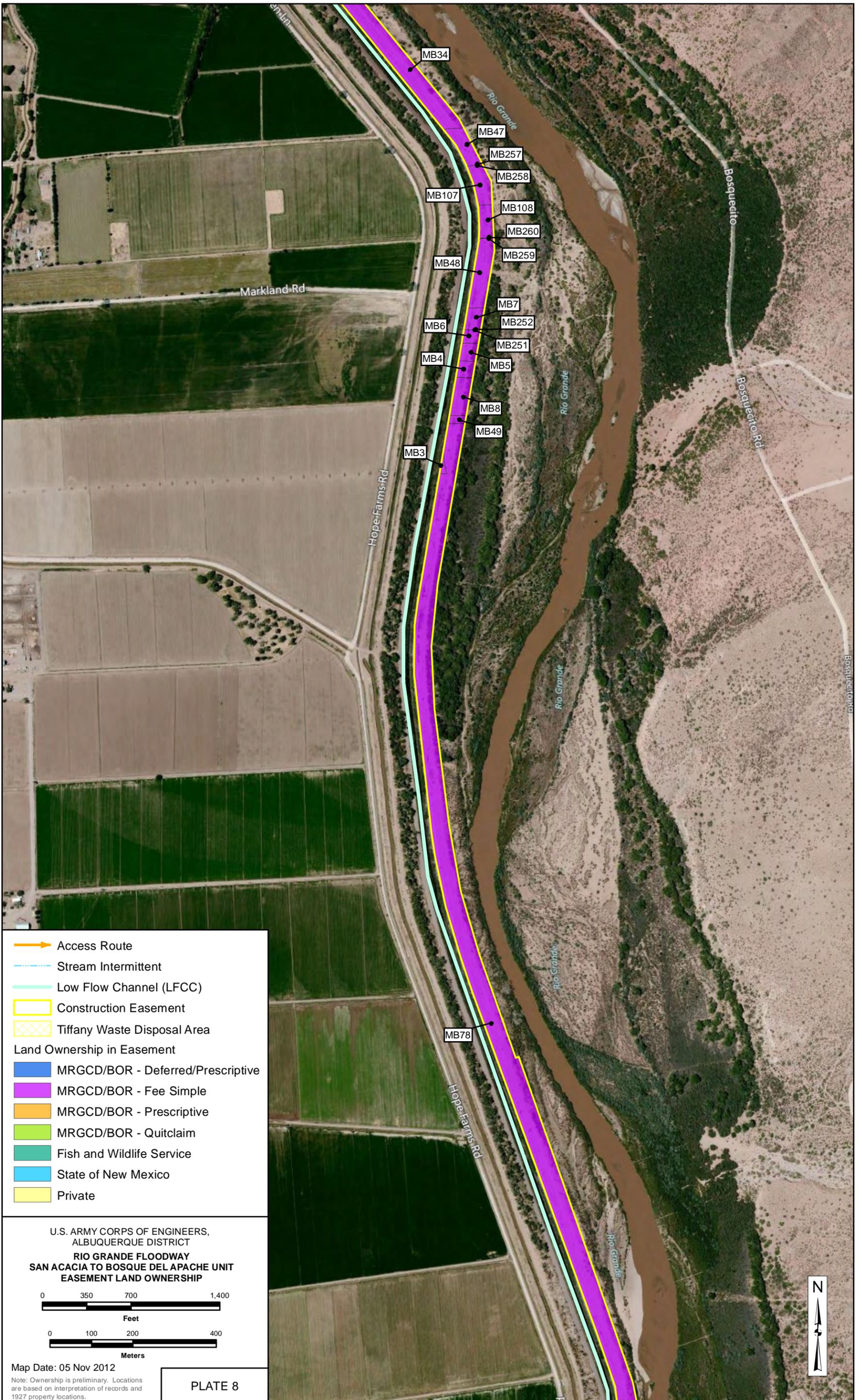


EXHIBIT A



- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT

**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**

0 350 700 1,400
Feet

0 100 200 400
Meters

Map Date: 05 Nov 2012

Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 8

EXHIBIT A

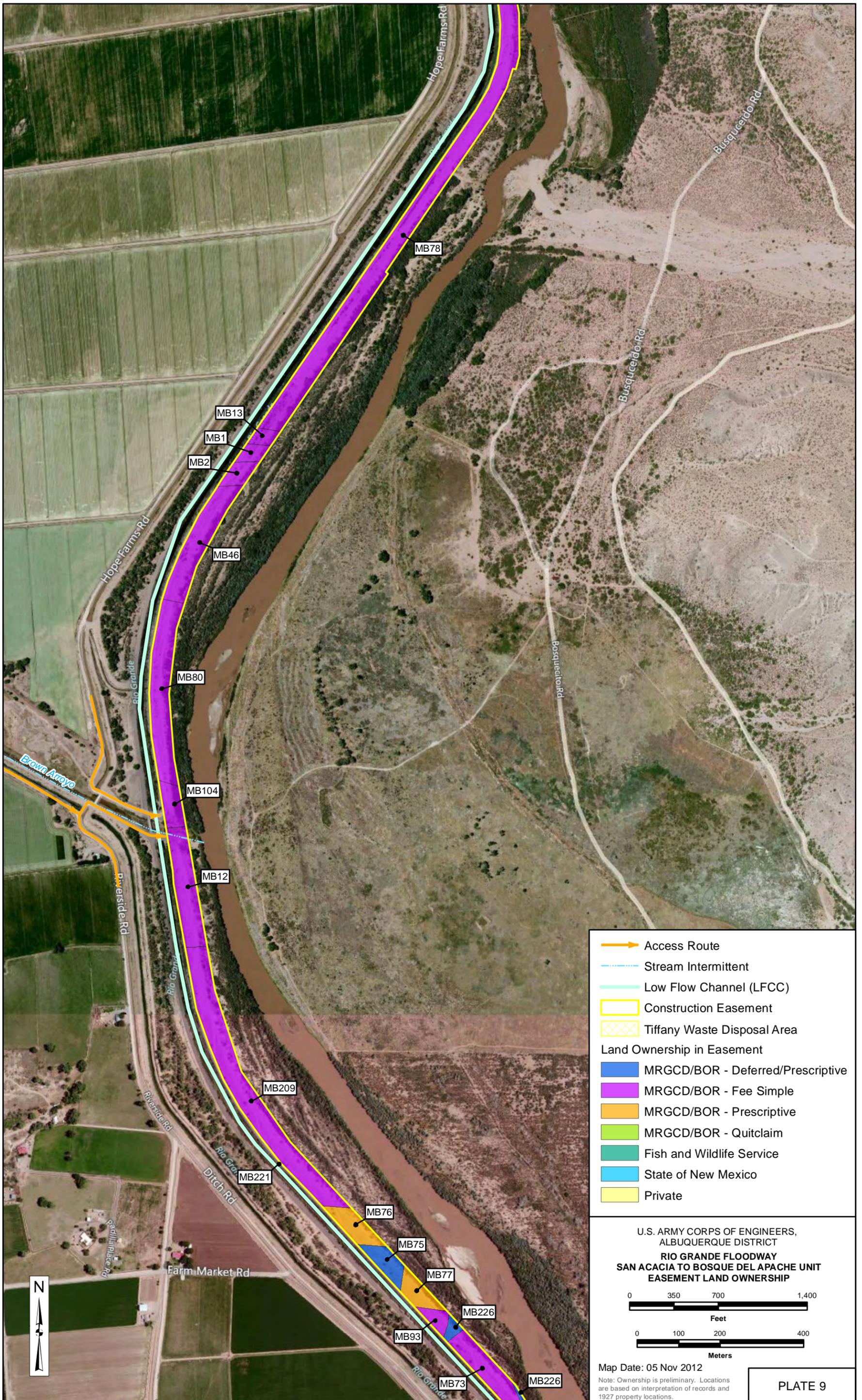
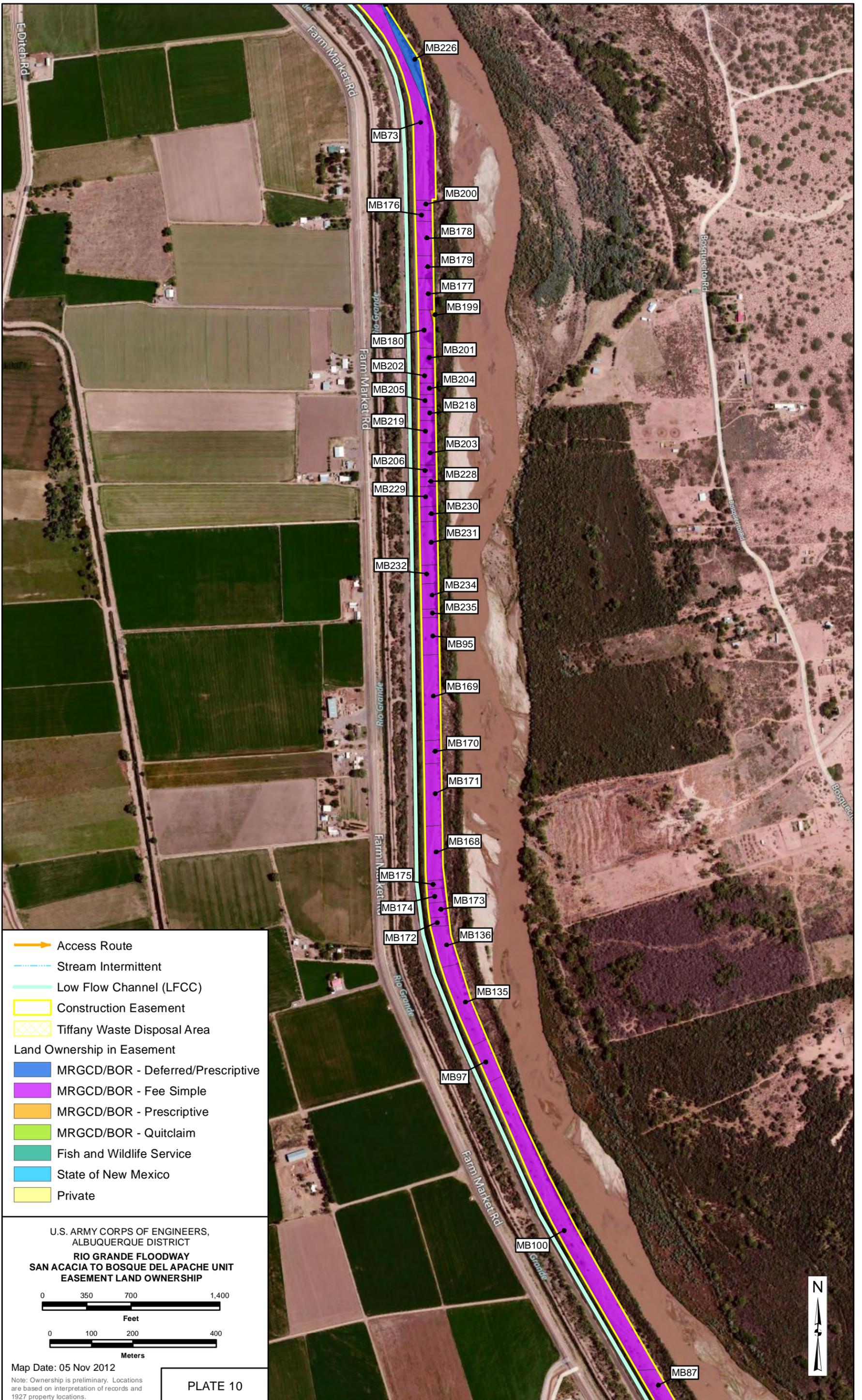


EXHIBIT A



- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT

**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**

0 350 700 1,400
Feet

0 100 200 400
Meters

Map Date: 05 Nov 2012

Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 10

EXHIBIT A

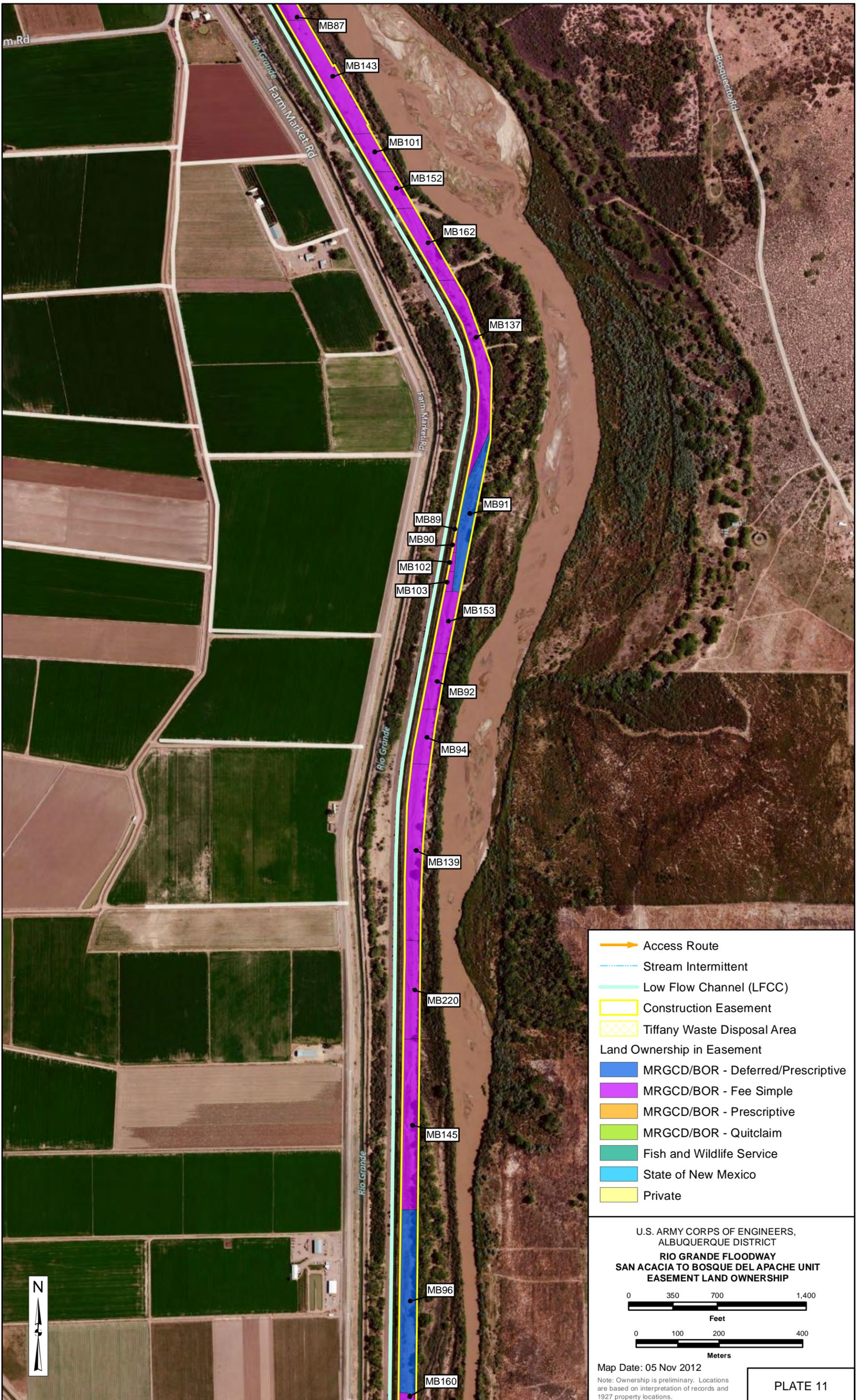
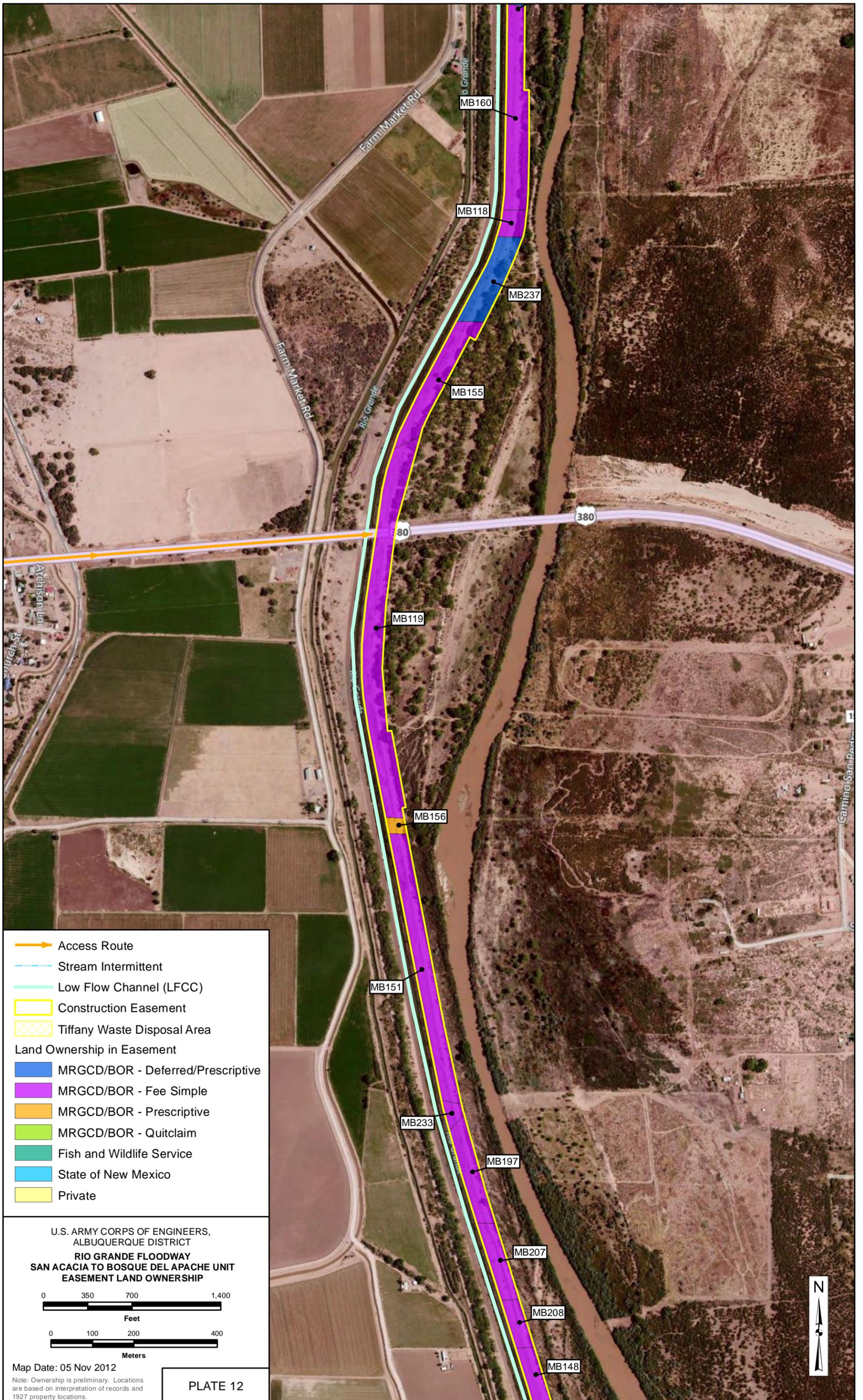


EXHIBIT A



- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT

**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**

0 350 700 1,400
Feet

0 100 200 400
Meters

Map Date: 05 Nov 2012

Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 12

EXHIBIT A

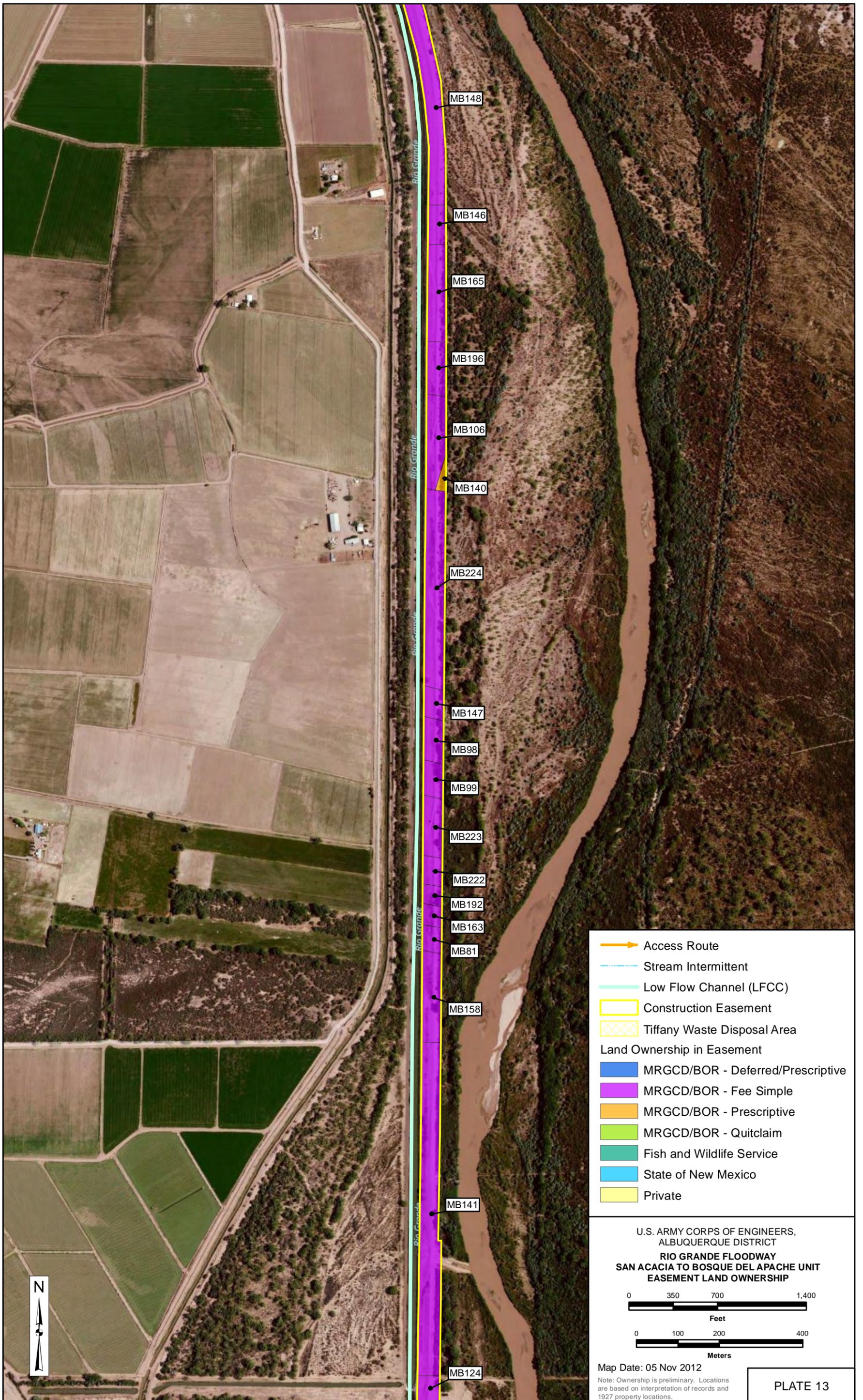


EXHIBIT A

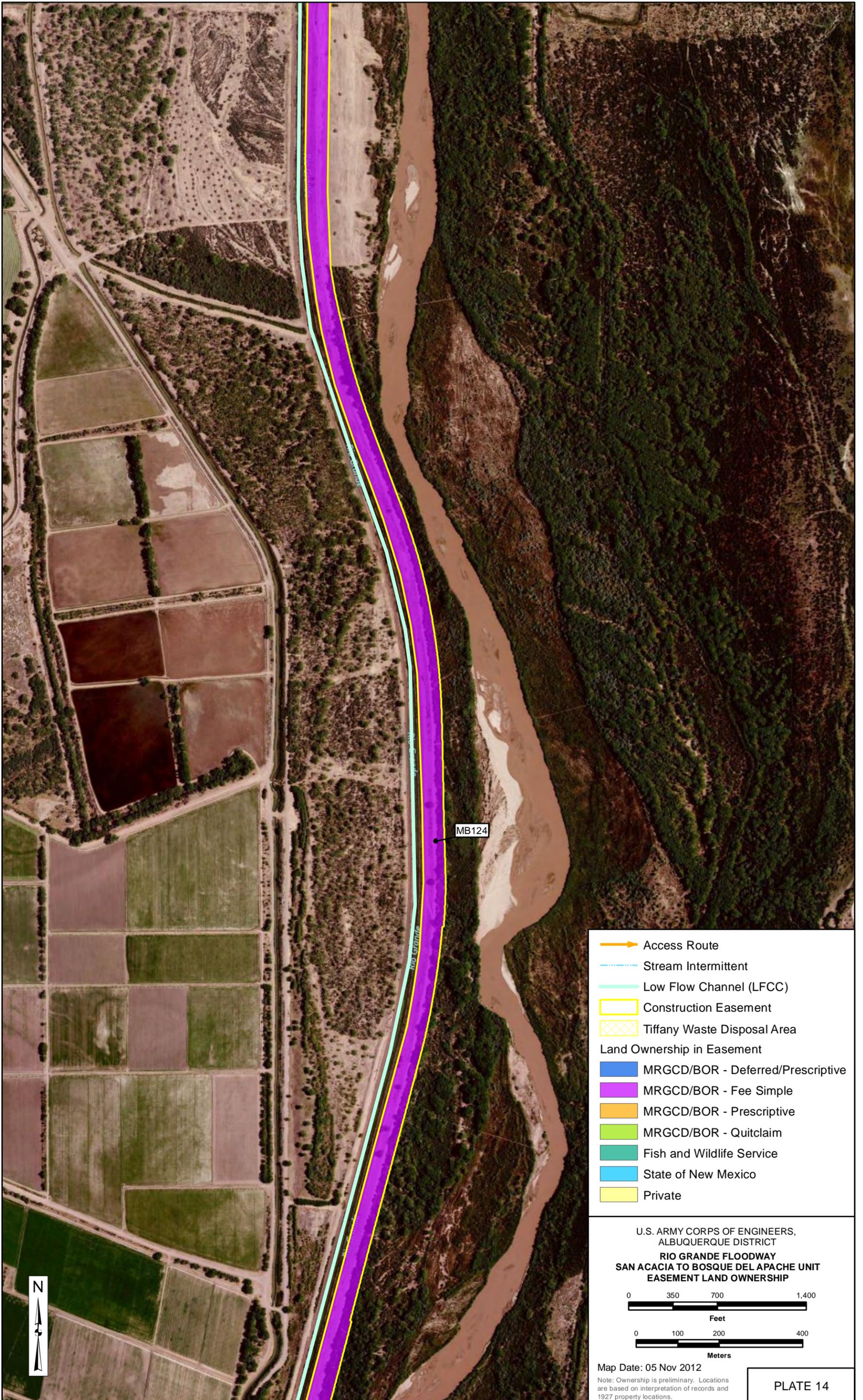
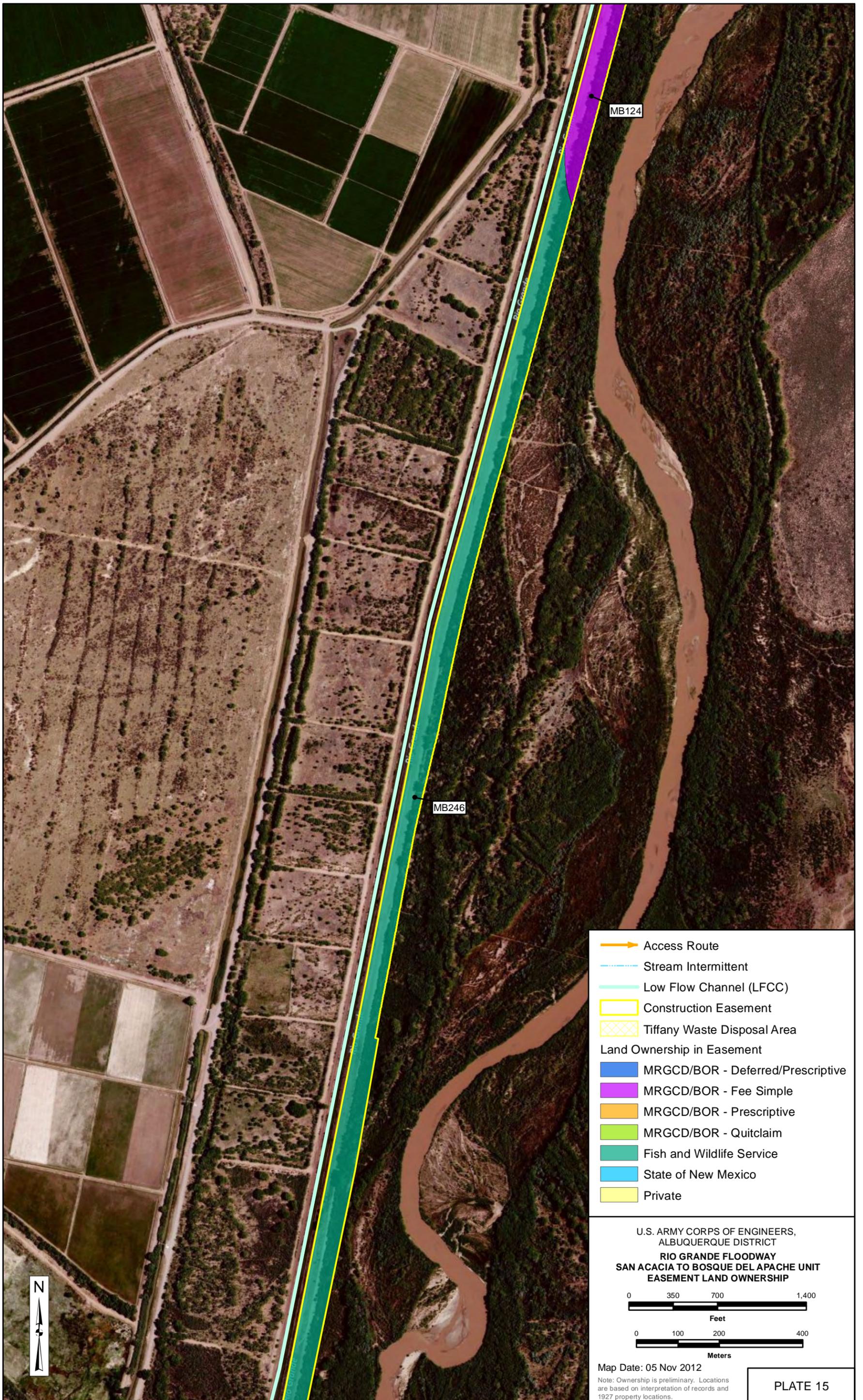
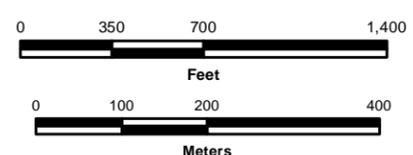


EXHIBIT A



- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

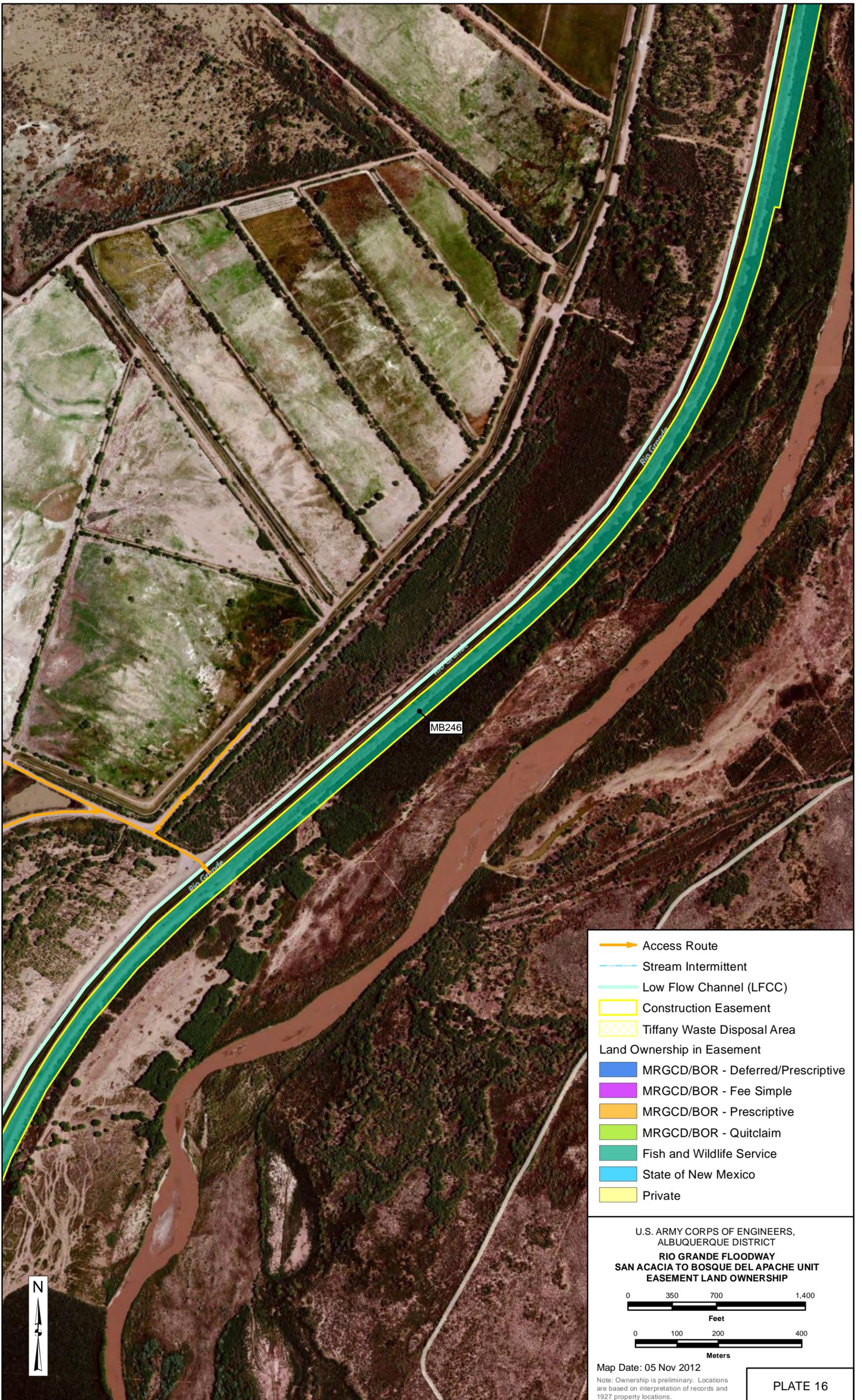
U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT
RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP



Map Date: 05 Nov 2012
Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

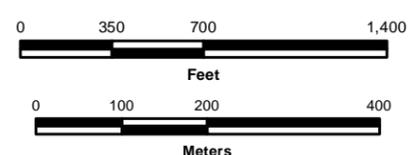
PLATE 15

EXHIBIT A



- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
 - MRGCD/BOR - Deferred/Prescriptive
 - MRGCD/BOR - Fee Simple
 - MRGCD/BOR - Prescriptive
 - MRGCD/BOR - Quitclaim
 - Fish and Wildlife Service
 - State of New Mexico
 - Private

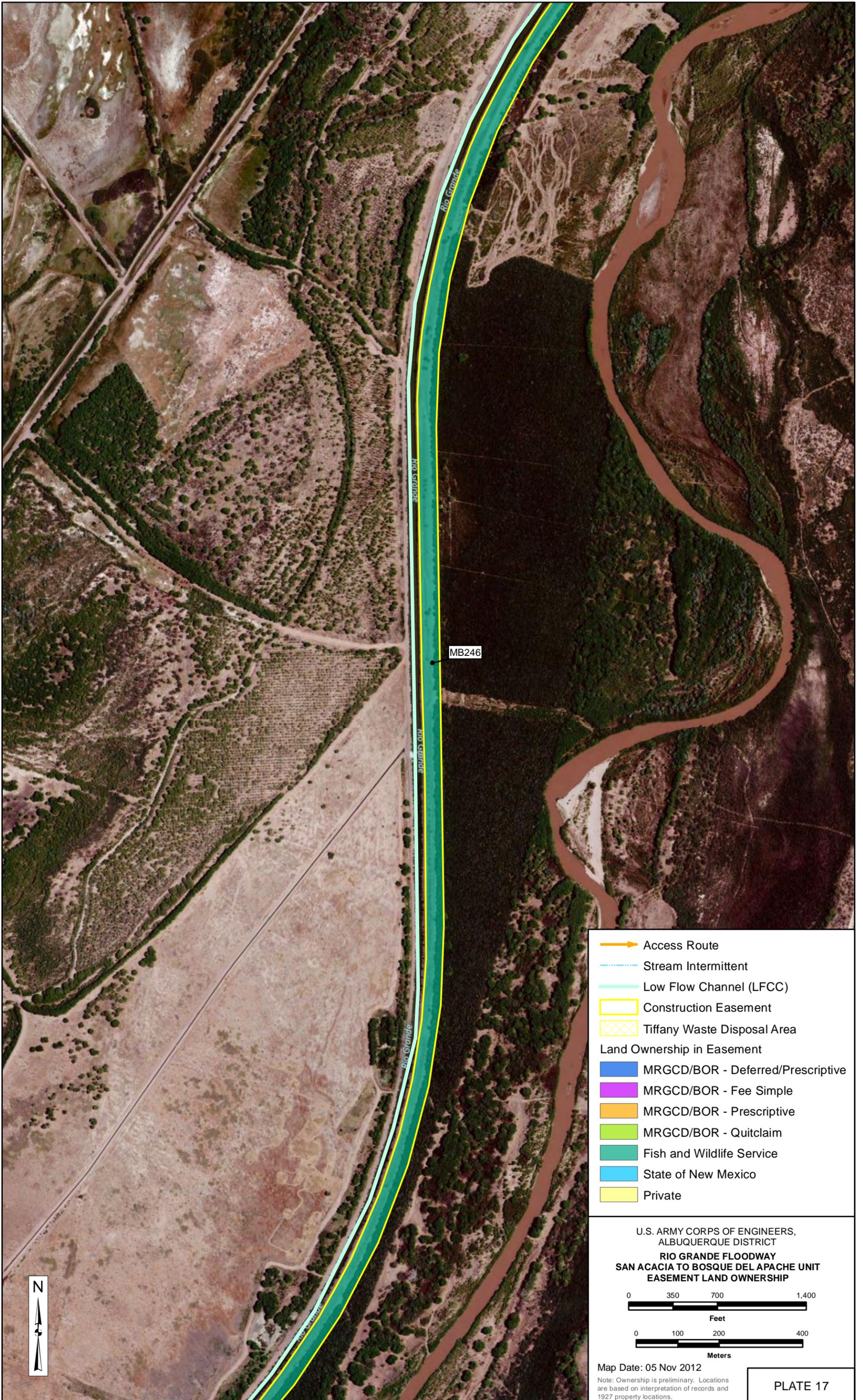
U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT
**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**



Map Date: 05 Nov 2012
Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

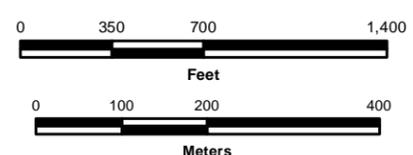
PLATE 16

EXHIBIT A



-  Access Route
-  Stream Intermittent
-  Low Flow Channel (LFCC)
-  Construction Easement
-  Tiffany Waste Disposal Area
- Land Ownership in Easement
-  MRGCD/BOR - Deferred/Prescriptive
-  MRGCD/BOR - Fee Simple
-  MRGCD/BOR - Prescriptive
-  MRGCD/BOR - Quitclaim
-  Fish and Wildlife Service
-  State of New Mexico
-  Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT
**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**

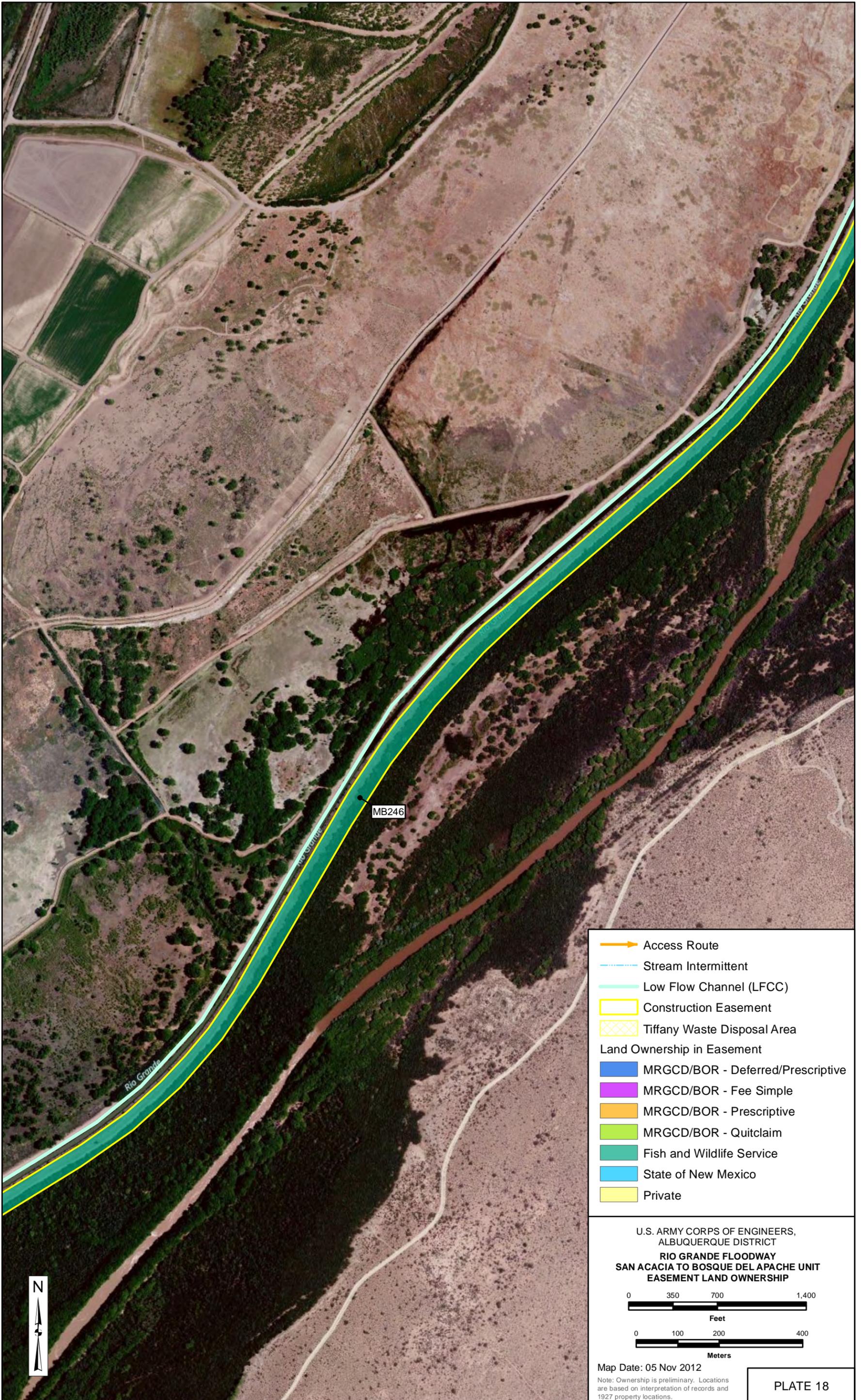


Map Date: 05 Nov 2012

Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

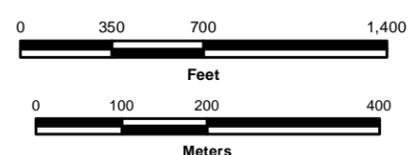
PLATE 17

EXHIBIT A



- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT
RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP



Map Date: 05 Nov 2012
Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 18

EXHIBIT A

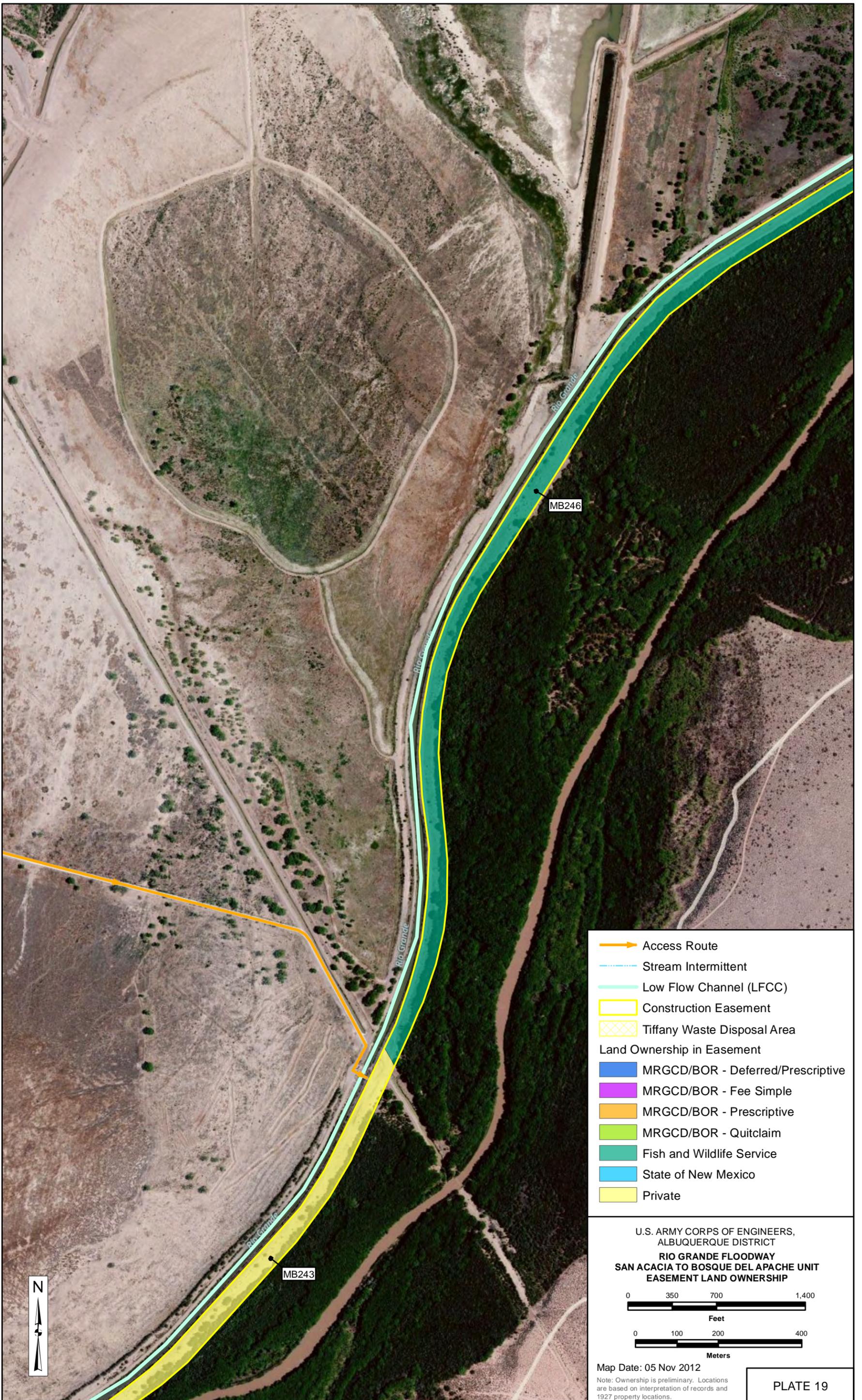
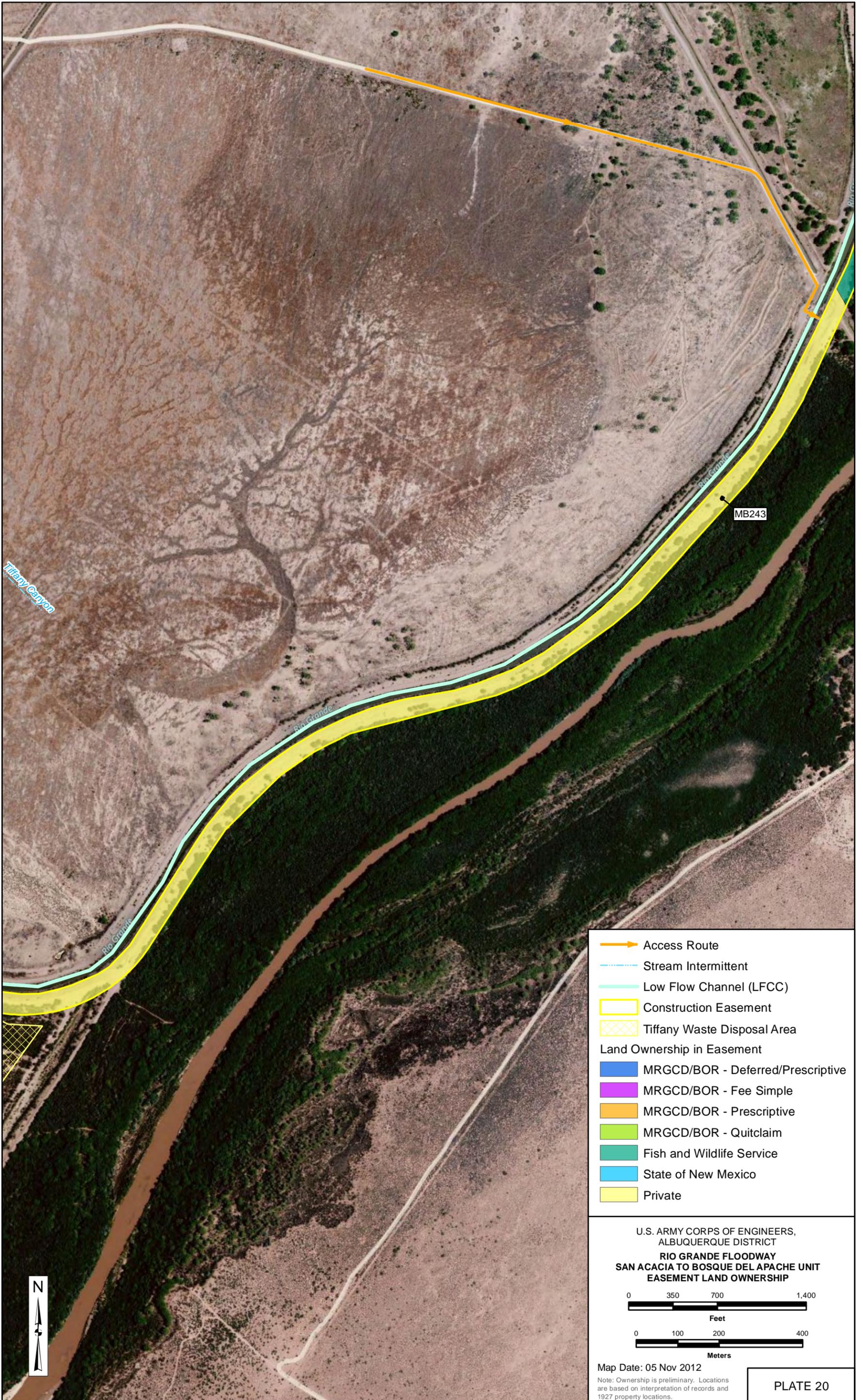


EXHIBIT A



-  Access Route
-  Stream Intermittent
-  Low Flow Channel (LFCC)
-  Construction Easement
-  Tiffany Waste Disposal Area
- Land Ownership in Easement
-  MRGCD/BOR - Deferred/Prescriptive
-  MRGCD/BOR - Fee Simple
-  MRGCD/BOR - Prescriptive
-  MRGCD/BOR - Quitclaim
-  Fish and Wildlife Service
-  State of New Mexico
-  Private

U.S. ARMY CORPS OF ENGINEERS,
 ALBUQUERQUE DISTRICT
RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP

0 350 700 1,400

 Feet

0 100 200 400

 Meters

Map Date: 05 Nov 2012
Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 20

EXHIBIT A



- Access Route
- Stream Intermittent
- Low Flow Channel (LFCC)
- Construction Easement
- Tiffany Waste Disposal Area
- Land Ownership in Easement
- MRGCD/BOR - Deferred/Prescriptive
- MRGCD/BOR - Fee Simple
- MRGCD/BOR - Prescriptive
- MRGCD/BOR - Quitclaim
- Fish and Wildlife Service
- State of New Mexico
- Private

U.S. ARMY CORPS OF ENGINEERS,
ALBUQUERQUE DISTRICT

**RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT
EASEMENT LAND OWNERSHIP**

0 350 700 1,400

Feet

0 100 200 400

Meters

Map Date: 05 Nov 2012

Note: Ownership is preliminary. Locations are based on interpretation of records and 1927 property locations.

PLATE 21



EXHIBIT A

Real Estate Plan

Exhibit B

Tract Register and Plate Definition Map

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FACILITY NAME	MRGCD PROPERTY MAP ATLAS 2008 OWNERSHIP DESCRIPTION	OWNER TYPE	OWNER	U.S. ARMY CORPS OF ENGINEERS MAP BOOK PLATE	U.S. ARMY CORPS OF ENGINEERS MAP BOOK ID	ACRES
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 UNPLATTED LD ADJ TO TRS 20 AND 31	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB50	0.58
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 TR 20	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB51	0.05
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 PUBLIC RD ADJ TO TR 3 AND TR 20	PRESCRIPTIVE	MRGCD/BOR	PLATE 1	MB52	0.05
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 TR 31	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB53	0.01
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 PUBLIC RD ADJ TO TRS 31, 35 & 36	PRESCRIPTIVE	MRGCD/BOR	PLATE 1	MB54	0.12
SOCORRO MAIN CANAL (NORTH)	ALL OF MAP 147 TR 35	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB55	0.40
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 A T & S F RR LDS	PRESCRIPTIVE	MRGCD/BOR	PLATE 1	MB56	0.51
SOCORRO MAIN CANAL (NORTH)	ALL OF MAP 147 TR 36	PRESCRIPTIVE	MRGCD/BOR	PLATE 1	MB57	0.42
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 TR 38	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB58	0.26
SOCORRO MAIN CANAL (NORTH)	ALL OF MAP 147 TR 39	PRESCRIPTIVE	MRGCD/BOR	PLATE 1	MB59	0.24
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 TR 40	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB60	0.11
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 TR 102	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB61	0.62
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 TR 101	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB62	0.89
SOCORRO MAIN CANAL (NORTH)	PT OF MAP 147 UNPLATTED LDS	PRESCRIPTIVE	MRGCD/BOR	PLATE 1	MB63	0.47
LEMITAR RIVERSIDE DRAIN	ALL OF MAP 147 TRS 107 AND 108	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB64	7.88
LEMITAR RIVERSIDE DRAIN	PT OF MAP 147 TR 109	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB65	0.00
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 TR 5	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 1	MB66	0.35
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 TR 7	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB67	1.62
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 TR 8	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB68	0.93
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 TR 9	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB69	1.05
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 PUBLIC RD ADJ TO TRS 9 AND 62	PRESCRIPTIVE	MRGCD/BOR	PLATE 1	MB70	0.06
LEMITAR RIVERSIDE DRAIN	ALL OF MAP 148 TRS 63C, 63D & 63E AND PT OF TR 63B	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB71	1.73
SAN ACACIA DIVERSION DAM	PT OF MAP 147 SEVILETTA GRANT, T 1 S, R 1 W & R 1 E, SECS 1 AND 6 NMPM	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB82	4.74
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 TR 62	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB109	2.02
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 TR 65	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB110	2.05
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 TR 66	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB111	1.90
LEMITAR RIVERSIDE DRAIN	PT OF MAP 148 TR 67	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB112	1.10
SOCORRO MAIN CANAL (NORTH)	PTS OF MAP 146 TR 21 AND MAP 147 TR 3	FEE SIMPLE	MRGCD/BOR	PLATE 1	MB167	1.42
LEMITAR RIVERSIDE DRAIN	PT OF MAP 149 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 1, 2	MB113	5.16
LEMITAR RIVERSIDE DRAIN	ALL OF MAP 149 TR 2B	FEE SIMPLE	MRGCD/BOR	PLATE 2	MB72	6.82
LEMITAR RIVERSIDE DRAIN	PT OF MAP 150 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 2	MB105	9.99
LEMITAR RIVERSIDE DRAIN	PT OF MAP 149 TR 9	FEE SIMPLE	MRGCD/BOR	PLATE 2	MB115	0.67
LEMITAR RIVERSIDE DRAIN	PT OF MAP 149 TR 13	FEE SIMPLE	MRGCD/BOR	PLATE 2	MB116	2.19
LEMITAR RIVERSIDE DRAIN	PT OF MAP 149 TR 60A	FEE SIMPLE	MRGCD/BOR	PLATE 2	MB117	3.77
LEMITAR RIVERSIDE DRAIN	PT OF MAP 149 TR 60B	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 2	MB120	6.26
LEMITAR RIVERSIDE DRAIN	PT OF MAP 149 TR 60C	FEE SIMPLE	MRGCD/BOR	PLATE 2	MB121	2.60
LEMITAR RIVERSIDE DRAIN	PT OF MAP 149 TR 60	FEE SIMPLE	MRGCD/BOR	PLATE 2	MB122	0.09
LEMITAR RIVERSIDE DRAIN	ALL OF MAP 149 TR 60D	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 2	MB123	4.02
SAN LORENZO ARROYO	MAP 149 TR 2A2	QUITCLAIM	MRGCD/BOR	PLATE 2	MB130	2.12
SAN LORENZO ARROYO	MAP 149 TR 9B2	QUITCLAIM	MRGCD/BOR	PLATE 2	MB131	1.18
SAN LORENZO ARROYO	MAP 149 TR 7A	QUITCLAIM	MRGCD/BOR	PLATE 2	MB132	0.88
SAN LORENZO ARROYO	MAP 149 TR 13A2	QUITCLAIM	MRGCD/BOR	PLATE 2	MB133	0.79
LEMITAR RIVERSIDE DRAIN	PT OF MAP 150 TR 36	FEE SIMPLE	MRGCD/BOR	PLATE 2, 3	MB83	11.55

FACILITY NAME	MRGCD PROPERTY MAP ATLAS 2008 OWNERSHIP DESCRIPTION	OWNER TYPE	OWNER	U.S. ARMY CORPS OF ENGINEERS MAP BOOK PLATE	U.S. ARMY CORPS OF ENGINEERS MAP BOOK ID	ACRES
LEMITAR RIVERSIDE DRAIN	PT OF MAP 151 TR 12	FEE SIMPLE	MRGCD/BOR	PLATE 3	MB85	5.12
LEMITAR RIVERSIDE DRAIN	PT OF MAP 151 TR 12	FEE SIMPLE	MRGCD/BOR	PLATE 3	MB86	5.99
LEMITAR RIVERSIDE DRAIN	PT OF MAP 151 TR 51	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 3	MB216	4.83
LEMITAR RIVERSIDE DRAIN	PT OF MAP 152 TR 1	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 3	MB217	18.74
LEMITAR RIVERSIDE DRAIN	PT OF MAP 150 TR 36	FEE SIMPLE	MRGCD/BOR	PLATE 3	MB261	0.00
LEMITAR RIVERSIDE DRAIN	PT OF MAP 151 TR 12	FEE SIMPLE	MRGCD/BOR	PLATE 3	MB262	0.00
LEMITAR RIVERSIDE DRAIN	ALL OF MAP 153 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 3, 4	MB181	4.52
LEMITAR RIVERSIDE DRAIN	PT OF MAP 156 TR 4	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB127	0.10
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 1A	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB164	4.81
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB166	3.93
LEMITAR RIVERSIDE DRAIN	ALL OF MAP 153 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB183	0.91
LEMITAR RIVERSIDE DRAIN	PT OF MAP 153 TR 5	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB184	1.14
LEMITAR RIVERSIDE DRAIN	PT OF MAP 153 TR 6	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB185	0.93
LEMITAR RIVERSIDE DRAIN	PT OF MAP 153 TR 167	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB186	2.15
LEMITAR RIVERSIDE DRAIN	PT OF MAP 153 TR 169	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB187	1.59
LEMITAR RIVERSIDE DRAIN	PT OF MAP 153 TR 170	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB188	0.83
LEMITAR RIVERSIDE DRAIN	PT OF MAP 153 TR 171	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB189	1.96
LEMITAR RIVERSIDE DRAIN	PT OF MAP 154 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB190	1.66
LEMITAR RIVERSIDE DRAIN	PT OF MAP 154 TR 15A	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB191	1.04
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 17	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB193	0.71
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 5	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB194	0.67
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 4	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB195	0.72
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 6	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB198	0.65
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 11	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB210	0.12
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 12	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB211	1.45
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 13	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB212	0.45
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 15	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB213	0.35
LEMITAR RIVERSIDE DRAIN	PT OF MAP 156 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB214	1.74
LEMITAR RIVERSIDE DRAIN	PT OF MAP 156 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB215	0.16
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 7	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB225	0.90
LEMITAR RIVERSIDE DRAIN	PT OF MAP 155 TR 14	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB236	0.36
LEMITAR RIVERSIDE DRAIN	ALL OF MAP 153 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB263	0.00
LEMITAR RIVERSIDE DRAIN	PT OF MAP 153 TR 5	FEE SIMPLE	MRGCD/BOR	PLATE 4	MB264	0.00
LEMITAR RIVERSIDE DRAIN AND LFCC	PTS OF MAP 156 TRS 1 THRU 15 AND 77 THRU 84	QUITCLAIM	MRGCD/BOR	PLATE 4, 5	MB128	15.22
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 36	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB10	0.83
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 157 TR 28	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB11	0.70
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 157 TR 25	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB14	2.58
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 157 TR 26	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB15	2.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 157 TR 27	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB16	0.47
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 35	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB19	0.69
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 33A	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB44	1.25
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 33	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB45	3.17
LEMITAR RIVERSIDE DRAIN AND LFCC	ALL OF MAP 156 TR 76	QUITCLAIM	MRGCD/BOR	PLATE 5	MB138	0.37
LEMITAR RIVERSIDE DRAIN	PT OF MAP 156 TR 69	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB142	0.14
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 157 TR 18	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB144	1.31
LEMITAR RIVERSIDE DRAIN	PT OF MAP 156 TR 70	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB150	0.03
LEMITAR RIVERSIDE DRAIN	PT OF MAP 156 TR 66	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB154	1.22
LEMITAR RIVERSIDE DRAIN	PT OF MAP 156 TR 67	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 5	MB157	4.74
LEMITAR RIVERSIDE DRAIN	PT OF MAP 156 TR 68	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB159	3.82

FACILITY NAME	MRGCD PROPERTY MAP ATLAS 2008 OWNERSHIP DESCRIPTION	OWNER TYPE	OWNER	U.S. ARMY CORPS OF ENGINEERS MAP BOOK PLATE	U.S. ARMY CORPS OF ENGINEERS MAP BOOK ID	ACRES
SOCORRO RIVERSIDE DRAIN "B"	PRIVATE	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB239	0.10
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 36	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB253	0.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 35	FEE SIMPLE	MRGCD/BOR	PLATE 5	MB254	0.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 37	FEE SIMPLE	MRGCD/BOR	PLATE 5, 6	MB17	2.78
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 42	FEE SIMPLE	MRGCD/BOR	PLATE 6	MB20	0.35
SOCORRO RIVERSIDE DRAIN "B"	ALL OF MAP 160 TR 4	FEE SIMPLE	MRGCD/BOR	PLATE 6	MB21	1.15
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 159 TR 11	FEE SIMPLE	MRGCD/BOR	PLATE 6	MB22	1.92
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 161 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 6	MB23	7.25
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 159 TR 7	FEE SIMPLE	MRGCD/BOR	PLATE 6	MB24	13.09
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 159 TR 10	FEE SIMPLE	MRGCD/BOR	PLATE 6	MB39	5.69
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 158 TR 39	FEE SIMPLE	MRGCD/BOR	PLATE 6	MB43	12.13
SOCORRO RIVERSIDE DRAIN "B"	ALL OF MAP 160 TR 5	FEE SIMPLE	MRGCD/BOR	PLATE 6, 7	MB28	2.09
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 162 TR 46	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB9	2.15
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 160 TR 8	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB25	0.89
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 160 TR 7	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB26	1.02
SOCORRO RIVERSIDE DRAIN "B"	ALL OF MAP 160 TR 6	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB27	0.66
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 162 TR 18	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB30	2.78
SOCORRO MAIN CANAL AND SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 162 TR 32D	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB31	1.60
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 160 TR 9	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB32	2.60
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 160 TR 10	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB33	6.68
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 14	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB36	2.24
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 15	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB37	1.75
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 12	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB38	0.94
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 162 TR 44	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB40	7.11
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB41	0.88
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB42	2.24
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 162 TR 48	DEFERRED/PRESRIPTIVE	MRGCD/BOR	PLATE 7	MB134	3.21
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 12	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB255	0.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 7	MB256	0.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 28	FEE SIMPLE	MRGCD/BOR	PLATE 7, 8	MB34	5.75
SOCORRO RIVERSIDE DRAIN	PORTION OF MAP 164 TRACT 4	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB3	0.10
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 59	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB4	0.41
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 56	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB5	0.44
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 58	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB6	0.32
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 57	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB7	0.53
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 60	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB8	0.92
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 42	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB47	0.94
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 53	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB48	1.68
SOCORRO RIVERSIDE DRAIN "B"	PORTION OF MAP 164 TRACT 1	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB49	0.19
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 43	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB107	0.95
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 44	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB108	0.67
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 58	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB251	0.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 57	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB252	0.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 42	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB257	0.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 43	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB258	0.00
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 53	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB259	0.01
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 163 TR 44	FEE SIMPLE	MRGCD/BOR	PLATE 8	MB260	0.01
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 165 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 8, 9	MB78	40.01
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 166 TR 4	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB1	0.64
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 166 TR 5	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB2	0.91

FACILITY NAME	MRGCD PROPERTY MAP ATLAS 2008 OWNERSHIP DESCRIPTION	OWNER TYPE	OWNER	U.S. ARMY CORPS OF ENGINEERS MAP BOOK PLATE	U.S. ARMY CORPS OF ENGINEERS MAP BOOK ID	ACRES
SOCORRO RIVERSIDE DRAIN "A"	ALL OF MAP 166 TR 16	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB12	3.71
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 166 TR 3	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB13	0.57
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 166 TR 10	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB46	4.10
SOCORRO RIVERSIDE DRAIN "A"	PT OF MAP 167 TR 62	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 9	MB75	1.36
SOCORRO RIVERSIDE DRAIN	ALL OF MAP 167 TR 46	PRESCRIPTIVE	MRGCD/BOR	PLATE 9	MB76	1.59
SOCORRO RIVERSIDE DRAIN	ALL OF MAP 167 TR 61	PRESCRIPTIVE	MRGCD/BOR	PLATE 9	MB77	1.24
SOCORRO RIVERSIDE DRAIN "B"	PT OF MAP 166 TR 9	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB80	5.48
SOCORRO RIVERSIDE DRAIN	PT OF MAP 167 TR 63	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB93	0.74
SAN ANTONITO LATERAL AND LEVEE AND FLOODWAY	PT OF MAP 166 TR 9-A	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB104	1.26
SOCORRO RIVERSIDE DRAIN "A"	PT OF MAP 167 TR 3	FEE SIMPLE	MRGCD/BOR	PLATE 9	MB209	9.28
SOCORRO RIVERSIDE DRAIN "A"	PT OF MAP 167 TR 45	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 9	MB221	0.02
SOCORRO RIVERSIDE DRAIN	PT OF MAP 167 TR 88	FEE SIMPLE	MRGCD/BOR	PLATE 9, 10	MB73	6.76
SOCORRO RIVERSIDE DRAIN	ALL OF MAP 167 TR 89	DEFERRED/PRESCRIPTIVE	MRGCD/BOR	PLATE 9, 10	MB226	1.80
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 61	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB95	0.93
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 4	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB97	0.94
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 12	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB100	8.38
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 5	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB135	2.08
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 6	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB136	1.09
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 93	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB168	1.38
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 62	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB169	2.14
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 87	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB170	0.57
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 88	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB171	1.55
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 97	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB172	0.24
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 96	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB173	0.41
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 95	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB174	0.38
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 94	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB175	0.22
SOCORRO RIVERSIDE DRAIN	PT OF MAP 167 TR 126	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB176	0.27
SOCORRO RIVERSIDE DRAIN	PT OF MAP 167 TR 124	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB177	0.74
SOCORRO RIVERSIDE DRAIN	PT OF MAP 167 TR 127	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB178	0.85
SOCORRO RIVERSIDE DRAIN	PT OF MAP 167 TR 123	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB179	0.53
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 3	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB180	0.83
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 UNPLATTED GOVERNMENT LDS	PRESCRIPTIVE	MRGCD/BOR	PLATE 10	MB199	0.06
SOCORRO RIVERSIDE DRAIN	PT OF MAP 167 TR 125	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB200	0.25
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 23	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB201	0.47
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 24	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB202	0.34
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 29	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB203	0.54
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 25	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB204	0.26
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 26	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB205	0.30
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 30	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB206	0.30
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 27	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB218	0.32
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 28	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB219	0.53
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 31	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB228	0.24
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 32	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB229	0.52
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 33	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB230	0.37
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 52	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB231	1.09
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 53	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB232	0.46
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 54	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB234	0.66
SOCORRO RIVERSIDE DRAIN	PT OF MAP 168 TR 55	FEE SIMPLE	MRGCD/BOR	PLATE 10	MB235	0.21
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 13	FEE SIMPLE	MRGCD/BOR	PLATE 10, 11	MB87	1.13

FACILITY NAME	MRGCD PROPERTY MAP ATLAS 2008 OWNERSHIP DESCRIPTION	OWNER TYPE	OWNER	U.S. ARMY CORPS OF ENGINEERS MAP BOOK PLATE	U.S. ARMY CORPS OF ENGINEERS MAP BOOK ID	ACRES
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 22B	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB89	0.02
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 22C	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB90	0.07
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 50	DEFERRED/PRESRIPTIVE	MRGCD/BOR	PLATE 11	MB91	2.82
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 33	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB92	1.31
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 34	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB94	1.41
SOCORRO RIVERSIDE DRAIN	PT OF MAP 172 TR 13	DEFERRED/PRESRIPTIVE	MRGCD/BOR	PLATE 11	MB96	4.65
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 21	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB101	1.10
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 22D	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB102	0.13
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 22E	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB103	0.19
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB137	3.80
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 35	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB139	4.38
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 20	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB143	3.51
SOCORRO RIVERSIDE DRAIN	PT OF MAP 172 TR 8	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB145	4.06
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 22	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB152	1.03
SOCORRO RIVERSIDE DRAIN	PT OF MAP 170 TR 22	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB153	1.44
SOCORRO RIVERSIDE DRAIN	PT OF MAP 169 TR 23	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB162	1.97
SOCORRO RIVERSIDE DRAIN	PT OF MAP 172 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 11	MB220	2.24
SOCORRO RIVERSIDE DRAIN (NKA SAN ANTONIO RIVERSIDE DRAIN)	PT OF MAP 172 TR 21	FEE SIMPLE	MRGCD/BOR	PLATE 11, 12	MB160	6.23
SOCORRO RIVERSIDE DRAIN (NKA SAN ANTONIO RIVERSIDE DRAIN)	PT OF MAP 173 TR 26	FEE SIMPLE	MRGCD/BOR	PLATE 12	MB118	0.97
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 173 TR 16	FEE SIMPLE	MRGCD/BOR	PLATE 12	MB119	11.47
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 175 TR 4	FEE SIMPLE	MRGCD/BOR	PLATE 12	MB151	7.09
SOCORRO RIVERSIDE DRAIN (NKA SAN ANTONIO RIVERSIDE DRAIN)	PT OF MAP 173 TR 25	FEE SIMPLE	MRGCD/BOR	PLATE 12	MB155	3.98
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 173 PUBLIC RD AND R. R. R/W	PRESRIPTIVE	MRGCD/BOR	PLATE 12	MB156	0.43
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 175 TR 8	FEE SIMPLE	MRGCD/BOR	PLATE 12	MB197	2.83
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 175 TR 6	FEE SIMPLE	MRGCD/BOR	PLATE 12	MB207	2.09
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 175 TR 6A	FEE SIMPLE	MRGCD/BOR	PLATE 12	MB208	1.32
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 175 TR 7	FEE SIMPLE	MRGCD/BOR	PLATE 12	MB233	0.56
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 173 TRS 7 & 8	DEFERRED/PRESRIPTIVE	MRGCD/BOR	PLATE 12	MB237	3.28
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 175 TR 78	FEE SIMPLE	MRGCD/BOR	PLATE 12, 13	MB148	6.36
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 179 TR 3	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB81	0.73
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 176 TR 72	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB98	1.26
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 176 TR 73	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB99	1.01
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 177 TR 2B	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB106	2.40
SAN ANTONIO RIVERSIDE DRAIN	ALL OF MAP 177 TR 11	PRESRIPTIVE	MRGCD/BOR	PLATE 13	MB140	0.31
SAN ANTONIO RIVERSIDE DRAIN "B"	PT OF MAP 179 TR 31	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB141	9.75
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 177 TR 2	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB146	1.02
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 176 TR 71	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB147	0.88
SAN ANTONIO RIVERSIDE DRAIN "B"	PT OF MAP 179 TR 30	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB158	2.54
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 179 TR 2A	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB163	0.59
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 177 TR 3	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB165	2.63
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 179 TR 2B	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB192	0.56
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 177 TR 2A	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB196	1.50
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 179 TR 1	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB222	0.81
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 176 TR 48	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB223	1.71
SAN ANTONIO RIVERSIDE DRAIN	PT OF MAP 177 TR 4	FEE SIMPLE	MRGCD/BOR	PLATE 13	MB224	5.75
SAN ANTONIO RIVERSIDE DRAIN & ELMENDORF DRAIN	PT OF BOSQUE DEL APACHE GRANT	FEE SIMPLE	MRGCD/BOR	PLATE 13, 14, 15	MB124	50.71

FACILITY NAME	MRGCD PROPERTY MAP ATLAS 2008 OWNERSHIP DESCRIPTION	OWNER TYPE	OWNER	U.S. ARMY CORPS OF ENGINEERS MAP BOOK PLATE	U.S. ARMY CORPS OF ENGINEERS MAP BOOK ID	ACRES
				TOTAL ACRES IN MRGCD/BOR		568.88
SEVILLETA NATIONAL WILDLIFE REFUGE	FISH AND WILDLIFE SERVICE	FEDERAL	FISH AND WILDLIFE SERVICE	PLATE 1	MB238	30.34
BOSQUE DEL APACHE NATIONAL WILDLIFE REFUGE	FISH AND WILDLIFE SERVICE	FEDERAL	FISH AND WILDLIFE SERVICE	PLATE 15, 16, 17, 18, 19	MB246	166.00
				TOTAL ACRES IN FEDERAL		196.34
STATE OF NEW MEXICO	STATE OF NEW MEXICO	STATE OF NEW MEXICO	STATE OF NEW MEXICO	PLATE 6	MB265	0.35
				TOTAL ACRES IN STATE GOVERNMENT		0.35
CITY OF SOCORRO	PRIVATE	LOCAL	CITY OF SOCORRO	PLATE 6	MB240	8.09
				TOTAL ACRES IN LOCAL GOVERNMENT		8.09
PRIVATE	PRIVATE	PRIVATE	AT&SF c/o BNSF	PLATE 1	MB241	9.50
PRIVATE	PRIVATE	PRIVATE	PRIVATE	PLATE 19, 20, 21	MB243	51.19
				TOTAL ACRES IN PRIVATE		60.69
				TOTAL ACRES ALL OWNERS		834.35
Tiffany Waste Disposal Area	PRIVATE	PRIVATE	PRIVATE	ACRES IN WASTE DISPOSAL AREA		307.22
Acres column represents the land area necessary for construction by the Corps and for the non-federal sponsor to perform OMR&R.						
Acres in Tiffany Waste Disposal Area not included in TOTAL ACRES ALL OWNERS						

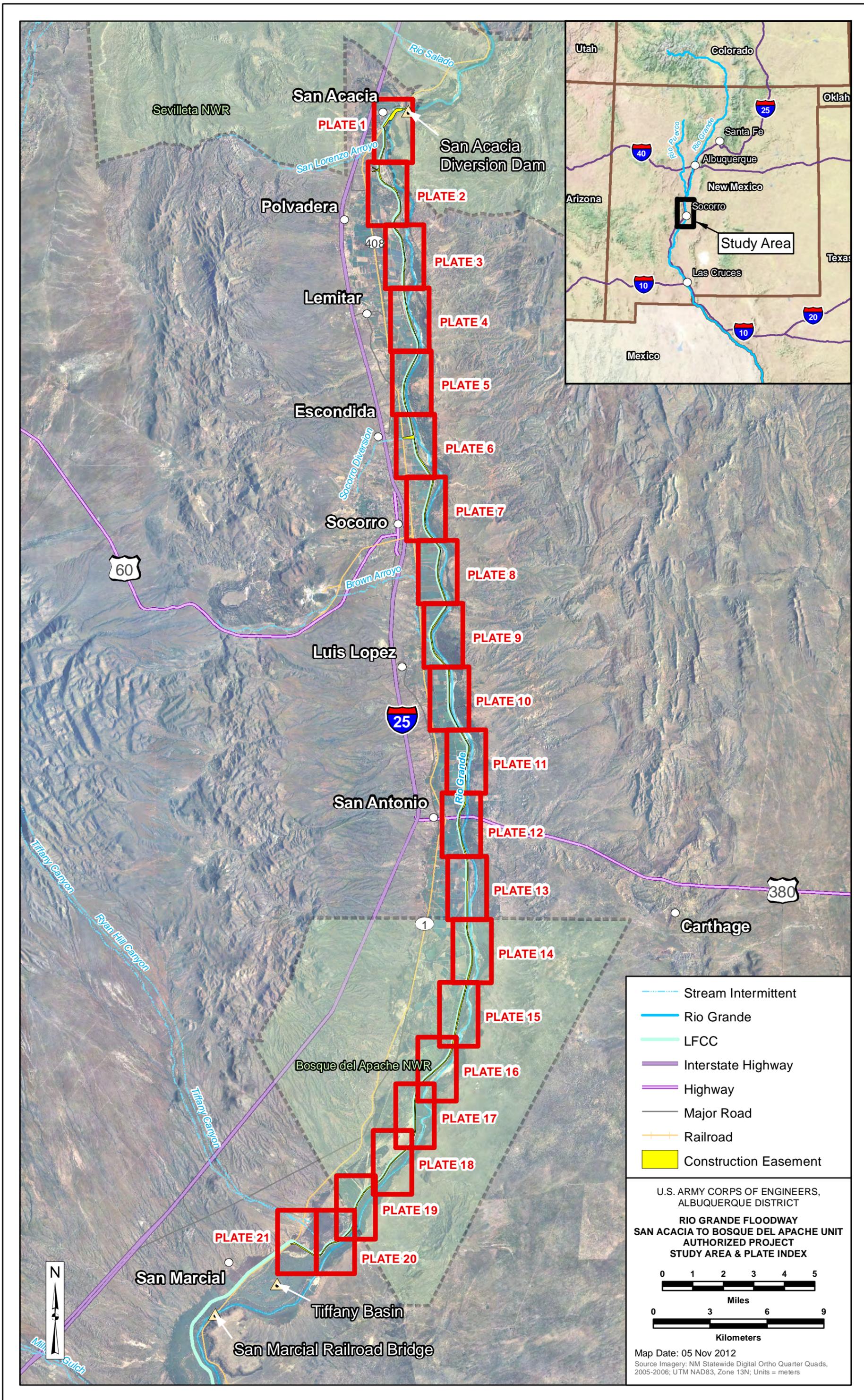


EXHIBIT C

Real Estate Plan

Exhibit C

Segment Map

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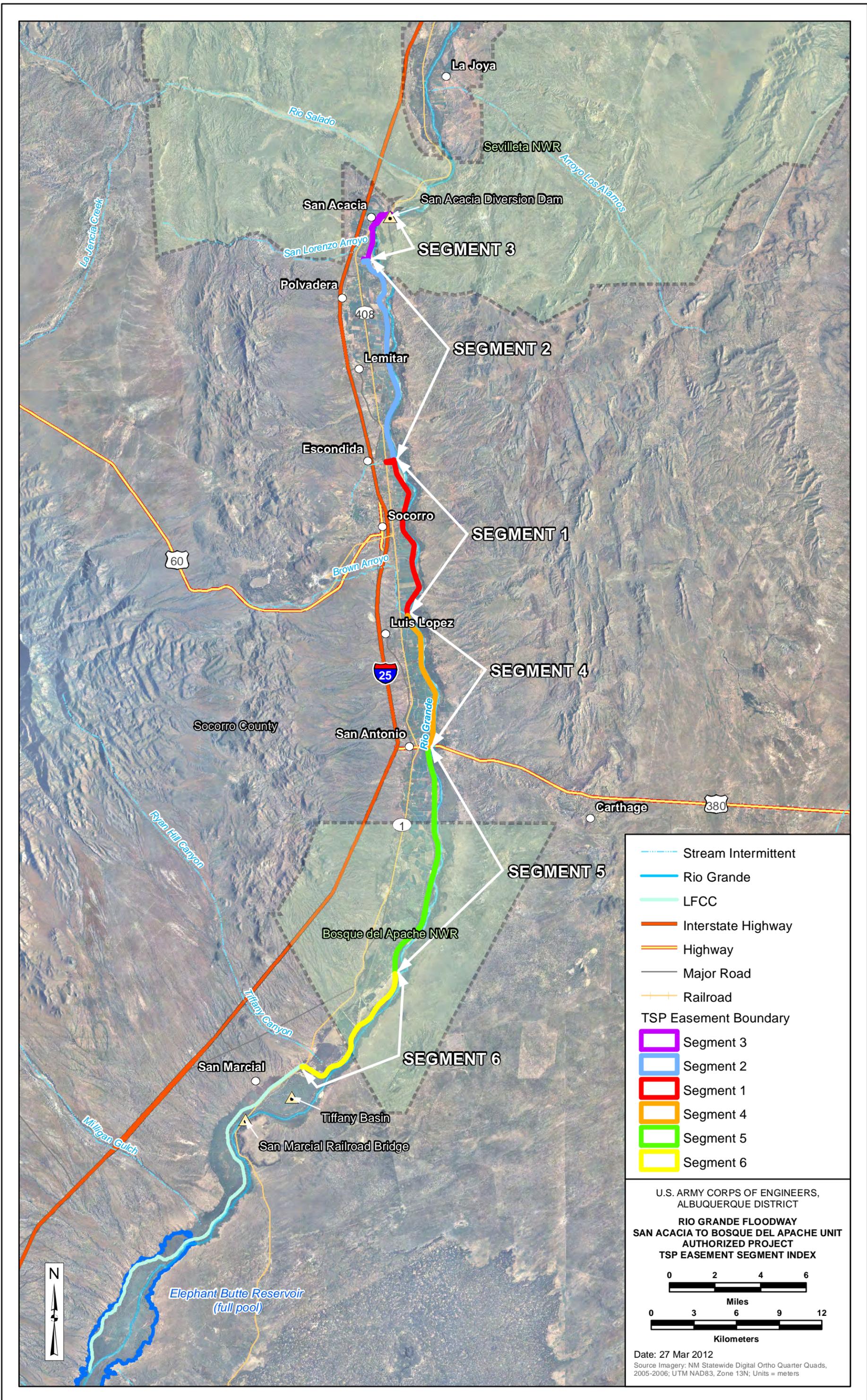


Exhibit C

Real Estate Plan

Exhibit D

**Assessment of Non-Federal Partners Real Estate
Acquisition Capability
(MRGCD)**

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EXHIBIT D

ASSESSMENT OF NON-FEDERAL PARTNERS
REAL ESTATE ACQUISITION CAPABILITY

General Reevaluation Report
Rio Grande Floodway
San Acacia to Bosque Del Apache Unit Project
Socorro County, New Mexico

I. LEGAL AUTHORITY

- a. Does the Non-Federal Cost-Sharing Partner have legal authority to acquire and hold title to real property for project purposes?

Yes. The Middle Rio Grande Conservancy District's (MRGCD's) Board's power and authority is clearly established by the Conservancy Act of New Mexico at New Mexico State Statutes Annotated (NMSA) 1978 § 73-14-39 (1927). This Act authorizes and empowers the MRGCD to protect life and property within the district from flooding by constructing the necessary works either within or outside of the district. The Board was given authority through the Conservancy Act to acquire real or personal property, public or private, either within or outside of the district, through donation, purchase, or condemnation.

Pursuant to New Mexico State Statute 73-14-39, General Powers: "... a Conservancy District has the authority and power to acquire by purchase or condemnation ..., own, use and sell, hold ... any real property."

- b. Does the Cost-Sharing Partner have the power of eminent domain for this project?

Yes. Please refer to I.a., above.

- c. Does the Cost-Sharing Partner have quick-take authority for this project?

Yes. The New Mexico State Statutes Annotated 42A-I-22, Condemnation Proceedings, " ... court may make an order within 30 days of the condemnation filing authorizing the condemner to take immediate possession of the property ... ", and 42-2-6, Special Alternative Condemnation Procedure, Preliminary Order of Entry, " ... petitioner may obtain a preliminary order permitting the political subdivision to immediately enter and occupy the premises sought to be condemned pending the action and to do such work thereon as may be required."

- d. Are any of the lands/interests in land required for the project located outside of the Cost-Sharing Partners political boundary?

Yes. Lands that may be required for excavation near the San Acacia Diversion Dam and potential lands for borrow; disposal, storage and staging areas are privately or federally held. Parts of the project area are located on and adjacent to the Sevilleta National Wildlife Refuge (the Sevilleta de la Joya Land Grant), the Town of Socorro Land Grant, the Bosque del Apache National Wildlife Refuge (NWR) and the Pedro Armendaris Land Grant.

- e. Are any of the lands/interests in land required for the project owned by an entity whose property the Cost-Sharing Partner cannot condemn?

Yes. The Cost-Sharing Partner would probably not be successful in condemning property of the Sevilleta and Bosque del Apache NWRs, nor any property owned by Reclamation or U.S. Department of the Interior, Bureau of Land Management. and Burlington Northern and Santa Fe Railroad. lands would be permitted to the cost sharing partner by the corresponding federal agency and the railroad.

II. HUMAN RESOURCE REQUIREMENTS

- a. Will the Cost-Sharing Partner's in-house staff require training to become familiar with the real estate requirements of federal projects including P.L.91-646, as amended?

No, the NFS proposes to contract for necessary real estate services familiar with the real estate requirements of federal projects including P.L.91-646, as amended, to fulfill its obligation to provide the LERRDs identified by the government.

- b. If the answer to II.a. is "yes" has a reasonable plan been developed to provide such training?

No training plan has been developed, nor is the need anticipated.

- c. Does the Cost-Sharing Partner's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project?

Yes, the NFS proposes to contract for necessary real estate services to fulfill its obligation to provide the LERRDs identified by the government.

- d. Is the Cost-Sharing Partner's project in-house staffing level sufficient considering its other work load, if any, and the project schedule?

Yes, the NFS proposes to contract for necessary real estate services to fulfill its obligation to provide the LERRDs identified by the government.

- e. Can the Cost-Sharing Partner obtain contractor support, if required, in a timely fashion?

Yes. The Corps will facilitate MRGCD in obtaining Acquisition services for the project. Acquisition services are readily available within the New Mexico area.

- f. Will the Partner likely request U.S. Army Corps of Engineers (Corps) assistance in acquiring real estate?

No. The partner will utilize contracted real estate services as necessary for acquiring real estate.

III. OTHER PROJECT VARIABLES

- a. Will the Cost-Sharing Partner's staff be located within a reasonable proximity to the project site?

Yes, The Corps has staff within 90 miles of the project.

- b. Has the Cost-Sharing Partner approved the project real estate schedule/milestones?

The Cost-Sharing Partner is aware of the status of the project and continues to support project development. MRGCD has reviewed and approved phase one of the project.

IV. OVERALL ASSESSMENT

- a. Has the Cost-Sharing Partner performed satisfactorily on other Corps projects?

Yes. Most recently this partner worked with the Corps on the Albuquerque West Levee project. The Cost-Sharing Partner is a well-established, long-standing state service provider to the inhabitants of the area and is empowered under the Conservancy Act of New Mexico at NMSA 1978 § 73-14-39 (1927), New Mexico State Statutes Annotated, which states in part:

“ . . .the board is authorized and empowered . . . in or out of said district . . . to construct and maintain main and lateral ditches, . . . canals, . . . levees, . . . retarding basins, floodways, . . . and any other works and improvements deemed necessary to construct, preserve, operate or maintain the works in or out of said district; to construct, reconstruct or enlarge or cause to be constructed, reconstructed or enlarged, any and all bridges that may be needed in or out of said district; . . . to construct, reconstruct any and all of said works and improvements in or out of said district; . . . and shall have the right to acquire by donation, purchase or condemnation to construct, own, lease, use and sell, to hold, encumber, control and maintain any easement, water right, acequias, well, railroad right-of-way, canal, sluice, flume, reservoir site, reservoir or retarding basin, mill dam, water power, franchise, park, cemetery or any other public way or place or any real or personal property, public or private in or out of said district, for rights-of-way and such other things, or for materials of construction or for any other use not inconsistent with the purposes of this act; . . .”

Additionally, the New Mexico Interstate Stream Commission has provided statements of financial support to the MRGCD and continues to show interest and support for this project.

- b. With regard to this project, is the Cost-Sharing Partner anticipated to be highly capable?

Yes.

V. COORDINATION

- a. Has this assessment been coordinated with the Cost-Sharing Partner?

Yes, additionally the Corps will coordinate with the Cost-Sharing Partner during the upcoming conduct of the Engineering Technical Appendix prepared for the General Reevaluation Report, which occurs after the F4A Alternative Formulations Briefing.

- b. Does the Cost-Sharing Partner concur with this assessment?

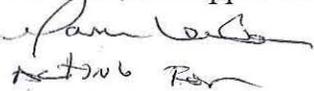
Yes, the Cost-Sharing Partner has previously stated their support of the project. The Cost-Sharing will provide a certification as to their financial capabilities as a part the Project Partnership Agreement.

Prepared by:



Mark K. Turkovich
Realty Specialist
13Jan12

Reviewed and approved by:



Karen Kennedy
Chief, Real Estate Division
13Jan12

EXHIBIT D

Real Estate Plan

Exhibit E

**Assessment of Non-Federal Partners Real Estate
Acquisition Capability**

(NMISC)

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EXHIBIT E

ASSESSMENT OF NON-FEDERAL PARTNERS'S
REAL ESTATE ACQUISITION CAPABILITY

General Reevaluation Report
Rio Grande Floodway
San Acacia to Bosque Del Apache Unit Project
Socorro County, New Mexico

I. LEGAL AUTHORITY

- a. Does the Non-Federal (Cost-Sharing) Partner have legal authority to acquire and hold title to real property for project purposes?

Yes. Pursuant to NMSA 1978 § 72-14-10, et seq., the New Mexico Interstate Stream Commission (NMISC) has authority to acquire and hold title to real property taken in the name of the Commission.

- b. Does the Cost-Sharing Partner have the power of eminent domain for this project?

Yes, Pursuant to NMSA 1978 § 72-14-10 et seq., the NMISC has authority to condemn real property for public use.

- c. Does the Cost-Sharing Partner have quick-take authority for this project?

Yes. Pursuant to NMSA 1978 § 42-2-1 et seq., the NMISC has the authority to use special alternative condemnation procedures to enter into possession at the inception of the proceeding and take possession of real property that is necessary for the immediate preservation of the public peace, health, safety, the promotion of the general welfare.

- d. Are any of the lands/interests in land required for the project located outside of the Cost-Sharing Partners political boundary?

No, Pursuant to NMSA 1978 § 72-14-3 the NMISC has authority throughout the State of New Mexico.

- e. Are any of the lands/interests in land required for the project owned by an entity whose property the Cost-Sharing Partner cannot condemn?

Yes. Some lands are in federal ownership.

II. HUMAN RESOURCE REQUIREMENTS

- a. Will the Cost-Sharing Partner's in-house staff require training to become familiar with the real estate requirements of federal projects including P.L.91-646, as amended?

The ISC is willing to have staff trained as indicated above.

- b. If the answer to II.a. is "yes" has a reasonable plan been developed to provide such training?

The ISC will develop a plan for the training and coordinate with USACE on such.

- c. Does the Cost-Sharing Partner's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project?

With the completion of the above-mentioned training, the NMISC as cost-share sponsor will have sufficient real estate acquisition experience for the project.

- d. Is the Cost-Sharing Partner's project in-house staffing level sufficient considering its other work load, if any, and the project schedule?

The planned phasing of the construction of this project assures sufficient in-house staffing levels.

- e. Can the Cost-Sharing Partner obtain contractor support, if required, in a timely fashion?

Yes, if required the ISC can obtain contractor support.

- f. Will the Partner likely request U.S. Army Corps of Engineers (Corps) assistance in acquiring real estate?

ISC does not plan to ask assistance from USACE for acquiring real estate.

III. OTHER PROJECT VARIABLES

- a. Will the Cost-Sharing Partner's staff be located within a reasonable proximity to the project site?

Yes

- b. Has the Cost-Sharing Partner approved the project real estate schedule/milestones?

The ISC concurs with the schedule prepared by the Corps and submitted by MRGCD on October 27, 2011 as part of their application for assistance to the New Mexico Water Trust Board.

IV. OVERALL ASSESSMENT

- a. Has the Cost-Sharing Partner performed satisfactorily on other Corps projects?

Yes. Most recently this partner worked with the Corps and performed outstandingly on the salinity studies on the Pecos River and Rio Grande River.

- b. With regard to this project, is the Cost-Sharing Partner anticipated to be highly capable?

The Cost-Sharing Partner is anticipated to be capable.

V. COORDINATION

- a. Has this assessment been coordinated with the Cost-Sharing Partner?

Yes, additionally the Corps will coordinate with the Cost-Sharing Partner during the upcoming conduct of the Technical Appendix prepared for the Limited Reevaluation Report, which occurs between the F4 Alternative Review Conference and the F4 Alternative Formulations Briefing.

- b. Does the Cost-Sharing Partner concur with this assessment?

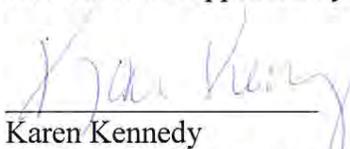
Yes, the Cost-Sharing Partner has previously stated their support of the project. The Cost-Sharing Partner will provide a certification as to their financial capabilities as part of the Project Partnership Agreement.

Prepared by:



Marvin L. Urban
Realty Specialist
13Jan12

Reviewed and approved by:



Karen Kennedy
Chief, Real Estate Division
13Jan12

GENERAL REEVALUATION REPORT AND
SUPPLEMENTAL ENVIRONMENTAL
IMPACT STATEMENT II:

RIO GRANDE FLOODWAY,
SAN ACACIA TO BOSQUE DEL APACHE UNIT,
SOCORRO COUNTY, NEW MEXICO

APPENDIX G

**Public Review and
Comments on the Draft
GRR/SEIS-II**

APPENDIX G

PUBLIC REVIEW AND COMMENT ON DRAFT GRR/SEIS-II

A notice of intent to prepare a Supplemental Environmental Impact Statement (SEIS) was published in the Federal Register on March 2, 2012 (Volume 77, No. 42, pages 12818-12819). The following is the text of the notice.

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Intent To Prepare a Draft Supplemental Environmental Impact Statement for the Proposed Rio Grande Floodway, San Acacia to Bosque del Apache, Socorro County, NM, Project

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

SUMMARY: The Albuquerque District, Corps of Engineers (Corps) is preparing a draft Supplemental Environmental Impact Statement (SEIS) on the findings of an ongoing flood risk management study along the Rio Grande from San Acacia downstream to San Marcial in Socorro County, New Mexico. The purpose of the study is to reevaluate the plan of flood protection authorized by the Flood Control Act of 1948 (Pub. L. 80–858) in light of recent changes in levee design parameters and environmental resources in the study area. The tentatively proposed plan is to replace the existing embankment between the Low Flow Conveyance Channel and the Rio Grande with a structurally competent levee capable of containing high-volume, long-duration flows. This engineered levee would substantially reduce the risk of damage from floods emanating from the Rio Grande. The local cost-sharing sponsors of the proposed project are the Middle Rio Grande Conservancy District and the New Mexico Interstate Stream Commission.

FOR FURTHER INFORMATION CONTACT: Questions or comments regarding the draft SEIS can be answered by: William DeRagon, U.S. Army Corps of Engineers, 4101 Jefferson Plaza NE., Albuquerque, New Mexico 87109; telephone: (505) 342–3358; email: william.r.deragon@usace.army.mil.

SUPPLEMENTARY INFORMATION: Previously, an environmental impact statement and two supplements have been published regarding this project. A final environmental impact statement addressing a recommendation to construct flood and sediment control dams on the Rio Puerco and Rio Salado was filed with the Council on Environmental Quality in 1977. An SEIS evaluating the effects of the alternative to rehabilitate the existing spoil-bank levee system was filed with the Council on Environmental Quality in 1992. In May 1997, a draft SEIS evaluating the revised design of the proposed levee to withstand long-duration floods and evaluating effects to recently listed endangered species was filed with the U.S. Environmental Protection Agency; however, a final SEIS was not prepared. Currently, a new draft SEIS is being developed to evaluate effects of revised levee design and additional alternatives. The draft SEIS will be integrated with a draft General Reevaluation Report, and the integrated document is hereafter referred to as the draft GRR/SEIS–II.

Alternatives Considered: Alternatives developed and evaluated during the current

effort and previous studies consist of levee reconstruction; flood and sediment control dams; local levees; intermittent levee replacement; watershed land treatment; floodproofing of buildings; levee-alignment setbacks; and no action.

Public Involvement: Coordination is ongoing with both public and private entities having jurisdiction or an interest in land and resources in the middle Rio Grande valley of New Mexico. These entities include the general public, local governments, the U.S. Bureau of Reclamation, the U.S. Fish and Wildlife Service, the New Mexico Department of Game and Fish, and the New Mexico State Historic Preservation Officer. Coordination will continue throughout the development of the draft GRR/SEIS–II.

Significant Issues To Be Analyzed: Issues to be analyzed in the development of the draft GRR/SEIS–II include the effect of alternatives on flood risk, floodplain development, water quality, ecological resources, endangered species, wildlife refuge objectives, social welfare, human safety, cultural resources, and aesthetic qualities. Development and implementation of mitigation measures will be undertaken for unavoidable effects.

Public Review: It is estimated that the draft GRR/SEIS–II will be circulated for public review in April 2012. All interested parties including Federal, state, and public entities will be invited to submit comments on the draft GRR/SEIS–II when it is circulated for review. A public meeting will be held during the public review period in Socorro, New Mexico. An announcement of the exact date and location of the public meeting will be published in the **Federal Register**, and in Socorro and Albuquerque newspapers.

Jason D. Williams,
*Lieutenant Colonel, U.S. Army Corps of
Engineers, District Engineer.*
[FR Doc. 2012–5091 Filed 3–1–12; 8:45 am]

The draft General Reevaluation Report/SEIS-II (GRR/SEIS-II) was submitted to the U.S. Environmental Protection Agency (USEPA) and was made available for public review and comment from April 27 through July 11, 2012. A notice of availability of the draft document was published by the USEPA in the Federal Register on April 27, 2012 (Volume 77, No. 82, page 25165). The Albuquerque District also published notices of availability in the Federal Register and in local newspapers. The following is the text of the District’s notice in the Federal Register (Volume 77, NO. 82, pages 25151-25152; April 27, 2012).

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Notice of Availability for the Draft Supplemental Environmental Impact Statement for the Proposed San Acacia to Bosque del Apache Project, Socorro County, NM

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

ACTION: Notice of availability.

SUMMARY: The Albuquerque District, U.S. Army Corps of Engineers (Corps) has prepared a draft Supplemental Environmental Impact Statement (SEIS) on the findings of

a flood risk management study along the Rio Grande from San Acacia downstream to San Marcial in Socorro County, New Mexico. The recommended plan is to replace the existing embankment between the Low Flow Conveyance Channel and the Rio Grande with a structurally competent levee capable of containing high-volume, long-duration flows. This engineered levee would substantially reduce the risk of damage from floods emanating from the Rio Grande. The local cost-sharing sponsors of the proposed project are the Middle Rio Grande Conservancy District and the New Mexico Interstate Stream Commission.

DATES: All comments must be submitted or postmarked no later June 11, 2012.

ADDRESSES: Comments, questions, requests for copies of the draft SEIS, and requests for notification of the public meeting can be addressed to: William DeRagon, email: william.r.deragon@usace.army.mil; or Mark Doles, email: mark.w.doles@usace.army.mil; U.S. Army Corps of Engineers, 4101 Jefferson Plaza NE., Albuquerque, New Mexico 87109.

FOR FURTHER INFORMATION CONTACT: Mr. William DeRagon, telephone: (505) 342-3358; or Mark Doles, telephone: (505) 342-3364.

SUPPLEMENTARY INFORMATION: Previously, an environmental impact statement (1992) and a supplement (1977) were published regarding this project. Currently, a new draft SEIS has been prepared to evaluate effects of revised levee design and additional alternatives. The draft SEIS is integrated with a draft General Reevaluation Report, and the integrated document is entitled: *Draft General Reevaluation Report and Supplemental Environmental Impact Statement II: Rio Grande Floodway, San Acacia to Bosque del Apache Unit, Socorro County, New Mexico* (hereafter referred to as the draft GRR/SEIS-II).

Alternatives developed and evaluated during the current and previous studies consist of levee reconstruction; flood and sediment control dams; local levees; intermittent levee replacement; watershed land treatment; floodproofing of buildings; levee-alignment setbacks; and no action. Issues analyzed in the development of the draft GRR/SEIS-II included the effect of alternatives on flood risk, developed lands and structures, water quality, ecological resources, endangered species, social welfare, cultural resources, and aesthetic qualities.

Public Review: The 45-day long review public review period for the draft SEIS begins on April 27, 2012; or on the filing date published by the U.S. Environmental Protection Agency in the **Federal Register**, if later. Copies of the draft SEIS are available at: <http://www.spa.usace.army.mil/fonsi/>. Copies also are available for review at the Socorro Public Library, 401 Park St, Socorro, NM.

A public meeting will be held during the review period in Socorro, New Mexico. An announcement of the exact date and location of the public meeting will be published in the Socorro, Albuquerque, and Santa Fe newspapers.

Julie A. Alcon,
U.S. Army Corps of Engineers Acting Chief,
Planning Branch.

[FR Doc. 2012-10168 Filed 4-26-12; 8:45 am]

A notice of availability of the draft document was published in the *Socorro Defensor-Chieftain*, the *Albuquerque Journal*, and the *Santa Fe New Mexican*. Copies were made available to the general public at the Socorro Library, Socorro, NM. A digital copy of the draft document and appendices was made available to the general public on the Albuquerque District's website.

Copies of the draft GRR/SEIS-II (either paper or digital) were mailed to the following entities:

Albuquerque Metropolitan Arroyo Flood Control Authority, Albuquerque, NM
Audubon New Mexico, Santa Fe, NM
Ben Ray Lujan Jr., U.S. Representative
Bosque del Apache National Wildlife Refuge, San Antonio, NM
City of Socorro, Socorro, NM
Elephant Butte Irrigation District, Las Cruces, NM
Jeff Bingaman, US Senator
Martin Heinrich, US Representative
Mid Region Council of Governments, Albuquerque, NM
Middle Rio Grande Conservancy District, Albuquerque, NM
NM Bureau of Geology and Mineral Resources, Socorro, NM
NM Department of Game & Fish, Conservation Services Division, Santa Fe, NM
NM Environment Department, Santa Fe, NM
NM Dept. of Homeland Security and Emergency Management
NM Interstate Stream Commission, Santa Fe, NM
NM Ranch Properties, Inc., Bozeman, MT
NM State Forestry Div., Energy, Minerals, and Natural Resources Dept., Santa Fe, NM
NM Water Science Center, Albuquerque, M
Pueblo of Sandia
Rio Grande Restoration, Embudo, NM
Sevilleta National Wildlife Refuge, Socorro, NM
Socorro County, Socorro, NM
Steven Pearce, U.S. Representative
Tom Udall, U.S. Senator
Town of Bernalillo, Bernalillo, NM
U.S. Bureau of Land Management, Socorro Field Office, Socorro, NM
U.S. Bureau of Reclamation, Albuquerque Area Office, Albuquerque, NM
U.S. Dept. of Agriculture, Natural Resources Conservation Service, Albuquerque, NM
U.S. Fish and Wildlife Service, Ecological Services Field Office, Albuquerque, NM
Water Culture Institute, Santa Fe, NM
WildEarth Guardians, Santa Fe, NM

A public meeting was held on May 22, 2012, from 5:00-7: PM, at the City of Socorro Council Chambers, Socorro, NM. The meeting was advertised in the same newspapers as the notice of availability of the draft document. Eight people attended the open-house meeting (exclusive of the Corps); no substantive comments were made on the draft GRR/SEIS-II.

The remainder of this appendix entails written comments on the draft document, along with annotated responses by the Corps.



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Surface Water Quality Bureau

Harold Runnels Building, N2050
1190 South St. Francis Drive (87505)
P.O. Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-0187 Fax (505) 827-0160
www.nmenv.state.nm.us



DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

JAMES H. DAVIS, Ph.D.
Director
Resource Protection Division

May 22, 2012

William DeRagon
Mark Doles
U.S. Army Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, NM 87109

RE: Draft General Reevaluation Report / Supplemental Environmental Impact Statement II, Rio Grande Floodway, San Acacia to Bosque del Apache Unit, Socorro County, New Mexico.

Dear Messrs. DeRagon and Doles:

The New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) has reviewed the Draft General Reevaluation Report / supplemental Environmental Impact Statement II, for the proposed flood risk management project along the Rio Grande from San Acacia downstream to San Marcial. SWQB provides the following comments regarding potential environmental impacts to surface water quality and wetlands.

The project area is adjacent to the Rio Grande, a perennial water of the state. The segment of the Rio Grande in this project area is currently listed for impairments due to Aluminum and E. Coli concentrations. Sediment from erosional processes is a serious form of nonpoint source (NPS) pollution, which can be exacerbated by vegetation removal. NPS pollution controls are typically established through implementation of Best Management Practices (BMPs). The vegetation removal described for this project will affect a 15 foot riparian corridor along the southern third of the levee project area that according to the GRR/SEIS II is planned to be replaced with some form of low vegetation (eg. Grasses and forbs). The east bank excavation of the flood plain area will also require revegetation of suitable wetland/riparian species to stabilize soil and sediment processes as well as avoid colonization by invasive species.

The project also calls for "the excavation of the east bank ... to reduce high velocity flows downstream of the San Acacia Diversion Dam (SADD) will require specialized construction methods to access and perform the required work. A temporary river crossing downstream of the SADD will be required to access the east bank from the LFCC service road on the west bank of the Rio Grande." National Pollution Discharge Elimination System (NPDES) permit coverage and Best Management Practices that comply with all State Water Quality Standards

U.S. Army Corps of Engineers

May 24, 2012

Page 2

(<http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0004.htm>) and Antidegradation Policy Implementation Procedures (<ftp://ftp.nmenv.state.nm.us/www/swqb/PPP/2010/PPP-AppendixA.pdf>) are required.

The GRR/SEIS II states that no wetlands will be impacted by this project.

The SWQB requires that best management practices are implemented so that impacts of this project to surface waters of the State are negligible.

Thank you for this opportunity to comment.



Shelly Barnes
Environmental Scientist-Specialist
Watershed Protection Section

Cc: Julie Roybal, NMED Environmental Review Coordinator

Response: The Corps updated the BMPs to be followed during construction and applied for State Water Quality Certification, which was issued by SWQB on February 21, 2013 (see Appendix B of the final GRR/SEIS-II).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 6

1445 Ross Avenue, Suite 1200 Dallas, TX 75202-2733

June 8, 2012

U.S. Army Corps of Engineers
Albuquerque District
Ms. Julie Alcon
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435

Dear Ms. Alcon:

In accordance with our responsibilities under Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Draft General Reevaluation Report and Supplemental Environmental Impact Statement Ii (GRR/SEIS-II) prepared by the U.S. Army Corps of Engineers (US ACE) for the Rio Grande Floodway, San Acacia to Bosque del Apache Unit, Socorro County, New Mexico.

EPA rates the Draft GRR/SEIS-II as "EC-2" i.e., EPA has "Environmental Concerns and Requests Additional Information" in the Final GRR/SEIS-II. The EPA's Rating System Criteria can be found here: <http://www.epa.gov/oecaerthinepa/commentsiratings.htm> I. Detailed comments are enclosed with this letter which more clearly identify our concerns and the informational needs requested for incorporation into the Final GRR/SEIS-II. Responses to comments should be placed in a dedicated section and should include the specific location where the revision, if any, was made. If no revision was made, a clear explanation should be included.

EPA appreciates the opportunity to review the Draft GRR/SEIS-II. Please send our office one copy of the Final GRR/SEIS-II and an internet link or CD when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Federal Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20004. Our classification will be published on the EPA website, <http://www.epa.gov>, according to our responsibility under Section 309 of the CAA to inform the public of our views on the proposed Federal action. If you have any questions or concerns, please contact John MacFarlane of my staff at macfarlane.john@epa.gov or 214-665-7491 for assistance.

Sincerely,

Rhonda Smith
Chief, Office of Planning
and Coordination

Enclosure

**DETAILED COMMENTS ON THE U.S. ARMY CORPS OF ENGINEERS' DRAFT
GENERAL REEVALUATION REPORT AND SUPPLEMENTAL ENVIRONMENTAL
IMPACT STATEMENT II
FOR THE
RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE UNIT
SOCORRO COUNTY, NEW MEXICO**

BACKGROUND:

The General Reevaluation Report/Supplemental Environmental Impact Statement II (GRR/SEIS-II) addresses alternative plans to provide higher levels of flood risk management to floodplain communities along the Rio Grande from the San Acacia Diversion Dam downstream to Elephant Butte Lake, New Mexico. The GRR/SEIS-II determines (1) whether the Authorized Project is still implementable; (2) if any changes are necessary for implementation; and (3) if the changes are within the approval authority delegated to the Division Commander, the Corps, or if they require additional Congressional authorization. The GRR/SEIS-II is a complete Alternative Formulation Briefing document with recommendations on future actions to best meet the flood risk management needs within the study area.

CHAPTER 2 -EXISTING CONDITIONS

2.2.1 Climate (and Greenhouse Gases¹)

By statutes, Executive Orders, and agency policies, the Federal government is committed to the goals of energy conservation, reducing energy use, and eliminating or reducing greenhouse gas (GHG) emissions. EPA recommends the Final GRR/SEIS-II address GHG emissions and climate change. For guidance, please see CEQ's "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions" dated February 18,2010.

Response: The Mandatory Reporting of Greenhouse Gases Rule (74 FR 56260) requires reporting of greenhouse gas (GHG) data and other relevant information from suppliers of fossil fuels or entities that emit industrial GHG, manufacturers of vehicles and engines and facilities that emit 25,00 metric tons or more per year of GHG emissions. The proposed Federal action does not include activities in the Source Category/Segment Selection List for quantification of emissions from large direct emitters. Therefore, mandatory reporting of Greenhouse Gases Rule is not applicable for this project.

Section 6.2.5 discusses GHG emissions. "Construction equipment would intermittently increase the concentrations of CO, NO_x, SO₂, particulates because they are the primary exhaust products from diesel engines. Dust from excavation and vehicle movement during construction would temporarily increase the concentration of airborne particulate matter locally. These short-term CO, NO_x, SO₂, and particulate emissions have been generously calculated to total approximately 48, 118, 11, and 10 tons, respectively. Because construction would be implemented in phases over 10 to 14 years, the annual emissions of these pollutants would be equal to or less than 4.8, 11.8, 1.1, and 1.0, respectively. Because the proposed project area lies within attainment areas for criteria pollutants, the General Conformity Rule does not apply. However, it is worth noting that even if the proposed project area was located in a non-attainment or maintenance area for any criteria pollutants, according to EPA and state standards, annual

¹ EPA identified topic that should be addressed in the Final GRR/SEIS-II

estimated emissions for these contaminants as a result of proposed construction activities would be defined as *de minimus*.”

The yearly GHG emissions for this proposed Federal action will not exceed the 25,000 metric ton recommendation. The Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, dated February 18, 2010, does not propose the 25,000 metric ton value as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs. Therefore, no additional documentation is required.

Global anthropogenic GHG emissions substantially have increased the risk of flood occurrence, especially in arid environments (Molnar, 2012). The proposed levee construction alternatives will provide additional buffers to prevent flooding of the low-flow conveyance channel and the city of Socorro. The GHG emissions after a catastrophic flood within the project area would increase due to emergency operations, restoration and remediation activities.

USACE will implement Best Management Practices (BMPs) to limit GHG emissions. When applicable, the use of clean, lower-emissions equipment and technologies to reduce pollution will occur. The use of lower sulfur fuels will be included in the BMPs.

2.7.1 Demography and 2.7.5 Environmental Justice

The demographic analysis is incomplete as only information about the City of Socorro was included. Although the rest of the project area is basically rural, sparsely populated, and is not developed for industrial or commercial uses, it is important to fully characterize the demographic makeup of the entire project area. Data should be provided by census tract and block group for the area surrounding levee construction, to include minority and low-income populations.

Response: The affected area of the Rio Grande Floodplain within Socorro County encompasses most of one census tract while the remaining effected area is a small part of a census tract making up the majority of rural portions of Socorro County. While Socio-economic statistics are similar for both tracts they are presented in tables for comparison with Socorro County, New Mexico and the United States. Tables displaying data regarding household income, poverty level, minority populations and ethnicity relative to the state and U.S. are included in the Final EIS. The following discussion will be included with the tables.

“The population within the study area at risk of flooding and effected by reduced flood risk though implementation of a Federal Project is disproportionately of a minority group and with income below poverty level compared with New Mexico and the United States. Census tract 9783.03 is within the Rio Grande floodplain west of the river and makes up just under half the areal extent of the study area. When compared to Socorro County, New Mexico and the United States this tract is made up of a much larger proportion of residents of Hispanic or Latino ethnicity. Median Household income for this tract is slightly higher than that of the county but lower than New Mexico and the U.S. The percent of population with income below the poverty level is 21% compared to 27% for the County and 14% and 10% for New Mexico and the U.S. respectively. The study area outside of census tract 9783.03 is included in census tract 9781 which includes all of Socorro County East of I-25. Tract 9781 has similar median income but a slightly higher number of individuals with income below poverty level (25%).”

Tiffany Basin

Section 5.1.1 0 -Fill, Borrow, and Disposal Requirements states "A spoil location within the Tiffany basin was identified as adequate for spoil subject to acquisition of the right to dispose in that area." As defined by 40 Code of Federal Regulations (CFR) §1508.25, using the Tiffany basin for a

spoil disposal site is a connected action. Thus, the Final GRR/SEIS-II should fully characterize the existing conditions of the Tiffany basin and subsequently analyze the impacts to the basin and its resources from spoil disposal. In addition, any on-or off-site staging, disposal, and borrow sites that may be part of the proposed project, must be addressed in this same manner.

Response: The text in Chapters 2 (Existing Conditions) and 5 (Foreseeable Effects) have been revised to more clearly describe the conditions and potential effects of spoil disposal at the Tiffany Basin.

Recreation Resources¹

The Final GRR/SEIS-II should address recreation resources. The clearing of undeveloped land to construct the new levee could result in the loss or degradation of fish and wildlife habitat that are utilized for nature-based recreation. People traveling to the area for bird watching, fishing, and other nature-based recreational opportunities could see a decrease or alteration in the available natural areas that play host to these opportunities. Impacts to recreational resources would most likely occur on lands within the Bosque del Apache National Wildlife Refuge, as approximately 8.7 acres of vegetation would be removed.

Response: The text has been revised to describe that the location of vegetation alteration or removal within Bosque del Apache NWR are closed to public access and would not substantively affect recreational opportunities at the refuge.

CHAPTER 5 -DESCRIPTION OF THE FINAL ARRAY OF ALTERNATIVES:

According to 40 CFR 1502.14, the Alternatives section "should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." The Final GRR/SEIS-II should formulate the basis for comparison and include an alternatives screening analysis, including a comparison of alternatives and reasons why alternatives were eliminated or carried forward. The Final GRR/SEIS-II should include clear and concise rationale as to why the recommended plan was selected as the preferred alternative.

Response: Chapters 5 (Description of the Final Array of Alternatives), as well as Chapter 6 (Foreseeable Effects) has been revised to more clearly allow for comparison of issues and effects among the reasonable alternatives, and to clarify the bases of comparison and the rationale for selection of the proposed action.

The sometimes non-linear screening of alternatives is inherently difficult to explain. The structure of the document provides multiple iterations of alternatives screening including alternatives considered in previous EIS's (summarized in table 4.1). Remaining alternatives including non-structural measures and levees are then screened based on completeness, effectiveness and efficiency in Chapter 4. Section 4.6 focuses on optimization of levee height primarily on cost/benefit basis that is then applied to the remaining alternative levee lengths. The final array is then two levee lengths at two levee heights respectively and implementation of a levee setback as a measure applied to all four levee alternatives. Those alternatives are then compared based on several criteria as summarized in Table 4.12. Alternative A with a levee height corresponding to the Base Levee + 4 ft is the described in detail in Chapter 5 since the remaining alternatives are essentially variants or extensions of the same Alternative A levee. Additional discussion is added to the first paragraphs of Sections 4.7, 4.9, 4.10 and 5.1 to link the discussion of screening and progression of the final array of alternatives. A discussion and table is added

in Section 4.10 to summarize screening up to this point and describe alternatives carried forward for analysis of environmental effects.

5.1.14 East Bank Excavation and Access

This section discusses a temporary river crossing downstream of the San Acacia Diversion Dam. The Section 404(b)(1) Guidelines Evaluation in Appendix B states "To access the East Bank Excavation area, a temporary crossing would be placed across the channel of the Rio Grande. The crossing would be 300 feet long with a top-width of 15 feet. The crossing would entail 1,000 CY of earthen material (from a portion of the previously excavated spoil bank) and six 60-inch-diameter, 30-foot-long corrugated metal pipes. The majority of these materials would be below the OHWM." This section and the 404(b)(1) evaluation should address when and how the crossing will be removed, where and how the material will be disposed of, impacts to appropriate resources, especially water quality, and how the area will be restored to pre-project conditions.

Response: Chapter 5 and Appendix B were revised accordingly. Briefly, during low-flow conditions, material comprising the crossing will be carefully removed by excavators. As much material as practicable will be removed without excavating the pre-existing channel bottom. In such case, a relatively small amount of earthen material might be left in place; however, considering that the channel is incised in this reach and is sediment-deficient, this excess material would not be detrimental. The resumption of flow when material is removed would cause only a slight and temporary increase in suspended sediment. Excavated earthen material from the crossing would be disposed similarly to that proposed for waste spoil from the existing spoilbank (see Section 6.2.2). Also see Section 6.2.4, Water quality, for a detailed discussion regarding water quality and Clean Water Act permitting.

5.5 Levee Setback at River Mile 108

This alternative is a slight modification in the alignment of any of the four levee-construction alignments. The alignment of the new levee, Low Flow Conveyance Channel, and associated maintenance roads would be shifted to the west, thus reconnecting approximately 80 acres of the floodplain with the floodway.

The degradation of the Rio Grande and its associated bosque is well-documented among researchers and scientists who have studied the Rio Grande ecosystem. The GRR/SEIS-II states on page 2-14 "Changes to channel geometry have reduced overbank flooding and floodplain connectivity, limiting regeneration of riparian habitat. The long-term impacts of channel incision on wetland and riparian habitat are two-fold: a gradual reduction in the number of wetland and riparian plant species results in shrinking areas of these habitat types while at the same time, the lower ground water and surface water elevations relative to floodplain terraces reduce the probability of regeneration of these habitats."

As the preferred alternative would only exacerbate the degradation of the Rio Grande ecosystem, including altered river geomorphology, habitat fragmentation, habitat degradation, continued wetland loss, and adverse effects to rare plant and animal species, EPA recommends the Levee Setback at River Mile 108 alternative be implemented. This alternative would reconnect approximately 80 acres of floodplain to the floodway. EPA encourages expanding the carrying-capacity for floodwaters with levee setbacks that reconnect the historic floodplain throughout the portion of the Rio Grande watershed in the project area. The positive effects of floodplain reconnection are numerous, including but not limited to, native vegetation regeneration, downstream flood reduction, wetland formation, and positive effects to rare plant and animal

species.

Response: The text has been revised to describe that the relative habitat value of the 80 acres added to the floodway as a result of the Levee Setback at River Mile 108 would be low because the area would be inundated infrequently; that is, by flows equal to or greater than 15,400 at San Acacia cfs (10% chance exceedance). The following text is added to section 5.5 "Vegetation in this area would not change substantially since the current elevation does not experience inundation until river flows approximately 15,400 cfs (10% chance exceedance flow). The additional area in the floodway would have some benefit by increasing floodway capacity during flows that exceed this discharge." And in Section 6.4.1 e. "Vegetation composition within the 80 acre area would not be expected to change significantly since inundation would occur infrequently however some geomorphic changes from river channel meander may occur in the long term without threatening the levee in its new alignment."

Additionally, the U.S. Bureau of Land Management has determined that the Setback at River Mile 108 alternative would be inconsistent with the goals and objectives of the recreation area as stated in their Socorro Resource Management Plan. This correspondence has been included in Appendix G of the final GRR/SEIS-II.

CHAPTER 6 -FORESEEABLE EFFECTS OF THE PROPOSED ACTIONS AND ALTERNATIVES

6.2.4 Water Quality

Page 6-8 states "Considering the relatively minor net effects described above, none of the levee construction alternatives would adversely affect water quality and waters of the United States." While adverse impacts to water quality may be minor and temporary, we do not agree that there will be no adverse effects whatsoever. Any construction activity, within a waterway would affect, to some degree, the physical, chemical, and/or biological characteristics of that waterway. This section should address, in detail, any impacts, the degree of the impacts (minor, moderate, or significant), and the longevity (short or long) of the impacts. Rip rap placement below the ordinary high water mark along 2.5 miles of the river should be specifically addressed and analyzed for impacts to water quality.

Section 6.2.4 was modified to discuss the minor and temporary impacts to water quality during the construction and removal of the temporary water crossing and all other activities that may disturb water quality. USACE will monitor water quality prior to, during, and after construction activities that may alter general water quality. Water quality monitoring is discussed in previous response to comment and in BMPs of the GRR/SEIS-II (See Section 6.2.4). It is anticipated that any impacts will be short in duration, and will equilibrate back to preexisting conditions quickly after disturbance. In the Rio Grande there are extended periods of low flow, with extremes in habitat characteristics, such as depth, velocity, and cross-sectional area, and water quality parameters, such as temperature, dissolved oxygen, and suspended sediment, which require existing communities to have wide environmental tolerances (Crawford, et al., 1993). Therefore, if any minor and temporary impacts to water quality occur, it will not disturb the existing biological communities. BMPs identified in the GRR/SEIS-II and the SWPPP reduce any potential impacts to water quality. Riprap, consisting of uncontaminated, appropriately sized basalt, will not adversely impact water quality. Riprap will stabilize the toe of the levee, which will limit scouring and mobilization of sediments during periods of inundation. At all locations, the majority of the riprap volume would be buried below the substrate, limiting the interactions with surface water.

State water quality certification for the recommended plan was issued by the New Mexico Environment Department, Surface Water Quality Bureau, on February 21, 2013, and is referenced in the final

GRR/SEIS-II, and included in Appendix B.

6.2.5 Air Quality

Any demolition, construction, rehabilitation, repair, dredging or filling activities have the potential to emit air pollutants and we recommend best management practices be implemented to minimize the impact of any air pollutants. Furthermore, construction and waste disposal activities should be conducted in accordance with applicable local, state and federal statutes and regulations.

EPA encourages the use of clean, lower-emissions equipment and technologies to reduce pollution. EPA's final Highway Diesel and Nonroad Diesel Rules mandate the use of lower-sulfur fuels in non-road and marine diesel engines beginning in 2007.

Response: Section 6.2.5 was edited to reflect minimal, if any, short term impacts to air quality that may occur as a result from construction of any of the levee construction alternatives. As discussed in Section 6.2.5, during ground disturbance activities, stockpiles, haul roads, access roads, staging areas, borrow areas, and all other work within or outside the project boundaries would be required to be maintained to prevent hazardous or nuisance airborne particulate matter. Impacted areas will be periodically sprayed with water or other approved methods to minimize fugitive dust and other particulate. Construction, recycling activities and waste disposal activities will be conducted with applicable local, state and federal statutes and regulations. When feasible, the use of clean, lower-emission equipment and technologies to reduce pollution will be implemented.

6.4.1 Aquatic Habitat and Inundated Floodway

This section should identify impacts to aquatic habitat caused by the proposed construction project. Currently, this section only addresses flooding impacts (indirect) and the areal loss or gain to floodway and floodplain areas due to levee construction. The Final GRR/SEIS-II should address impacts to aquatic habitats due to construction, including impacts to the various aquatic organisms within the river.

Response: Section 6.4.1 was revised accordingly.

6.5 Special Status Species

This section should address all species on the U.S. Fish and Wildlife Service (USFWS) list of threatened and endangered species within Socorro County, including candidate species. It should also address state listed species. A table should include the species, their preferred habitat, if the project area contains the preferred habitat, and potential impacts from the proposed project. We recommend the USACE contact the New Mexico Department of Game and Fish (NMGF) as to the appropriate state listed species to include in this analysis. The NMGF may have recommendations and mitigation plans relative to state listed species that would be important to employ during and after construction of this project.

Response: Response: The Corps submitted its Biological Assessment for consultation with the U.S. Fish and Wildlife Service in December, 2011. The Service issued its final Biological Opinion on February 28, 2013. All relevant information regarding this consultation is contained in Appendix C to the GRR/SEIS-II. The Service's Biological Opinion contains stringent, non-discretionary terms and conditions designed to implement reasonable and prudent measures required for the protections for all threatened and

endangered species. The Corps also provided the draft GRR-SEIS-II for review to the New Mexico Department of Game and Fish; no comments were submitted to the Corps.

The Final GRR/SEIS-II should include results of Section 7 consultation with the USFWS and coordination with NMGF. Where possible, we recommend that mitigation measures be identified for all special status species with the potential to be adversely affected by direct and indirect impacts of the project.

Response : The Final GRR/SEIS-II includes a summary of the results of Endangered Species Act consultation and an updated mitigation plan. Appendix C of the document includes the Programmatic Biological Opinion, and Appendix.F-4 includes the updated mitigation plan.

6.8.5 Environmental Justice

Utilizing the data collected in Section 2.7.5, this section should determine if there are disproportionately high and adverse human health or environmental effects to minority and/or low-income populations within the project area.

Response: Updated numbers from the 2010 census will be added to the discussion in Section 2.7.5. The affected area of the Rio Grande Floodplain within Socorro County is included in 2 of five Census tracts for Socorro County. One tract corresponds to approximately half of the Rio Grande Flood plain in the study area while the rest of the study corresponds to the tract that includes most of the rest of Socorro County. Data regarding household income, poverty level, minority populations and ethnicity relative to the state and U.S. will be included in the Final EIS.

6.10 Cumulative Impacts

40 CFR §1508.7 states that cumulative impacts are those impacts "on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or persons undertake such actions." EPA suggests the Final GRR/SEIS-II include a thorough cumulative impacts analysis by establishing spatial and temporal boundaries for each applicable resource and including a list and description of past, present, and reasonably foreseeable future projects. These projects should be analyzed, in conjunction with the proposed project, as to their cumulative effects on the natural and human environment.

Please refer to the Council on Environmental Quality's "Considering Cumulative Effects Under the National Environmental Policy Act" and EPA's "Consideration Of Cumulative Impacts In EPA Review of NEPA Documents" for assistance with identifying appropriate boundaries and identifying appropriate past, present, and reasonably foreseeable future projects to include in the analysis.

Response: Section 6.10, Cumulative Effects, has been revised accordingly, incorporating guidance from the above references, as appropriate.

CHAPTER 7 - POST AUTHORIZATION CHANGES

7.1.13 Public Involvement

From the current language in this section, it appears that there was no public involvement efforts except for those made in 1992 and 1999. EPA believes that the information provided and the public involvement afforded is insufficient for a project of this magnitude. However, a phone discussion and subsequent email from Mark Doles of the USACE Albuquerque District revealed that the USACE did make recent efforts to involve stakeholders and local, state, and federal agencies in project development. The USACE has agreed to provide additional information regarding their public involvement process. If the following language provided by the USACE is incorporated into the Final GRR/SEIS-II, EPA feels that the public participation process was sufficient.

"Public concerns as well as those of the coordinating resource agencies helped guide the development and formulation of the array of alternative plans presented in this GRR/SEIS-II. During the study, coordination within the Middle Rio Grande community was accomplished through Middle Rio Grande Endangered Species Collaborative Program (MRGESCP), Middle Rio Grande Levee Task Force, reservoir operation and water delivery functions. The MRGESCP is a partnership involving 16 current signatories organized to protect and improve the status of endangered species along the Middle Rio Grande (MRG) of New Mexico while simultaneously protecting existing and future regional water uses. The levee task force was created to study the status of levees in the Middle Rio Grande valley. Flood risk management issues as well as environmental or ecosystem health issues were communicated through these organizations and incorporated into the project objectives.

The lack of integrity of the existing spoil bank in the study reach and other locations in the Middle Rio Grande reach dictate the upper limits of releases from upstream dams. These limitations impact water delivery, sediment movement and floodplain ecosystem function. These three issues are intertwined and the subject of discussion and implementation for coordinating in the San Acacia to Bosque del Apache Unit. The US ACE, as a member of these coordinating groups and involvement in water delivery effort for several years, is aware of the issues surrounding flood risk management levees in the study reach. Consideration of environmental impacts, endangered species requirements and river function was incorporated into the design of the current study.

In addition to many informal conversations with stakeholders, the USACE hosted an information and scoping meeting on 14 January 2011 for several stakeholder and interest groups to present the array of alternatives and tentatively selected plan. The group included members of the Save Our Bosque Taskforce, Audubon Society, Wild Earth Guardians, Rio Grande Restoration, the Water-Culture Institute, Bureau of Reclamation, and representatives from Senators Bingaman and Udall's offices. The input received from the meeting included additional forecasting of future conditions and evaluation of levee setbacks as presented in the GRR/SEISII.

A public meeting was held on 22 May 2012 at the Socorro city council chambers to coincide with the public review of the GRR/SEIS-II. There were eight attendees from interested citizens and agencies. No official comments were received during the public meeting. The attendance list and comments received during the public review period are included in Appendix G. The notice of this

meeting appeared in the Santa Fe New Mexican (3 publications), The Albuquerque Journal (4 publications) and Socorro El Defensor-Chieftain (1 publication). Notices of availability of the public document for review appeared in each of the same newspapers. Paper copies of the document were made available at the Socorro City Library and the USACE office in Albuquerque. Electronic copies on compact disk were sent to approximately 50 stakeholders and agencies as well as made available on the USACE website."

[No additional response required.]



United States Department of the Interior
OFFICE OF THE SECRETARY



Office of Environmental Policy and Compliance
1001 Indian School NW, Suite 348
Albuquerque, New Mexico 87104

ER 12/306
File 9043.1

June 11, 2012

VIA ELECTRONIC MAIL ONLY

William DeRagon
U.S. Army Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109

Dear Mr. DeRagon:

The U.S. Department of the Interior is providing comments on the U.S. Army Corps of Engineers' Draft General Reevaluation Report/Supplemental Environmental Impact Statement II: Rio Grande Floodway, San Acacia to Bosque del Apache Unit, Socorro County, New Mexico (GRR/SEIS-II). The GRR/SEIS-II addresses alternative plans to provide higher levels of flood risk management to floodplain communities along the Rio Grande from the San Acacia Diversion Dam downstream to Elephant Butte Lake, New Mexico. The recommended plan consists of an earthen levee extending approximately 43 miles along the west bank of the Rio Grande, from the San Acacia Diversion Dam to Tiffany Junction, ending approximately 3 miles north of the Railroad Bridge at San Marcial. The comments provided in the Enclosure are intended to provide technical assistance. We offer both general and specific comments.

We appreciate the opportunity to provide comments on the GRR/SEIS-II and we look forward to continuing to work with the Corps on this project. If you have any further questions, please contact Aaron Archibeque, Regional Chief, U.S. Fish and Wildlife Service, National Wildlife Refuge System, Albuquerque, New Mexico, at 505-248-6937.

Sincerely,

Stephen R. Spencer, PhD
Regional Environmental Officer

Enclosure

Comment Number/ Commenter	Chapter	Page Number	Comment
#1 Bosque del Apache (BdA)	General		<p>Jetty jacks are located intermittently along the entire project area. Jetty jack removal should be described in sections relative to the riprap placement and their continued service to flood risk management.</p> <p>Response: Concur. Section 5.1.4, Levee Erosion Control, was revised to include the following text: "Graded stone erosion protection revetment, known commonly as riprap, has been specified in areas judged to be susceptible to erosion and scour that could compromise the project's performance or physical integrity of the proposed levee. Existing jetty jacks located in and around the proposed project area would continue to provide erosion protection. Riprap placement (along with other forms of armament such as soil cement) has been designed to extend, rather than replace, the existing jacks in order to improve project reliability. Except for limited areas, such as where portions of existing jack tieback lines will be shortened to permit construction access, the existing jacks would remain in place to continue functioning as retards. For those limited cases where jack lines will be shortened, the ends would be re-anchored to preserve their functionality."</p> <p>In some cases, jetty jacks help to control public motorized access and could be beneficial even if not serving a flood risk purpose and in other cases they obstruct restoration or recreation efforts. The Corps should consult with local land managers and interested parties about these features.</p> <p>Response: Concur. As you have noted, the jack fields impose a substantial obstacle to motorized travel, and can also impose restrictions for pedestrians, equestrians, bicyclists, etc. Throughout the ensuing design process, the Corps will continue to coordinate with stakeholders and resource agencies in the project area. There are opportunities under this project to address specific cases where jack removal might be desirable. In such cases it will be necessary to determine if the need for stabilization that led to the original jetty jack placement remains or would be anticipated to recur over the proposed project's life, and to restore that functionality as needed through other means, including through riprap.</p>
#2 BdA	General		<p>There are a number of access ramps off the levee both to the west and east in the project area. Coordinate with local land managers and interested parties about the appropriate ramps for the Socorro Riverine Parks and other needs such as access to utilities, access to lower berm roads, and ramps for firefighting access. It may be appropriate to limit access in some areas.</p>

			<p>Response: Concur. The current intent is to replace access ramps in the same location they occur presently. As part of the detailed design coordination will be conducted with stakeholders such as Bureau of Reclamation, MRGCD, NM State Forestry, and USFWS, to determine if access ramps should be added removed or remain.</p>
#3 Sevilleta	General		<p>The document does not mention any impacts or effects to Sevilleta NWR. The Refuge was under the impression the Corps wanted to excavate the area on the east bank of the Rio Grande, south of San Acacia Diversion Dam, in order to lessen the angle of the river bend, and would need to build a temporary bridge across the Rio Grande south of San Acacia along with a road up the east side of the River. This all occurs on Sevilleta NWR land, and quite a bit of salt cedar and some native riparian vegetation would need to be cleared and subsequently revegetated with native species.</p> <p>Response: East-side Excavation is described in Section 5.1.2 and 5.1.14 and has been revised per comment 9 below. Effects of this measure are analyzed in Sections 6.2.4, 6.4.1.2, and 6.4.2.1. Mitigative plantings are described in Section 6.4.2.4. These and other pertinent sections of the final GRR/SEIS-II were revised to specify that the described features or effects occur on Sevilleta NWR.</p>
#4 Sevilleta	S	2	<p>The Executive Summary only describes two Federally-owned facilities within the area of consideration, Bosque del Apache NWR and Low Flow Conveyance Channel. This should reflect three Federally-owned facilities, to include Sevilleta NWR.</p> <p>Response: Concur. The text is changed in the executive summary as well as Section 1.4 to read: "Three major Federally owned facilities within the area of consideration are the Sevilleta National Wildlife Refuge, Bosque del Apache National Wildlife Refuge (BDANWR) and the Low Flow Conveyance Channel (LFCC) (Figure 1.1). The former does not incur damages from flooding within the study area but manages lands in the vicinity of the San Acacia Diversion Dam. The latter two facilities incur damages during flood events."</p>
#5 Sevilleta	1	4	<p>Both Rio Puerco and Rio Salado occur on Sevilleta NWR.</p> <p>Response: Concur. See response to #7 below.</p>
#6 Sevilleta	1	5	<p>The Study Area section states the area extends from the San Acacia Diversion Dam south through the Bosque del Apache NWR, but the section fails to mention the Study Area starts on the Sevilleta NWR. Figure 1-1 shows</p>

			<p>Sevilleta NWR.</p> <p>Response: Concur. Throughout the document, the SADD is used as the landmark delineating the study boundary, as it is provided in the congressional authorization. The language added per comments 4 and 7 address discussion of the location of the Sevilleta NWR relative to the SADD and the study area.</p>
#7 Sevilleta	1	10	<p>The section repeats the same language as used in the Executive Summary and needs to mention Sevilleta NWR. Suggested text: “Sevilleta NWR is one of the largest refuges in the National Wildlife Refuge System, encompassing 228,700 acres. It runs the full width of the Rio Grande Valley extending from the Sierra Ladrones on the west to Los Pinos Mountains on the east. It is approximately 30 miles in width and 18 miles in length, covering a total of 400 square miles. Elevations on the refuge range from 4,430 feet at the Rio Grande to 8,953 feet at Ladrón Peak. Four dominant vegetation communities intersect on the refuge: Colorado Plateau Shrub Steppe, Chihuahuan Desert, Great Plains Short Grassland Prairie, and Piñon Juniper Woodland. In addition, the Rio Grande flows through the center of Sevilleta NWR, providing a riparian oasis that plays a vital role in the mixed ecosystems. These plant communities support approximately 89 mammal species, 250 bird species, 58 reptile species, and 15 amphibian species.”</p> <p>Response: Concur: Text was added to Section 1.4 to read: “The Sevilleta National Wildlife Refuge (SNWR) is one of the largest refuges in the National Wildlife Refuge System, encompassing 228,700 acres. It runs the full width of the Rio Grande Valley extending from the Sierra Ladrones on the west to Los Pinos Mountains on the east. It is approximately 30 miles in width and 18 miles in length, covering a total of 400 square miles. Elevations on the refuge range from 4,430 feet at the Rio Grande to 8,953 feet at Ladrón Peak. The bulk of the SNWR occurs upstream of the study area. The confluence of both the Rio Salado and Rio Puerco occur on the refuge. The refuge and study area overlap on both sides of the Rio Grande in the vicinity of the San Acacia Diversion Dam. No damages are incurred from flooding to the Sevilleta Refuge within the study area.”</p>
#8 Migratory Birds	5	1	<p>The clearing of vegetation 15 feet out from the base of the toe to create a vegetation-free zone will require extensive tree and shrub removal. Many migratory birds nest in this vegetation, particularly near the edges where a shrub layer may be dense. There is no mention of how the Corps will avoid take of migratory birds and comply with the Migratory Bird Treaty Act for this action.</p>

			<p>Response: Section 6.4.2.3 states: "Vegetation removal and clearing-and-grubbing activities for the Vegetation-free Zone—and for all proposed construction—would only occur between August 15 and April 15 to avoid disturbance of nesting migratory birds. Vegetation removal outside of that period would only be performed after a survey by a biologist confirms that disturbance to nesting migratory bird species would be avoided."</p>
#9 Sevilleta	5	2	<p>The Levee Design section does not state the excavation will occur on Sevilleta NWR.</p> <p>Response: Concur. Text is added to Section 5.1.14 to read: "Access and excavation occurs on Sevilleta National Wildlife Refuge lands on the East bank of the Rio Grande in this area. Preliminary plans have been coordinated with the refuge to include access and construction activity as well as restoration of the floodplain following excavation. Final plans for construction activity and subsequent mitigation of riparian habitat will be coordinated with the refuge."</p>
#10 Sevilleta	5	4	<p>The legend for Figure 5-4 identifies the red line on the figure as the "highway," but this is the boundary for the Sevilleta NWR.</p> <p>Response: The map legend may have been misinterpreted. The boundary line for either refuge in the set of map figures 5.4 through 5.9 is not identified in the legend. The red/orange solid line in the legend signifies a highway category that appears in figure 5.6 as Highway 380.</p>
#11 BdA	5	14	<p>Explain current and potential use of this land with or without additional spoil. It is a part of the floodplain and as such has been discussed as a potential riparian restoration site (spoil location in Tiffany Basin).</p> <p>Response: The text was augmented to clarify current and future uses and conceptual restoration plans for the Tiffany Basin.</p>
#12 BdA	5	15	<p>The Vegetation Management section does not mention any supplemental water to assure native grass germinates and successful establishment occurs.</p> <p>Response: Concur. The text was revised to clarify that supplemental watering is proposed to assure successful establishment of grasses.</p>
#13 BdA Sevilleta	5	18	<p>Section 5.1.16.4 fails to mention Sevilleta NWR. Additionally, a compatibility determination is required for both Bosque del Apache and Sevilleta NWRs.</p> <p>Response: Concur. The text (now in Sec. 5.1.17.4) was</p>

			revised accordingly.
#14 BdA	5	18	<p>A maintenance schedule is needed for vegetation management for the operation and maintenance of the vegetation free zone at the riverside toe of the constructed levee.</p> <p>Response: Maintenance will be required to prevent the establishment and growth of woody vegetation and invasive species within the Vegetation Free Zone. The Corps will coordinate with the Refuges regarding time-specific recommendations for such maintenance and included such information in an O&M manual provided to the sponsors.</p>
#15 BdA	5	18	<p>Gate placement at Brown Arroyo is likely to impact wetlands occurring at the mouth of the arroyo. This chapter does not mention these conditions and there is no discussion of mitigation for the impacts.</p> <p>Response: The area was determined to be waters of the U.S., and the potential effects are discussed in the final GRR/SEIS-II and Appendix B, Section 404(b)(1) Guidelines Evaluation. However, the Corps will continue to coordinate with Dol to ensure impacts to habitats of significance are minimized.</p>
#16 BdA	5	19	<p>Along with spoil deposited in the Tiffany Basin, an eastside levee (Alternative K) would also limit riparian habitat restoration, sediment management, and river re-connectivity to the Tiffany Basin in the future. This is not acknowledged in Alternative K.</p> <p>Response: The text in Section 5.3 was augmented to describe these potential effects.</p>
#17 BdA	5	20	<p>The name of park adjacent to the Levee setback at RM 108 is “Socorro Nature Area.”</p> <p>Response: Concur. The correction was made.</p>

<p>#18 BdA</p>	<p>6</p>	<p>1</p>	<p>Features common to all alternatives: 1) Floodwall upstream - no discussion of this design was found. Describe if the floodwall will isolate floodplain riparian vegetation or change flooding potential in riparian habitat upstream of San Acacia Diversion Dam;</p> <p>Response: This feature is described in Sections 5.1.2; however, the description was augmented with additional detail. Specifically, the floodwall would be located in a disturbed upland on the terrace approximately 15 vertical feet above the riparian zone. The floodwall would not affect riparian vegetation nor reduce inundation of the riparian zone in upstream or downstream from the San Acacia Diversion Dam.</p> <p>2) 1.08 miles of soil cement - no mention of possible impacts to vegetation on this bankline (not removal but isolation from groundwater) and no mention of access to fishing, which is common in this location;</p> <p>Response: Groundwater discharge to the river channel would not be altered by the soil-cement embankment. Access to the channel by fisherman would be not be inhibited; they could traverse the stair-stepped embankment at any location along its entire length.</p> <p>3) Excavation of 12.4 acres on east bank terrace - if most of the area is only available to the river at approximately 15,000 cfs, riparian vegetation establishment and sustainability is limited over most of the site;</p> <p>Response: Concur. Mitigative riparian plantings are planned only along the immediate channel bank of this area. The remainder of the site would be stabilized by seeding with upland grass and shrub species.</p> <p>4) Slide-gate closure at Brown Arroyo – no evaluation of impact to wetlands at mouth of arroyo;</p> <p>The area was determined to be waters of the U.S., and the potential effects are discussed in the final GRR/SEIS-II and Appendix B, Section 404(b)(1) Guidelines Evaluation. However, the Corps will continue to coordinate with Dol to ensure impacts to habitats of significance are minimized.</p> <p>5) 5.68 miles of riprap protection - no discussion of avoiding changes in topography on riverside toe of levee that would limit Rio Grande silvery minnow entrainment during recession of high flows; ...</p> <p>Response [as for Comment #24]: Corps biologists have proposed refinements to the design of the vegetation-free zone to reduce flow along the levee to reduce erosion while</p>
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			<p>providing slackwater habitat for the silvery minnow. These slackwater areas would be sloped to drain away from the levee to facilitate silvery minnow (all age classes) movement back toward the main river channel. The principle alteration to floodplain flow patterns would be reducing the tendency for erosion adjacent to the levee that creates channels and pools that may be isolated as the river recedes. Corps staff will coordinate with Refuge staff to refine these measures to address potential impacts to silvery minnows.</p> <p>... and 6) 300-acre spoil deposition area - no protection from building in floodplain following spoil placement or isolation of these lands from future potential riparian plant establishment.</p> <p>Response: The entire Tiffany Basin is, and would continue to be, within the 10%-chance floodplain. The proposed project would not increase the likelihood of residential development of the area. The text was augmented to clarify current and future uses and conceptual restoration plans for the Tiffany Basin.</p> <p>We recommend the Corps conduct a more in-depth analysis on features common to all alternatives in this chapter.</p> <p>[See responses to individual points above.]</p>
#19 BdA	6	4	<p>The table printed at large scale is unreadable.</p> <p>Response: Table 6.1 from Page 6-4 prints legibly at the intended 8.5 X 11 inch format from the webpage document version as well as the PDF forwarded on compact disc. Recommend viewing in either of these formats.</p>
#20 BdA	6	5 - 6	<p>The section describes flood potential into Brown Arroyo but does not describe current conditions. Wetland impacts need to be addressed.</p> <p>The area was determined to be waters of the U.S., and the potential effects are discussed in the final GRR/SEIS-II and Appendix B, Section 404(b)(1) Guidelines Evaluation. However, the Corps will continue to coordinate with Dol to ensure impacts to habitats of significance are minimized.</p>
#21 BdA	6	6 - 7	<p>Floodplains – looking at the maps (pages 5-6 to 5-13).</p> <p>Response: The Corps will clarify this comment with BDANWR</p>
#22 BdA	6	9	<p>Address the adverse impacts to the Brown Arroyo wetlands under the levee alternatives design.</p>

			The area was determined to be waters of the U.S., and the potential effects are discussed in the final GRR/SEIS-II and Appendix B, Section 404(b)(1) Guidelines Evaluation. The footprint of the gate closure structure would be similar for all levee alternatives. The Corps will continue to coordinate with Dol to ensure impacts to habitats of significance are minimized.
#23 BdA Sevilleta	6	10	Noise during sensitive times for wintering water birds on the refuge and throughout the reach should be avoided. Identification of these areas would be required to adjust implementation schedule. Request consideration during scheduling for high volume public use times (e.g., hauling) at the refuges. Response: The Corps will clarify and address Refuge concerns in the Determination of Compatibility.
#24 BdA	6	13	The additional footprint in the current floodway within the refuge (8.1 acres) due to changes in topography that would alter flow patterns on the floodplain, potentially stranding Rio Grande silvery minnows, needs be avoided or mitigated. Refuge Staff is willing to work with the Corps to determine appropriate measures to limit or address these potential impacts. Response: Corps biologists have proposed refinements to the design of the vegetation-free zone to reduce flow along the levee to reduce erosion while providing slackwater habitat for the silvery minnow. These slackwater areas would be sloped to drain away from the levee to facilitate silvery minnow (all age classes) movement back toward the main river channel. The principle alteration to floodplain flow patterns would be reducing the tendency for erosion adjacent to the levee that creates channels and pools that may be isolated as the river recedes. Corps staff will coordinate with Refuge staff to refine these measures to address potential impacts to silvery minnows.
#25 BdA	6	15	As noted above, the 300-acre spoil deposition area within the Tiffany basin is considered a potential site for restoration. Changing the connectivity to groundwater up to 6.5 feet would change the potential for site restoration. Describe any mitigation associated with the loss of possible riparian vegetation. Response: The entire Tiffany Basin is, and would continue to be, within the 10%-chance floodplain, inundated only due to a breach in the Tiffany East spoil bank. Vegetation throughout the affected consists of monotypic saltcedar which is capable of growing in riparian or upland areas. Groundwater elevations in the basin are only nominally affected by river. The affected area is not a functional

			riparian zone. The text was augmented to clarify current and future uses and conceptual restoration plans for the Tiffany Basin.
#26 Sevilleta	6	18	<p>Measure A – Discuss “native” grass seeding along the riverside corridor.</p> <p>Response: The text was revised to indicate "native" grass would be planted. The Corps will coordinate with the Refuges regarding the preferred species mix.</p>
#27 Sevilleta	6	18	<p>Measure B - Please discuss Sevilleta NWR in this section.</p> <p>Response: SNWR was referenced in regard to these plantings, now discussed in Section 6.4.2.5, Project features with incidental benefits to fish and wildlife resources.</p>
#28 Sevilleta	6	18	<p>Measure C - Please discuss Sevilleta NWR in this section.</p> <p>Response: In the final GRR/SEIS-II this is now termed "Measure B." The text was augmented to clarify that these plantings would occur within Sevilleta NWR.</p>
#29 BdA	6	18	<p>Measure C: Partially replace? Riparian vegetation used by fish and wildlife? What vegetation is this replacing? Describe the quantity of the vegetation lost. State density of willow plantings and site conditions (i.e., depth to groundwater, soil characteristics) that would support these plantings.</p> <p>Response: The statement intended to convey that this measure would only partially replace the value of shrub habitat affected by the <u>entire project</u>. The confusing reference to "partially" was deleted.</p>
#30 BdA	6	19	<p>Measure G and all measures including vegetation free zone maintenance should include an invasive weed management plan with commitments by responsible parties. The current levee has invasive weed species that can spread by construction and maintenance actions. We recommend the Corp set aside resources to assist responsible parties in addressing these disturbance issues.</p> <p>Response: Section 6.4.3 (Invasive Plant Species and Noxious Weeds) and the mitigation plan in the final GRR/SEIS-II includes additional specifics regarding the sponsor's requirements for management.</p> <p>The Corps will be responsible for these management activities until the project (or its separable parts) are turned over to the local sponsor. As required by regulation, the local sponsors will agree to fulfill the fiscal obligations of the</p>

			OMRR&R plan.
#31 BdA	6	20	<p>It has been our experience that without supplemental watering after seeding, Measures A, B, D, and G would all have limited success. The budget for these seeding projects would need to reflect a supplemental watering component.</p> <p>Response: The text was clarified to state that supplemental watering was included in the project cost for all seeding plans.</p>
#32 BdA	6	21	<p>As stated, different habitat structure and plant species composition support different bird species. Mitigation for each type is necessary to address unavoidable effects. A clear plan on affected acres, prescribed mitigation, and bird species affected should be created utilizing Table 6-4 as a basis for plant replacement. This plan should be shared with the public to inform them of goals of mitigation and to assure that bird species abundance post project is representative of species affected.</p> <p>Response: Table 6.4 includes vegetation types that would not be replaced, namely non-native and mixed shrub communities. The final mitigation plan considers the bird abundance in major native vegetative structural types based on strata (herbaceous, shrub, tree).</p>
#33 BdA	6	21	<p>Dense plantings of willows are not prescribed if spraying and mowing are invasive species treatments prescribed. It would be more successful if invasive species treatment could be extended over a period of time to allow for thorough control prior to native plant establishment.</p> <p>Response: Treatment of herbaceous invasive species and resprouting or germinating saltcedar would be phased with subsequent planting of woody species. Periodic treatment is expected to be necessary for at least 10 years following planting, and perhaps longer in certain locations.</p>
#34 BdA	6	21	<p>Clarify what operation, maintenance, repair, replacement, and rehabilitation requirements will be expected of local sponsor(s) and how appropriate actions would be assured. Describe the amount of time the local sponsor is responsible for the maintenance.</p> <p>Response: The Section 5.1.18. Operation and Maintenance Considerations provides a general discussion of OMRR&R activities. For clarification the following text was added to Section 5.1.17: "The sponsor's responsibility for project operation and maintenance begins when the project is turned over to the sponsor following construction, and continues indefinitely. During this phase, the community will</p>

			realize the full benefits of the project, and responsibility passes from the Corps of Engineers to the sponsor. The Corps involvement after construction normally will consist of periodic routine inspections to ensure that the project is being properly maintained and is functioning as intended.”
#35 BdA	6	21	<p>Water conditions through the refuge could be altered depending on the design and construction of the riprap and vegetation free zone topography. Address potential flow alterations during high percentage return flow regimes.</p> <p>Response: Corps’ biologists have proposed refinements to the design of the vegetation-free zone to reduce flow along the levee to reduce erosion while providing slackwater habitat for the silvery minnow. These slackwater areas would be sloped to drain away from the levee to facilitate silvery minnow (all age classes) movement back toward the main river channel. The principle alteration to floodplain flow patterns would be reducing the tendency for erosion adjacent to the levee that creates channels and pools that may be isolated as the river recedes. Corps staff will coordinate with Refuge staff to refine these measures to address potential impacts to silvery minnows. The proposed topography of the vegetation free zone would function at all levels of inundation at the toe of the levee.</p>
#36 BdA	6	23	<p>Under the updated designation of critical habitat for the southwestern willow flycatcher, both Sevilleta and Bosque del Apache NWR are included in the designation.</p> <p>Response: The final GRR/SEIS-II analyzes the potential effects to flycatcher critical habitat re-designated on January 3, 2013.</p>
#37 BdA	6	25	<p>We believe 16.4 acres of woody mitigation would only grow into potentially suitable habitat for southwestern willow flycatcher if designed properly and placed in an appropriate site.</p> <p>Response: Concur. The Corps will coordinate extensively with BdA NWR on their assessment of the design and location for successful mitigation areas.</p>
#38 BdA	6; Appendix F-8	27; 3	<p>On page 6-27, there is no mention of Qualacu and San Pascual pueblo sites in terms of potential for increased flooding. This should be evaluated under the different alternatives.</p> <p>In Appendix F-8 (3), the table should reflect sites in the San Acacia to Bosque del Apache NWR unit. Both Qualacu and San Pascual pueblo sites should be addressed for potential impacts from current and future flood potential. Earlier discussions with the Corps and State Historic Preservation Officer (SHPO) about these sites included</p>

			<p>concern for increased inundation and prolonged flooding adjacent to these historic sites.</p> <p>Response: The Corps' discussions regarding the potential for flooding to archaeological sites applies to all archaeological sites within the project area including Qualacu and San Pascual. We have edited the text to specifically note the Qualacu and San Pascual pueblo sites in the 2012 GRR/SEIS-II cultural resources Sections 2.5, 3.4, 4.7.2, 6.6, and in the cultural Appendix F-8. The potential for increased flooding to all archaeological sites in the project area is addressed in cultural Sections 3.4, 4.7.2, 6.6 and in the cultural Appendix F-8. All of the 85 archaeological sites located within or immediately adjacent to the Area of Potential (flooding) Effect (APE), as shown in the 1% Exceedence Probability With- and Without Project scenarios (GRR/SEIS-II, Figures 5.3 - 5.9), may have been affected by flooding in the past, and with or without the proposed project remain vulnerable to flooding in the future. In Appendix F-8, Updated Tables 1 and 2, listing all archaeological sites within the APE, located on the east and west sides of the existing MRGCD spoil bank levee, have been updated (January 31, 2012 data); these Tables include the sites located within BDANWR. Earlier Section 106 consultation between the Corps and the SHPO regarding San Pascual is noted in Section 2.5 and copies of those consultation letters are provided in Appendix F-8. Although with or without the project there is no change to the potential for flooding, the Corps remains concerned that inundation by flood waters and the resulting saturation of archaeological sites including the San Pascual site has the potential to affect buried archaeological deposits. The Corps and USBR continue to manage river flows within their control to avoid effects to archaeological sites within or immediately adjacent to the floodplain (USACE, 2005, 1998).</p>
#39 BdA	6	30	<p>Prior to this consultation, Corps archaeologists and SHPO considered saturation of San Pascual Pueblo soils a potential impact to unexcavated historical features. Describe this concern and determine what has changed when the flood potential adjacent to this site would remain the same or increase.</p> <p>Response: Earlier Section 106 consultation between the Corps and the SHPO regarding San Pascual is noted in Section 2.5 and copies of those consultation letters are provided in Appendix F-8. The Corps has concerns that inundation by flood waters and the resulting saturation of archaeological sites including the San Pascual site has the potential to affect buried archaeological deposits. The Corps and USBR continue to manage river flows within their control to avoid effects to archaeological sites within or immediately adjacent to the floodplain (USACE, 2005, 1998). All 85 archaeological sites within or adjacent to the</p>

			APE may have been affected by flooding in the past, and with or without the proposed project remain vulnerable to flooding in the future, e.g., there is no change to the potential for flooding.
#40 BdA	6	31	<p>Flood potential on residential lands on the east side of the floodway is not addressed in the flood hazard table. There are limited structures, but in Corps' mapping products there is increased inundation in a number of residential areas around Bosquecito. Why are these lands not considered for annual damages?</p> <p>Response Tables 2.6, 3.2 and 4.8 of the report show a damageable property category "East Bank" which collects structures and contents occurring on the east bank into one line item for reporting damages and benefits within the table. Further information about the project effects on the east bank of the study area can be found in Section 2.8.1.2 and effects in 6.8.3 as well as Para. F-10 of Appendix F-10 Economics.</p>
#41 BdA	6	32	<p>If cutting Tiffany Basin under Alternative K +4 ft would require substantial mitigation because of sporadic river flows (or restoration potential), why does filling 300 acres of this basin not require substantial mitigation?</p> <p>Response: Currently, the 2,000-acre Tiffany Basin would be inundated only by flood events that overtop or breach the Tiffany East spoil bank. At that time, the area provides valuable flood transit storage and decreases the downstream peak. Except for small portions at the southern end, the dominant vegetation is consists of monotypic saltcedar, and the site has a low potential for supporting native riparian vegetation. As has been discussed among resource agencies over the past several years, the site does have the potential for improvement, and the subsequent development of valuable aquatic or riparian restoration projects. Summarizing, the area currently has relatively low value for fish and wildlife habitat, but provides important transit storage during flood events.</p>
#42 BdA	6	33	<p>Flood Risk Management: Save Our Bosque Task Force Conservation Easement and Habitat Restoration Program is another flood risk management program that started in the San Acacia study area. We recommend the Corps mention this program as an informal attempt to address flood risk management in the reach.</p> <p>Response: Concur. Text was added to Table 1.5, Studies and Reports by Others. "Save Our Bosque Task Force (SOBTF) is a grassroots 501(c)(3) organization using Federal, State and local funding to accomplish conservation easements and habitat restoration within the study area. To</p>

			<p>date, the organization has performed restoration work on five large tracks of land and created or improved many recreation access sites along the reach of the river. Easements acquired through the organization would preclude future development of the floodplain.”</p>
#43 BdA	6	34	<p>We agree the refuge would receive substantial benefits if a large magnitude flood is contained by the proposed project.</p> <p>Response: Thank you for your comment.</p>
#44 BdA	F-4	General	<p>Comments above from the GRR/SEIS-II discuss mitigation plans. One option is to develop a supplemental more detailed plan with the parties mentioned (page 3) and others that outline the procedures to lead to successful mitigation. As acknowledged, the detail in this preliminary plan does not allow a thorough evaluation.</p> <p>Response: The Corps will continue to develop the final mitigation plan in coordination with sponsors and resource agencies.</p>
#45 BdA	F-4	2	<p>Planning Objective E - include minimizing the potential for increasing the establishment of invasive species from spoil movement.</p> <p>Response: Invasive species management will also be required along with grass and shrub seeding at the Tiffany soil deposition site.</p>
#46 BdA	F-4	3	<p>A 20-year plan is appropriate to allow adaptive mitigation due to additional information, changing environmental conditions, and the need to thoroughly control invasive plants. We are concerned about the commitment of responsible parties for the long-term mitigation implementation schedule.</p> <p>As required by regulation, the local sponsors will formally agree to fulfill the fiscal obligations and environmental commitments of the proposed project, including the mitigation plan and the OMRR&R plan.</p>
#47 BdA	F-4	4	<p>Best Management Practice #5 - Construction equipment should also be inspected for invasive plant material if equipment is traveling away from the immediate worksite.</p> <p>Response: The text has been updated to reflect that contract specifications would require heavy equipment to be inspected and cleaned through power-spraying if it has been used in off-site areas that could contribute to the transport of invasive weed seeds; and will require similar cleaning just prior to leaving the construction area.</p>

#48 BdA	F-4	5	<p>Best Management Practice #11 – Refuge staff will work with the Corps and contractor to limit the potential for isolated pooling.</p> <p>Response: Concur.</p>
#49 BdA	F-4	5	<p>Best Management Practice #13 - Vegetation removal as a part of mitigation may occur at a site away from the immediate levee project area. Identify any site specific conditions that may warrant other limitations to site access and work schedule.</p> <p>Response: Concur. The Corps will coordinate with BdA NWR to determine the most suitable locations within the refuge for mitigation plantings.</p>
#50 BdA	F-4	5	<p>Measure A - Upland grasses may be more appropriate in some vegetation-free zones where overbank flows are limited. As mentioned above, supplemental watering may be necessary.</p> <p>Response: The Corps will coordinate with BdA NWR to determine suitable seeding mixes for the various mitigation locations.</p>
#51 BdA	F-4	6	<p>Measure C - Provide preliminary willow plantings density in 1.08-acre area to allow evaluation (similar to that provided in Measure H). Some cottonwood and Goodding's willow (assuming coyote willow is described at present) could be established to provide more diverse stand structure and mitigate for cottonwoods lost due to apron installation on opposite bank.</p> <p>Response: In the revised mitigation plan, Measure T would replace native shrubs along the base of the soil-cement embankment that were disturbed during its installation.</p>
#52 BdA	F-4	7	<p>Measure E - Provide riparian shrub plantings density (similar to the detail provided in Measure H) to allow evaluation of habitat provided.</p> <p>Response: The updated mitigation plan includes the recommended stem densities for all woody planting measures. The Corps will continue to coordinate with the Refuges to develop suitable planting prescriptions.</p>
#53 BdA	F-4	7	<p>Measure G - Similar to Measure B, consider other upland or riparian edge plants where appropriate. Refuge staff and other professionals can provide a thorough list of appropriate species.</p> <p>Response: The Corps will continue to coordinate with the</p>

			Refuges to develop suitable planting prescriptions and seed mixes that will be included in the mitigation plantings.
#54 BdA	F-4	7	<p>Measure H - Most mitigation areas will provide for upland grass habitat. Riparian mitigation could occur within the project area or outside with partner organizations. Consider augmenting this riparian habitat mitigation to assure successful southwestern willow flycatcher habitat replacement. Canopy cover of 30 percent is appropriate, but also describe the density of the shrubs established (i.e., x stems/acre).</p> <p>Response: The revised mitigation plan was developed with the target of providing 50.4 acres of flycatcher habitat.</p>
#55 BdA	F-4	9	<p>Table 2 will need to include supplemental watering costs. This added step in mitigation implementation will assure successful establishment. Bird abundance is not assured in poorly established areas.</p> <p>Response: The cost of supplemental watering has been included in mitigation cost estimates.</p>
#56 BdA	F-4	11	<p>Is the 2-acre “estate” obtained for additional plantings the total mitigation acreage for riparian plantings outside the project area? This 2-acre parcel is not described to allow evaluation. If so (2 acres of additional riparian shrub establishment), the refuge believes the acreage should be increased to benefit neotropical migrants, a minimum of 5 acres of dense plantings.</p> <p>Response: The 2-acre parcel is a narrow strip along the southern toe of the new levee at the Tiffany basin.</p>
#57 BdA	F-4	13	<p>A longer period of monitoring will be necessary for seeding success. We recommend 3 to 5 years with augmented seeding/watering as well as the mentioned invasive weed control included.</p> <p>Response: The revised mitigation plan describes vegetation and avian monitoring for 15 years following planting.</p>
#58 BdA	F-4	13	<p>For woody plantings, the survival percent and monitoring period is appropriate if initial plant density is sufficient, and that plant density is not stated.</p> <p>Response: Recommended stem densities and monitoring plans are included in the revised mitigation plan. The Corps will continue to coordinate with BdA NWR to develop suitable planting prescriptions.</p>

#59 BdA	F-4	13	<p>Refuge staff is available to assist in planning efforts for mitigation projects. When mitigation occurs on the refuge, the refuge is available to develop project specific plans and to assist in implementation. Exact participation will be determined during a more complete evaluation of site selection and restoration practices.</p> <p>Response: Thank you. The Corps will continue to coordinate with the Refuges to develop successful mitigation planting prescriptions..</p>



June 11, 2012

Mr. William DeRagon
Mr. Mark Doles
U.S. Army Corps of Engineers
4101 Jefferson Plaza, NE
Albuquerque, NM 87109

(via email)

Ref: Draft General Reevaluation Report / SEIS II: Rio Grande Floodway, San Acacia to Bosque del Apache Unit

Dear Sirs:

On behalf of the Water-Culture Institute, I am pleased to submit comments on the above-mentioned report ("San Acacia Project"). These comments are supplemental to those submitted separately by WildEarth Guardians, which I have also co-signed. Thank you for providing this opportunity to comment.

The Water-Culture Institute is committed to the sustainable management of water ecosystems, a goal which I'm sure we share with the USACE. Where our perspectives may differ is not so much on the "what" but on the "how." My comments will focus on a few specific suggestions of how we feel that the San Acacia Project might more effectively contribute to the sustainable management of the Middle Rio Grande:

1. Ecological Restoration of the Rio Grande should be an over-arching goal of this project, and it should be framed as one piece of a larger, integrated flood management strategy for this stretch of the river that will contribute to the overall goal of river restoration.

While I am aware of the legal and institutional constraints of Congressional authorizations, there is overwhelming consensus within the professional community that (a) flood management of one particular reach is best approached through an integrated strategy, preferably at the basin level, and through a mix of structural and non-structural approaches, and (b) that restoring ecological health to severely altered rivers needs to be incorporated into any new intervention. "Integrated Flood Management calls for a paradigm shift from the traditional fragmented approach, and encourages the efficient use of the resources of the river basin as a whole, employing strategies to maintain or augment the productivity of floodplains, while at the same time providing protective measures against the losses due to flooding." This quotation comes from the 2009 Concept Paper on Integrated Flood Management¹ published by

¹ http://www.apfm.info/pdf/concept_paper_e.pdf

the World Meteorological Organization, in cooperation with the Global Water Partnership (GWP) which has a MOU with the Water Resources Institute (WRI) to collaborate on flood risk management, among other topics. The new paradigm of integrated flood management has been incorporated into the current European Flood Directive² which has a strong environmental focus as well: " Flood risk management can go hand in hand with nature protection and restoration, and deliver benefits for both people and nature."³

Although the San Acacia Project traces its authorization to 1948 legislation which was not so environmentally enlightened, there is no prohibition to pursue an environmental agenda if it also meets economic criteria and flood management effectiveness. It would be surprising if a creative design solution incorporating eco-friendly non-structural and innovative structural elements could not be identified that is also competitive on a cost basis with conventional (non-eco-friendly?) approaches. [The well established field of ecosystem services valuation is predicated on the fact that healthy ecosystems (e.g., floodplains with a connection to the river) provide economically beneficial services that can be quantified.] It is our sense that the design process resulting in the preferred solution for the San Acacia Project did not pursue a good faith effort to look for environmentally beneficial solutions which could also compete on conventional criteria. In this sense we feel that the recommended plan fails to do justice to the Corps' own principles of IWRM, and needs to be re-assessed.

Response: A concerted effort was also made to avoid work that would preclude future restoration of the river and riparian habitats in the study reach. The footprint of the proposed levee was minimized and the alignment set landward to the extreme to minimize net loss of floodway and riparian habitats. Removal and spoil of excess soil from the existing spoil bank as opposed to spoil in the floodway represents a significant portion of the project cost. The spoil of existing material facilitates gains in floodway in the northern two-thirds of the project and minimized encroachment of the floodway and riparian habitats in the southern third of the project.

Some flood risk measures evaluated for the San Acacia to Bosque del Apache project also provide for increases in habitat and river function. The end state of Tiffany Basin Sediment Management measure, both passive and active transport methods (Sections 4.5.9 and 4.5.10) would provide approximately 2,000 acres of restored floodplain function as well as alleviate the perched channel condition in that reach. Setbacks of the levee and low flow channel were also considered.

Levee setbacks were evaluated for three locations. Levee realignments at the northern boundary of the Bosque del Apache NWR (BDANWR), and at the Socorro Recreation area (River Mile 108), as well as the levee extension referred to as Tiffany West Levee, would provide similar opportunity and function as a setback or realignment of the levee landward. The setback at River Mile 108 was carried through to the final array of alternatives in Chapter 6. The discussion of these setbacks is presented in Sections 4.5.8 for Tiffany West Levee and 4.8 for setbacks. Subsequent correspondence from the Bureau of Reclamation stated that a setback at the River Mile 108 location is not compatible with the goals of the recreation area. The Tiffany West Levee was removed from further consideration due its higher cost and similar benefits when compared to a levee on the east side of Tiffany Basin (Tiffany East Levee). The Tiffany East Levee measure as it is part of Alternative K was also removed from consideration due to a lower net benefits compared to alternative A. The setback at the north boundary of the BDANWR was removed from consideration due to incompatibility with refuge goals.

² http://ec.europa.eu/environment/water/flood_risk/index.htm

³ http://ec.europa.eu/environment/water/flood_risk/better_options.htm

2. The discussion of project alternatives (Chapter 4) should consider a "best mix" strategy rather than comparing purely structural with purely non-structural measures.

One of the fundamental principles of IWRM in general and integrated flood management in particular is the importance of applying a mix of strategic measures. The presentation of alternatives, however, appears to be weighted against any solution other than purely structural, by not considering the net result of various mixed approaches. Watershed treatments in the tributaries will not solve the problem of flooding within the project area, but that does not imply that no watershed treatments are justified. Similarly, the discussion of non-structural alternatives did not evaluate a mix of some structural and some non-structural elements. The alternatives need to be re-analyzed (or at least presented in a much more thorough way) to address the comparison of various mixed strategies.

Response: Non-structural measures do not provide a complete solution. Although flood proofing and floodplain evacuation are not economically feasible on a structure-by-structure basis, a flood warning system provides some economic benefit, but more importantly lowers life safety risk. Since there is a residual risk for flooding in the study area even with the proposed levee alternative, a flood warning system could act to mitigate residual flood damages as well lessening the life-safety risk. The Corps is pursuing the addition of a flood warning system to facilitate timely evacuation of people, pets and livestock from the floodplain in the event of exceedance or failure of the proposed levee.

3. The economic assumptions about the value of protecting the Low Flow Conveyance Channel (LFCC) and the Bosque del Apache Wildlife Refuge, assume unrealistic values for the estimated damages from flooding.

Given that the USBR nearly scrapped the LFCC a few years ago, and its debatable value in serving as a passive drain, the \$20m in damages from a 100 year flood seem unrealistic (page 2-31). Similarly the Bosque del Apache, which is, after all, a wildlife refuge, would presumably receive benefits from flooding, along with the \$98m in estimated damages to the fields and built infrastructure. These two cases seem to ignore the long-term future needs of flood planning. Shouldn't the Bosque transition to a more "wild" wildlife refuge? Doesn't the LFCC have to be removed eventually? Is an ever-aggrading river channel sustainable? There are hard choices to be made in planning a sustainable flood management strategy. This project as designed serves to kick the can down the road, when there is a real opportunity to begin a new chapter of river restoration and sustainable river and flood management.

Response: Benefit calculations for the BDANWR fall into 3 general categories; structures and contents (the refuge buildings and equipment), agriculture (economic losses from flooding of crops), and the interruption of recreation opportunity provided by the refuge. Structure and contents and crop losses are calculated using standard methods and values applied both on and off the refuge.

Based on the current management plan for the BDANWR and the Bureau of Reclamation's 2002 EIS for operation of LFCC, both of these facilities will continue to be operated in the foreseeable future. Further, the future condition of the San Acacia to Bosque del Apache Unit — regardless of implementation of any alternative considered in this GRR/SEIS-II — would remain essentially unchanged with regard to land use. The existing spoil banks will continue to be maintained, and in the event of a flood, the existing facilities and land uses would return to the pre-flood condition. As stated in section 3.5.2, Flood Hazards: "It is expected that Reclamation would continue to maintain the existing spoil bank to its current standards." Similarly, Section 3.5.3, Land Ownership states: "Without the implementation a Federal project, it is anticipated there would be no changes in land ownership

within the study area in the future.” Throughout Section 3.5.4, Land Use classification, and 6.8, Socioeconomic Environment, no changes in land use would be expected with or without a Federal project.

Thank you again for the opportunity to comment on this project. I look forward to continued discussion.

Sincerely,

A handwritten signature in black ink, appearing to be 'DG', written in a cursive style.

David Groenfeldt, PhD
Director



June 11, 2012

William DeRagon
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Re: Comments of WildEarth Guardians On the Draft General Reevaluation Report/Draft Supplemental Environmental Impact Statement for the Proposed Rio Grande Floodway, San Acacia to Bosque del Apache, Socorro County, NM, Project

On behalf of WildEarth Guardians, Audubon New Mexico, Rio Grande Restoration, and the Water-Culture Institute, Kara Gillon, Esq. submits these comments the Draft General Reevaluation Report and Draft Supplemental Environmental Impact Statement (“DEIS”) for the Proposed Rio Grande Floodway, San Acacia to Bosque del Apache, Socorro County, NM, Project. The Corps of Engineers (“Corps”) is proposing to construct an engineered levee between the Low Flow Conveyance Channel (“LFCC”) and the western bank of the Rio Grande for a length of approximately 43 miles. As planned, construction would be complete in 2026, armoring the west bank of the Rio Grande for at least the next century. We appreciate the opportunity to comment.

WildEarth Guardians is a regional nonprofit environmental advocacy organization dedicated to protecting and restoring the American West. With members throughout the region, WildEarth Guardians works to safeguard the climate, the clean air, the clear water, and wildlife of the West.

Structural water resource projects designed to control floods have drastically altered and manipulated river systems across the country, causing significant ecological harm. The Corps’ own planning guidelines acknowledge that the environment will be harmed by “practically all flood control projects.”¹ This is just as true in the Middle Rio Grande. Since the 1930s, “surface area covered by wet meadows, marshes, and ponds declined by 73% along the Middle Rio Grande floodplain.” DEIS 2-14.

¹ U.S. Army Corps of Engineers, ER 1105-2-100, Planning Guidance Notebook (April 22, 2000) at E-89

The Corps' recommended plan and preferred alternative is the National Economic Development ("NED") Plan, which maximizes national economic development, often at the expense of the environment. Again, as has been true across the country, the Corps has demonstrated an institutional bias – due largely to the focus on economic development – for approving large and environmentally destructive projects while also lacking environmental protections.² Less environmentally damaging, less costly, nonstructural measures that would result in the same or better outcomes are routinely ignored or given short shrift.

WildEarth Guardians offers these comments to highlight environmental concerns with the Corps' planning process and the NED Plan and to inform improvements to both. Congressional policy for federal water resource planning and environmental policy is not reflected in the GRR/DEIS; the Corps should revise the document so that it is faithful to national policy that no longer prioritizes economic development over environmental protections and public safety.

Overarching Federal Policy for Water Resource Projects

- a. The Water Resources Development Act of 2007 promotes a new federal policy for water projects.

Congress established a new federal policy – and a new approach for planning – for federal water projects in the Water Resources Development Act ("WRDA") of 2007. 42 U.S.C. § 1962—3(a). This national policy requires that federal water projects reflect national priorities, protect the environment, and encourage economic development. All water projects, including flood risk management projects like the levee construction proposed here, are to do this by (1) seeking to maximize sustainable economic development; (2) seeking to avoid the unwise use of floodplains and flood-prone areas and minimizing adverse impacts and vulnerabilities where such areas must be used; (3) protecting and restoring the functions of natural systems; and (4) mitigating any unavoidable damage to natural systems. This new national policy makes protecting healthy rivers, floodplains, wetlands and coastal environments that protect and sustain communities the primary objective for water resources planning.

While the Corps, via the Council on Environmental Quality ("CEQ"), is revising the principles and guidelines used in the formulation, evaluation, and implementation of water projects, this national water resources planning policy continues to apply.

Response: WRDA 2007 §2031(7) specifies that certain projects are not subject to the revised water resources principles and guidelines established by that portion of the Act. Following the date of the issuance of the principles and guidelines that §2031 defines, the revisions apply only to new projects, specifically those projects where a feasibility study or a reevaluation has not yet commenced. Due to the fact that both the feasibility study and reevaluation for the San Acacia Project had commenced in advance of issuance of revised principles and guidelines, these specific requirements of WRDA 2007 do not apply. In spite of this, the spirit and intent of these requirements were followed for both avoidance of impact to, and protection of, existing natural resources. A concerted effort was also made to avoid work that would preclude future restoration of the river and riparian habitats in the study reach. The footprint of the proposed levee was minimized and the alignment set landward to the extreme to minimize net loss of floodway and riparian habitats. Removal and spoil of excess soil from the existing spoil bank, as opposed

² National Research Council, *New Directions in Water Resources Planning for the U.S. Army Corps of Engineers*, 1999, at 4, 21, 61-63; US Army Inspector General, *Report of Investigation, Case 00-019, 2000*, at 7-8.

to depositing it in the floodway, represents a significant portion of the project cost. The spoil of existing material facilitates gains in floodway area in the northern two-thirds of the project and minimized encroachment of the floodway, and therefore riparian habitat, in the southern third of the project.

The flood risk measures proposed for the San Acacia to Bosque del Apache Unit follow the intent of the Act in that some measures to reduce the risk of flood damage also provide for increases in habitat and river function. The end state of Tiffany Basin Sediment Management measure, both passive and active transport methods (Sections 4.5.9 and 4.5.10), would provide approximately 2,000 acres of restored floodplain function as well as alleviate the perched channel condition in that reach. Setbacks of the levee and Low-Flow Conveyance Channel (LFCC) were also considered (see response to Comment *b* under Overarching National Environmental Policy Act Issues below).

b. Key principles to guide Corps water project planning pursuant to the Water Resources Development Act of 2007.

We advocate for an approach to water resources planning for the proposed action based on at least key principles to maintain and restore the health of our nation's rivers, streams, and wetlands as discussed in comments submitted on the revision of the Principles and Guidelines. See Letter from Alliance for the Great Lakes, et al. to the Council on Environmental Quality (July 31, 2009), available at http://www.waterprotectionnetwork.org/sitepages/downloads/P&G_CEQ_Sign-on_Comments_July_2009.pdf. Feasibility analysis and reevaluation should afford environmental protection the highest priority consistent with sustainable economic development, pursue nonstructural approaches before structural flood control, and projects should use best science, peer review, and full transparency to deliver good results.

Response: Non structural measures do not provide an effective solution to reduce flood risk in the San Acacia to Bosque del Apache Unit. Section 4.5 details the analysis of various non-structural alternatives. Non-structural measures do not reduce flood risk to agricultural facilities and crops and unique to the San Acacia to Bosque del Apache area, and the LFCC does not lend itself to non-structural solutions. These agriculture, infrastructure and the LFCC provide almost 23% to 26% of the benefits in the project area depending on the flood event (Table 2.4).

The analysis performed demonstrates that flood-proofing and relocation measures are uneconomical on a structure-by-structure basis in the study area. For these reasons, flood-proofing and relocation measures are deemed not reasonable for further detailed analysis. Flood warning systems do not significantly reduce flood damages in the study area; however, they may decrease the life safety risk, with or without a Federal Project (Section 4.5.5.2 Flood Warning System). Since there is a residual risk for flooding in the study area even with the proposed levee alternative, a flood warning system could act to mitigate that risk as well as lower remaining life safety risks. The Corps is pursuing the addition of a flood warning system to facilitate timely evacuation of people, pets, and livestock from the floodplain in the event of exceedance or failure of the proposed levee. A discussion of a the flood warning system has been added to the GRR/SEIS-II in Section 5.1 to describe the purpose and objective of such a system. Detailed design and implementation procedures will be developed with the sponsor and local authorizes to incorporate a flood warning system into the local emergency response network.

The future condition of the San Acacia to Bosque del Apache Unit regardless of implementation of any alternative considered in this GRR/SEIS-II, would remain essentially unchanged with regard to land use. The existing spoil banks will continue to be maintained and in the event of a flood the existing facilities and land uses would return to the pre-flood condition. As stated in Section 3.5.2, Flood Hazards: "It is expected that Reclamation would continue to maintain the existing spoil bank to its current standards". Similarly, Section 3.5.3, Land Ownership, states: "Without the implementation a Federal project, it is

anticipated there would be no changes in land ownership within the study area in the future.” Additionally, Section 3.5.4, Land Use classification, and Section 6.8, Socioeconomic Environment, state that no changes in land use would be expected with or without a Federal project. The footprint of the proposed levee project was minimized to protect the existing aquatic and riparian resources. Two levee setbacks and the Tiffany Basin Sediment Management measure were evaluated to increase the area of floodplain within the floodway. One setback measure — River mile 108 — proved reasonable and was carried forward to the final array of alternatives. (See response to Comment *b* under [Overarching National Environmental Policy Act Issues](#) below).

c. The General Reevaluation Report should include additional feasibility analysis.

A General Reevaluation Report (“GRR”) is “a reanalysis of a previously completed study, using current criteria and policies, which is required due to changed conditions and/or assumptions.”³ Given the extensive nature of the study, it is essentially a new Feasibility Report, recommending a plan for implementation and accompanied by an EIS. We urge the Corps to develop a GRR in keeping with the requirements for a Feasibility Report, in particular that it include “a description of a nonstructural alternative to the recommended plan when such plan does not have significant nonstructural features,” 33 U.S.C. § 2282, and a specific plan to mitigate fish and wildlife losses resulting from the project, or a determination that the project will have negligible adverse impacts on fish and wildlife. *Id.* § 2283.

Additionally, the GRR should include more discussion of the operation, management, repair, restoration, and replacement (“OMRR&R”) requirements for the proposed project. The GRR/DEIS provides only very general description of the OMRR&R requirements, *see* DEIS 5-18, 6-18, assigning duties to the sponsor and committing the Corps to providing an OMRR&R manual to the sponsor. The GRR/DEIS should offer more detail as to the OMRR&R requirements, costs, and abilities to pay. In this situation, because there are two non-federal sponsors – the Middle Rio Grande Conservancy District and the New Mexico Interstate Stream Commission – we recommend discussion of whether and how the OMRR&R duties and costs will be allocated between the two sponsors.

Response: The evaluation of non-structural measures that included flood-proofing, zoning and relocation determined that these measures were unreasonable on the basis of being incomplete as well as uneconomical. Please see response to Comment *b* above.

The Final GRR/SEIS-II includes a mitigation plan (see Appendix F-4) that conforms to the requirements of WRDA 2007 §2036 (which modified 33 U.S.C. §2283).

d. The Corps can add project purposes to the existing authorization.

Under certain circumstances, the Corps can add one or more of the following new project purposes to a civil works projects without new Congressional authorization: endangered species conservation and fish and wildlife enhancement.⁴ We recommend that the Corps add endangered species conservation and fish and wildlife enhancement to the San Acacia to San Marcial project,

³ U.S. Army Corps of Engineers, ER 1105-2-100, Planning Guidance Notebook (April 22, 2000) at 4-2.

⁴ U.S. Army Corps of Engineers, ER 1105-2-100, Planning Guidance Notebook (April 22, 2000) at 4-10, Appendix G.

develop alternatives based on addition of these purposes, and then investigate, compare, and select alternatives.

Response: The Corps has the authority to perform ecosystem restoration throughout the Rio Grande in New Mexico provided there is interest from a cost-sharing, non-Federal Sponsor. The Rio Grande Floodway, San Acacia to Bosque del Apache Unit GRR is a cost-shared study authorized by the Flood Control Act of 1948. The Middle Rio Grande Conservancy District and, later, the New Mexico Interstate Stream Commission, approached the Corps with interest in participating in the Flood Risk Management study. While pursuing the addition of multiple purposes for the 1948 authorization would result in a multi-purpose study, the Corps currently possesses authority to perform ecosystem restoration projects through Section 206 of the Water Resources Development Act (WRDA) of 1996, and potentially Section 1135 of WRDA 1986. Under these authorities the Corps may plan, design and build projects to restore aquatic ecosystems for fish and wildlife. The authority does require a non-Federal sponsor to cost-share the study and take responsibility of a project after it is implemented. For example, the Middle Rio Grande Bosque Restoration Project, also sponsored by the MRGCD, is currently being implemented in the Albuquerque reach. This project area coincides and is compatible with the ongoing single-purpose flood risk management study for the Bernalillo to Belen reach of the Rio Grande.

e. The National Economic Development Plan no longer controls water resource planning.

As discussed above, the WRDA of 2007 set a new national policy for water resource planning that no longer prioritizes achievement of the greatest economic benefits, as captured in the NED Plan. Instead, federal water projects must maximize *sustainable* economic development *and* protect and restore the functions of natural ecosystems. National Economic Development is no longer the primary goal of water resource planning, *cf.* DEIS 4-4; sustainable economic development is a co-equal goal with environmental protection.

The recommended plan is the NED Plan, DEIS 7-1, but the GRR/DEIS does not provide the reasoning behind the selection. Is the recommended plan the NED Plan simply and only because it is the NED Plan, or for additional reasons? If the former, WildEarth Guardians posits that in light of new national policy that no longer prioritizes NED, that the Corps should offer a statement of reasons for its choice of the NED Plan as the recommended plan. Our new national policy goals per WRDA of 2007 may support the Corps' recommendation of a different alternative that does not prioritize economic development and consist solely of a structural flood control project.⁵ The Corps can select an alternative that is not the NED Plan provided that the feasibility report fully documents the reasons for selecting the different plan and the Assistant Secretary for Civil Works determines that there "are overriding reasons for selecting another plan based upon other Federal, State, local and international concerns."⁶

Response: The GRR/SEIS-II for the San Acacia to Bosque del Apache Unit project evaluated an array of alternatives including non-structural alternatives and alternative alignments to the recommended levee alternative. There were no overriding reasons or alternatives put forth by the sponsor or stakeholders, therefore additional analysis for a locally preferred plan was not necessary.

⁵ For example, the NED Plan is one of two that meets FEMA criteria for levee certification, DEIS 6-35, while the No Action would present economic development concerns because of a probable increase in flood insurance rates. DEIS 4-21. The DEIS, though, does not disclose current or future flood insurance rates and does not discuss the need for flood insurance with or without the project. As a result, flood insurance is a questionable basis for decisionmaking.

⁶ U.S. Army Corps of Engineers, ER 1105-2-100, Planning Guidance Notebook (April 22, 2000) at 2-7.

Corps of Engineers cost-benefit analysis. In determining the NED Plan and formulating its recommendation, the Corps performs a cost-benefit analysis for each alternative. WildEarth Guardians has several concerns with the Corps' cost-benefit analysis, foremost among them the lack of supporting analyses or citations for numerous claims of costs and/or benefits that are key to the overall analysis.

Examples of such claims include the value of the LFCC - \$125 million, DEIS 2-29; the estimated damage to the LFCC from a 1% chance event - \$20.7 million, DEIS 2-30. Claims regarding the LFCC are particularly puzzling because these numbers are based on current operation and the Bureau of Reclamation operates the LFCC only as a passive drain. *See, e.g.*, DEIS 2-34 (“Reclamation does not anticipate active diversions to the LFCC in the near future as extensive repairs or reconstruction would be needed to resume active diversion.”); 72 Fed. Reg. 51,837 (Sept. 11, 2007) (canceling plans to publish a Final EIS on LFCC operations because the Upper Rio Grande Water Operations Record of Decision “considers the impacts of continuing the operation of the Low Flow Conveyance Channel as a passive drain with no diversion from the Rio Grande.”). Similarly, the DEIS should disclose the analysis, referenced at DEIS 7-6, that “indicated that 40.7 percent of the benefits are attributed to Federal properties.” *Compare* DEIS 4-27 (benefits to federal properties are 30.9 percent of the total benefits of the project).

Response: The conflicting references in the end of Section 4.6.5.2, Benefits, and Section 7.1.11, are a typographical error. The correct figure for the percent of Federal vs. non-Federal benefits is 40.7%, as stated in Section 7.11. This has been corrected in the final document. A derivation of this percentage was added to the GRR/SEIS-II in conjunction with Table 7.2, and the text of Section 7.1.11.

Lastly, Section 2.7.3 covering Land Ownership is vague, noting a federal “interest in” and federal “control” over nearly all the land associated with the existing spoil bank. Section 5.1.12 is similarly vague and confusing, noting that ongoing litigation has brought into question ownership of MRGCD assets. While title may be in dispute, it is important for purposes of implementing the project, calculating the non-federal cost-share, and applying LERRD credit that the GRR/DEIS make clear which non-federal sponsor has acquired real estate interests, the interests acquired, and the real estate parcels at issue and that the GRR/DEIS be consistent in discussing MRGCD fee interest in the real estate.

Response: All lands where title is in dispute will be available for project purposes regardless of ownership. All lands not in dispute and needed for project implementation have been accounted for in cost-share calculations. If lands in dispute resulted in MRGCD ownership, then the sponsor would likely be required to provide a waiver for LERRDS costs in excess of the sponsor cost-share.

f. The Corps must make provisions for Peer review & Safety Assurance Reviews

WRDA of 2007 instituted independent peer review for certain Corps project studies, defined to include a reevaluation study or environmental impact study for a water resources project. 33 U.S.C. § 2343(a), (1). A project study must be reviewed if it costs more than \$45 million, unless determined to be exempt from review by the Chief of Engineers. *Id.* § 2343(a). This project costs over \$100 million. In addition, WRDA of 2007 requires a safety assurance review for certain hurricane and storm damage reduction projects, and for certain flood damage reduction projects to assure public health, safety, and welfare. *Id.* § 2344.

The GRR/DEIS does not reference the need for peer review and safety assurance review, make public any findings or reasons supporting the Corps not conducting the peer review, or make any provisions for conducting peer review. *Id.* § 2343(a). When the Corps conducts these reviews, the Corps must make the reports and any Corps responses available to the public. *Id.* §§ 2343(f), 2344.

Response: The following language was added to the GRR/SEIS-II in Section 5.1.16:

"A Safety Assurance Review (SAR) shall be conducted on design and construction activities for hurricane and storm risk management and flood risk management projects, as well as other projects where potential hazards pose a significant threat to human life. The review shall be conducted for the purpose of assuring that good science, sound engineering, and public health, safety, and welfare are the most important factors that determine a project's fate. Expert panels external to the Corps will review the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed."

"This GRR/SEIS II will undergo Independent External Peer Review (IEPR) which is synonymous with SAR. The IEPR is conducted in two phases referred to Type I and Type II IEPR per Corps guidance contained in Engineer Circular 1165-2-209. Type 1 is generally for decision documents and Type II is generally for implementation documents. A type I IEPR is being conducted for this GRR/SIES II concurrent with the public review and will include a review of public comments and Corps responses to public comments.

"A Type II IEPR shall be conducted on design and construction activities. External panels will review the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed. Appendix E provides guidance for reviews conducted on design and construction activities performed after the approval of a decision document. The review shall be on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring that good science, sound engineering, and public health, safety, and welfare are the most important factors that determine a project's fate.

"The panel's final report and the responses of the Corps shall accompany the publication of the Final GRR- SEIS II and will be published on the Albuquerque District webpage as well as the Corps Headquarters webpage at:
<<http://www.usace.army.mil/Missions/CivilWorks/ProjectPlanning/CompletedPeerReviewReports.aspx>>"

g. Additional information is needed to ensure the Mitigation Plan meets Water Resources Development Act requirements.

As noted above, the GRR recommendation should include a specific mitigation plan to mitigate fish and wildlife losses due to the proposed project. *Id.* § 2283(d)(1). In line with the new direction for water resources planning established in WRDA 2007, Congress also added detailed minimum requirements for mitigation plans from the Corps. *Id.* §2283(d)(3). There are still many mitigation and monitoring commitments left to be specified in the mitigation plan: the criteria for ecological success by which the mitigation will be evaluated and determined to be successful based on replacement of lost functions and values of the habitat, including hydrologic and vegetative characteristics; the physical action to be undertaken to achieve the mitigation objectives within the watershed in which such losses occur; the functions and values that will result from the mitigation plan; a contingency plan for taking corrective actions in cases in which

monitoring demonstrates that mitigation measures are not achieving ecological success; and a commitment to monitor until the mitigation is found to be successful. *Id.* §2283(d)(3), (5).

Response: The Final GRR/SEIS-II includes a revised mitigation plan (see Appendix F-4) that conforms to the requirements of WRDA 2007 §2036 (which modified 33 U.S.C. §2283).

Overarching National Environmental Policy Act Issues

Section 102(2)(C) of the National Environmental Policy Act (“NEPA”) establishes an “action-forcing” mechanism to ensure “that environmental concerns will be integrated into the very process of agency decisionmaking.” *Andrus v. Sierra Club*, 442 U.S. 347, 350 (1979). Pursuant to that statutory provision, “all agencies of the Federal Government shall ... include in every recommendation or report on ... major Federal actions significantly affecting the quality of the human environment, a detailed statement” known as an environmental impact statement (“EIS”) addressing “the environmental impact of the proposed action, any adverse environmental impacts which cannot be avoided ..., alternatives to the proposed action,” and other environmental issues. 42 U.S.C. § 4332. What NEPA requires is that federal agencies take a “hard look at [the] environmental consequences” of their proposed actions. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (internal quotation omitted).

- a. The NEPA analysis must remain faithful to the stated purpose and need.

The GRR/DEIS purpose and need is to evaluate alternative methods of flood risk management in the Middle Rio Grande. The statement of purpose and need frames the range and analysis of alternatives. Reasonable alternatives are those that are viable, feasible, meet the stated goals of the project, or are reasonably related to the purposes of the project. *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992); *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997); *Trout Unlimited v. Morton*, 509 F.2d 1276, 1286 (9th Cir. 1974).

While the document states objectives of reducing the risk of flood to human health and safety, to properties and infrastructure, and to the environment, DEIS 4-3—4-4, the NED goal and accompanying cost-benefit analysis are what have truly defined the purpose, need, and alternatives. As discussed above, new national water resource planning policy elevates environmental protection as a co-equal goal with sustainable economic development. The Corps should “always consider the views of Congress, expressed, to the extent that the agency can determine them, in the agency’s statutory authorization to act, as well as in other Congressional directives.” *Citizens Against Burlington v. Busey*, 938 F.2d 120, 196 (D.C. Cir. 1991). By diverging from the stated purpose and need and evaluating alternatives based on the NED, the Corps has improperly developed, eliminated, and analyzed alternatives.

Response: The need for the project is summarized in Sections 1.3, 1.4.1, and 2.7.2, which discuss the flood damage history in the study area. Section 2.2.3.2 and Appendix F2 / F-3 determined the continuing risk of flood damage based on discharge-frequency probability analysis.

Section 1.4 of the GRR/SEIS-II succinctly quotes the project purpose from the authorizing language in House Document 243: “Provide protection against inundation by flash floods.”

Section 4.2 of the Final GRR/SEIS-II states the planning objectives of the study, which further refine the project's purpose:

- Reduce the risk of flood hazard to health and human safety within the study area. Reduce the risk of loss of life and risk to health from flood related hazards.
- Reduce the risk of flood damage to existing properties and infrastructure within the floodplains of the study area by 90 percent.
- Reduce the risk of ecological damage from flooding within the floodplains of the study area.
- Increase the capacity of the floodway throughout the study area to carry floodwaters.
- Prevent damage of flood risk management infrastructure within the study area from erosion.

The Corps' analysis has not diverged from the stated purpose and need of the project. As stated in responses to other comments above. The Corps' formulation of alternatives and selection of the recommended plan conforms to currently applicable Planning and Guidance and implementation regulation (Engineer Regulation 1105-2-100, Planning Guidance Notebook).

b. The alternatives analysis should consider nonstructural alternatives in detail.

The Corps dismissed alternatives too quickly and without justification. WildEarth Guardians recommends the Corps afford meaningful treatment to alternatives that contemplate levee setbacks, flowage easements, and other non-structural, potentially environmentally friendly alternatives.

Response: Levee setbacks were evaluated for three locations. Two realignments were evaluated at the northern boundary of the Bosque del Apache NWR, and the Socorro Recreation area (referred to as the River mile 108 setback). The levee extension referred to as Tiffany West Levee would provide similar opportunity and function as a setback or realignment of the levee landward. The setback at River mile 108 was carried through to the final array of alternatives evaluated in Chapter 6. The discussion of these setbacks is presented in Sections 4.5.8 for Tiffany West Levee, and Section 4.8 for the setbacks. Clarification is provided in the GRR/SEIS II by including the phrase "This levee setback has a higher cost than Alternative A alone and does not produce additional Flood Risk Management benefits, therefore is not included in the recommended plan." In sections 5.1 and 5.5. Section 6.2 e. was also revised to provide a discussion that the elevation and infrequent overbanking in this reach would not provide for high quality riparian habitat if the setback were implemented. The Tiffany West Levee was removed from further consideration due to it's higher cost and similar benefits when compared to a levee on the east side of Tiffany Basin (Tiffany East Levee). The Tiffany East Levee segment is part of Alternatives K and K+4ft, and was also removed from consideration due to a lower net benefits compared to Alternative A. The setback at the north boundary of the BDANWR was removed from consideration due to incompatibility with refuge goals.

Various non-structural measures were also evaluated and found unreasonable due to reasons of ineffectiveness and efficiency as presented in Section 4.5. (See also the response to Comment *b* under [Overarching Federal Policy for Water Resource Projects](#) above.)

NEPA has integrated environmental protection into the mission of every federal agency, 42 U.S.C. § 4331; therefore the Corps must examine a broad range of alternatives. Development of alternatives is the heart of the EIS. See 40 C.F.R. § 1502.14. CEQ regulations call on the agency to "[r]igorously explore and objectively evaluate *all reasonable* alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated," "[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits," "[i]nclude reasonable alternatives not within the jurisdiction of the lead agency," "[i]nclude the alternative of no

action,” and “[i]nclude appropriate mitigation measures not already included in the proposed action or alternatives.” *Id.* (emphasis added). As the CEQ states, “the emphasis is on what is “reasonable” rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative.” 46 Fed. Reg. 18,026 (March 23, 1981).

Alternatives eliminated from consideration. Coupled with WRDA’s mandate to protect and restore the functions of natural systems as well as requirements to consider non-structural alternatives and specific mitigation plans, the Corps should devote meaningful consideration and discussion to non-structural and environmentally beneficial alternatives that were summarily dismissed from further consideration. *See Nat’l Parks & Conservation Ass’n v. BLM*, 606 F.3d

1058, 1072 (9th Cir. 2010) (rejecting approach where agency briefly considers but fails to consider *in detail* a range of alternatives). By eliminating non-structural alternatives, the Corps improperly limited the range of alternatives to an unreasonable range. In addition, the Corps fails to consider a combination of non-structural alternatives, rather than each in isolation. In addition, the GRR deems relocation and elevation of structures infeasible due to cost, DEIS 4-12, 4-13 but fails to provide information that would allow comparison of the overall cost of these alternatives with that of the preferred alternative.

Responses: The floodproofing and relocation measures were not reasonable to carry forward into further analysis since these measures are uneconomical as well as an ineffective solution. (Also see the response to Comment *b* under Overarching Federal Policy for Water Resource Projects above.). Since the measures were economically discounted based on a structure-by-structure basis — in other words, the benefit to cost of the measure would be less than 1 — it is not reasonable to develop a study-scale cost for comparison with the final array of alternatives.

Similarly, the DEIS briefly discussed two levee setbacks, carrying the northernmost smaller setback forward to environmental impact analysis. DEIS 4-41. The second setback is also described, DEIS 4-42, but there is no analysis or statement of reasons for why it was not also carried forward for environmental impact analysis. It is also not clear from the DEIS why an alternative was considered but not adopted. *Compare* 40 C.F.R. § 402.14 (requiring agency to briefly describe reasons for eliminating alternative). As described, the levee setback alternative would have restored some floodplain acreage and floodplain connectivity and avoided some of the negative effects of other options to reclaim floodplain. As a reasonable alternative, the DEIS should have provided some justification for eliminating this option from additional consideration.

Response: Concur The initial description of the setback as an alternative in section 4.8 Additional Considerations of Alternatives, is revised to read:

“A shorter levee setback through the northern half of the Socorro Nature Area would return to the existing spoil bank alignment north of the developed facilities so that they would remain landward of a proposed levee. The smaller levee setback alignment would be approximately 8000 feet long (1.4 mi) and be approximately 800 feet to the west at the widest cross section. Approximately 80 acres of floodplain would be restored to the floodway and active river channel. This smaller setback alternative implemented as part of Alternative A has similar but slightly higher costs than Alternative A alone. Similar to the longer setback at this location,

construction of the shorter levee setback would make use of spoil material from other proposed levee sections thereby reducing the amount of hauling and spoil of material. Given the short distance, however, the additional cost for excavating and constructing a new segment of LFCC exceeds the savings in hauling of spoil material and abandonment of a portion of the existing spoil bank. Additional uncaptured costs are anticipated in the form of reclamation of the abandoned sections of LFCC and mitigation of habitat removed for the footprint of the new levee and LFCC sections. This smaller setback alternative as part of Alternative A is not the NED plan due to the higher cost with equivalent benefits. This alternative is carried forward to environmental impact analysis to evaluate any environmental benefits from the alternative.”

c. The description of the affected environment is incomplete.

This section shall “describe the environment of the area(s) to be affected or created by the alternatives under consideration.” 40 C.F.R. § 1502.15. The DEIS’s description of the affected environment does not allow for an accurate assessment of the environmental impacts of the alternatives. “The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process.” Council on Environmental Quality, *Considering Cumulative Effects under the National Environmental Policy Act* 41 (May 11, 1999). *See also Half Moon Bay Fishermans’ Mktg. Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988) (“without establishing ... baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA”). The flawed description of baseline environmental conditions will lead to a flawed environmental impacts assessment.

Rio Grande silvery minnow. More recent Rio Grande silvery minnow population monitoring results post-October 2007, *see* DEIS 2-21, are now available and the Corps should update its discussion of special status species accordingly. The same comment applies to the current population status of the silvery minnow and population trends. *See, e.g.*, Rio Grande Silvery Minnow Population Estimate Program Results from October 2008 (April 10, 2009); Rio Grande Silvery Minnow Population Monitoring 1993-2011, both available at <http://middleriogrande.com>. In addition, the discussion would benefit from clearly delineating between population densities and population estimates.

Response: Section 2.4.4.1 has been updated to include information on the current status of the Rio Grande silvery minnow through 2011 that was utilized in the evaluation of potential effects. Additional status information is included in the Corps’ Biological Assessment for the project in Appendix C.

Climate change considerations. The DEIS provides a brief description of a climate change-affected environmental baseline. Uncertainties may preclude the necessary quantitative analysis of climate change in the baseline (and environmental impacts analysis), DEIS 3-1, but not a qualitative analysis. As CEQ notes, “[i]f cause-and-effect relationships cannot be quantified ... qualitative evaluation procedures can be used.” CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* at 24 (Jan. 1997). “Reasonable forecasting and speculation is...implicit in NEPA...” *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1246 n.9 (9th Cir. 1984) (citation omitted); *see also San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1032 (9th Cir. 2006) (“precise quantification of a risk is not necessary to trigger NEPA’s requirements”). Without such an analysis, the Corps’ DEIS has “shunted aside [substantial

questions] with mere conclusory statements,” and “provide[d] no foundation for the inference” that the failure to model impacts prevents it from taking a qualitative hard look at potential impacts. *Found. for N. Am. Wild Sheep v. U.S. Dept. of Agric.*, 681 F.2d 1172, 1179 (9th Cir. 1982).

The Corps should include observed and projected impacts of climate change in the region – considering whether climate change has affected, is affecting, or will foreseeably affect each resource and incorporating that information into the discussion of each resource. Federal and state agencies have published reports, studies and plans that identify the observed and projected impacts of climate change on specific geographic areas or environmental resources and that are readily available to the Corps. The DEIS must consider the following impacts of climate change on the affected environment.

- i. Water Resources: Changes in precipitation patterns; increased frequency, severity, duration and extent of extreme weather events such as floods and droughts; reduction in water availability; changes in water quality (temperature, dissolved oxygen); reductions in groundwater recharge

For example, numerous federal publications expand on the DEIS’s observation that climate change may modify water supply and use by actually explaining how the surface and groundwater resources in the planning area may be affected over the next decades by changes in precipitation patterns. For the western and southwestern U.S., the IPCC has projected likely reductions in snowpack, seasonal shifts in runoff patterns, declines in groundwater recharge, and an increased frequency of intense precipitation events, such as flash floods. *See also* U.S. Global Change Research Program (“USGCRP”), *Global Climate Change Impacts in the United States* 42 (Thomas R. Karl et al. eds., 2009) (“the arid Southwest is projected to experience longer and more severe droughts from the combination of increased evaporation and reductions in precipitation”); *id.* at 44 (16% increase in average number of days with very heavy precipitation); *id.* at 44 (extended dry periods have become more frequent in the Southwest and “[l]onger periods between rainfalls, combined with higher air temperatures, dry out soils and vegetation ...”); *id.* at 45 (projecting substantial declines in the interior West, especially the Southwest, in runoff); *id.* at 46 (projecting advances in spring runoff by up to 60 days; earlier spring runoff leads to reduced summer flows); *id.* at 47 (changes in water cycle will affect groundwater recharge).

These same publications discuss the potential changes in water quality as a result of climate change. The IPCC predicts that increased water temperatures will put additional stress on aquatic species. *See also* USGCRP, *supra* at 46 (higher water temperatures); *id.* at 46 (increases in storm intensity and reductions in summer streamflow contribute to higher concentrations of pollutants); *id.* at 46 (heavier storms increase runoff, sedimentation and flushing of pollutants into waters).

Additional federal sources explain how the transformations driven by climate change will redistribute stream flow in the Middle Rio Grande:

Warming without precipitation change over the Rio Grande basin likely would lead to increased watershed evapotranspiration, decreased spring snowpack and snowmelt, and

ultimately reduced water supplies to manage under current system and operating conditions. Current climate projections suggest that precipitation could slightly decrease over the basin during the 21st century, which would amplify water supply reductions under warming alone.

Reclamation, SECURE Water Act Section 9503(c) – Reclamation Climate Change and Water 121 (Report to Congress, 2011).

- ii. Ecosystems: shifts to higher elevation/latitudes, reduced vegetation food sources, altered migration routes, less available water sources, reduced streamflows that provide habitat for aquatic species, effects of moisture stress on species

The IPCC has stated broadly that, “Responses of terrestrial species to warming across the Northern Hemisphere are well documented by changes in the timing of growth stages (i.e., phenological changes), especially the earlier onset of spring events, migration, and lengthening of the growing season.” IPCC, 2007: Climate Change 2007: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.)]. Cambridge University Press, Cambridge, United Kingdom, 1000 pp.

Arid environments like those studied here are likely to become even hotter and drier; in fact, this is already observed. USGCRP, *supra* at 83. The ranges of many species in the United States have shifted northward and upward in elevation. *Id.* at 80. Communities of species will not shift as a whole, breaking up existing ecosystems, and some migratory corridors may be blocked. *Id.* at 81. “In New Mexico’s Rio Grande basin, reduced snowpack, earlier runoff, and higher evaporative demands due to climate change will affect vegetative cover and species’ habitat (Hurd and Coonrod 2007).” Reclamation, SECURE Water Act Section 9503(c) – Reclamation Climate Change and Water 123 (Report to Congress, 2011).

The U.S. Forest Service Rocky Mountain Research Station has assessed the vulnerability of a range of reptiles, amphibians, birds, and mammals in the Middle Rio Grande Bosque. Megan M. Friggens et al., Vulnerability of Individual species to climate change: Vertebrate species of the Middle Rio Grande Bosque, New Mexico (Produced for the USGS Fish and Wildlife Service Agreement No. 201819H705, 2010), available at <http://www.fs.fed.us/rm/grassland-shrubland-desert/docs/species-vulnerability/vulnerability-climate-change.pdf>. The vulnerability assessment found numerous vertebrate species of the Middle Rio Grande are especially vulnerable to climate change. For example, the southwestern willow flycatcher scored particularly high on the vulnerability scale because its riparian habitat was expected to decline with climate change. Moreover, the brown-headed cowbird, a potential threat to the southwestern willow flycatcher, is a resilient species that may benefit from climate change. *Id.* at 17.

The Corps cannot avoid climate change consideration in the DEIS by claiming it is not possible to identify or quantify changes to the environment as a result of climate change. Failure to disclose the range of impacts of climate change on the environment would produce a faulty environmental baseline and would skew any analysis of environmental impacts, precluding the

federal agency from taking the requisite “hard look” at the proposed project and its environmental impacts.

The Corps may disclose that there is “incomplete or unavailable information” regarding environmental effects. *See* 40 C.F.R. § 1502.22. If the incomplete information is essential to choosing among alternatives and getting the information is not exorbitantly expensive, the agency shall acquire and include the information. *Id.* § 1502.22(a). On the other hand, if it is exorbitantly expensive or not possible to acquire the information, the Corps should inform the reader that the information is incomplete or unavailable, why the information is relevant, what relevant information is available, and what impacts the available information predicts. *Id.* § 1502.22(b).

[T]he basic thrust of an agency’s responsibilities under NEPA is to predict the environmental effects of a proposed action before the action is taken and those effects are fully known. Reasonable forecasting and speculation is thus implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as a “crystal ball inquiry.”

Scientists’ Inst. for Pub. Info. v. Atomic Energy Comm’n, 481 F.2d 1079, 1092 (D.C. Cir. 1973). To the extent potential environmental effects are uncertain or unknown, the agency should factor that into their consideration of their significance. *See* 40 C.F.R. § 1508.27(b)(5).

Response: As stated in Section 3.1 with additional discussion: “Although observed trends and model projections provide guidance on future climate change, great uncertainty surrounds both magnitude and rate of change estimates. These uncertainties prevent the quantitative treatment of climate change projections in model efforts at this time.” Additional information is provided here in response to this comment that further supports the overall conclusion.

Although a large number of modeling studies and observed trends address climate change in the Southwest (see refs. in (USGCRP, 2009, 2013), few of these studies provide actionable data to address projected changes in the Rio Grande Basin as required by existing Federal guidelines (CEQ, 2011). Given the large spatial disparities in current climate, and large uncertainties in climate model results, transferring projections to adjacent regions, or assuming results averaged over large geographic space apply to a specific study area are not best practices.

Within the existing floodway of the Rio Grande from SADD to Elephant Butte Reservoir, changing river hydrology is likely to be the most important effect of climate change. The most detailed hydroclimate modeling specific to the Rio Grande has been conducted by the Bureau of Reclamation under its Westwide Climate Risk Assessment program as required under the SECURE Water Act. Reclamation used data from 112 CMIP3 models that were bias corrected and spatially downscaled to 1/8° cells and then input into a VIC model, with the flows subsequently routed down the Rio Grande. The median of median changes from their modeling effort, at specific gages, are provided in the table, below (Reclamation, 2011).

Table 1. Modeling results from Reclamation (2011) showing hydrologic changes to the Rio Grande Basin.

Location	Precip. (%)	Mean temp (°F)	April 1 SWE (%)	Annual Runoff (%)	Dec.-Mar. Runoff (%)	Apr.-July Runoff (%)
2020-2029						
Rio Grande near Lobatos	-0.47	1.84	-25.63	-4.98	-7.12	-2.87
Rio Chama near Abiquiu	0.91	1.79	-87.13	-0.24	4.76	-1.27
Rio Grande near Otowi	-0.54	1.82	-42.20	-4.45	-3.07	-2.48
Rio Grande at Elephant Butte Dam	-0.53	1.79	-93.16	-4.05	-3.59	-1.64
Pecos R. at Damsite #3	-1.48	1.79	-100.00	-2.45	-0.63	-1.39
2050-2059						
Rio Grande near Lobatos	-2.29	2.98	-49.46	-18.89	-20.55	-15.37
Rio Chama near Abiquiu	-1.07	3.83	-96.37	-7.28	5.53	-13.85
Rio Grande near Otowi	-2.42	3.82	-63.92	-14.40	-10.41	-15.91
Rio Grande at Elephant Butte Dam	-2.31	3.82	-98.37	-13.48	-8.95	-15.42
Pecos R. at Damsite #3	-0.72	3.76	-100.00	-2.75	-3.76	-3.63
2070-2079						
Rio Grande near Lobatos	-2.23	5.18	-68.97	-22.41	-23.69	-20.13

Although these numbers are very precise, they provide only general guidance for future change because the range of variation around each of these numbers is very large; the range for temperature by 2070-2079 is approximately 7 to 8°F based on graphics in Reclamation (2011) while models report both gains and losses in precipitation over the basin. Proportionately similar variation exists around all of the figures presented in Table 1 (see Reclamation, 2011: Figure 46).

The Reclamation study and other extant studies suggest:

- Average annual temperatures are likely to increase. A median increase of 5°F (~3°C) is approximately equal to that now projected globally, but is conservative in light of the fact that continental interior portions of North America, such as New Mexico, are anticipated to warm faster than the global average temperature. The Draft National Climate Assessment (USGCRP 2013) states:

Regional annual average temperatures are projected to rise by 2°F to 6°F by 2041-2070 if global emissions are substantially reduced (as in the B1 emission scenario) and by 5°F to 9°F by 2070-2099 with continued growth in global emissions (A2), with the greatest increases in the summer and fall.

- Maps of projected temperature increases show the San Acacia GRR study area warming about 5°F to 8.5°F under all emissions scenarios by 2070-2099 (USGCRP 2013:Fig. 20.1). Higher temperatures are likely to contribute to longer, more severe heat waves and a reduction in winter cold snaps (USGCRP 2013:688).
- Temperature increases are likely to increase evaporation rates, resulting in a decrease in soil moisture. This will contribute to vegetation change and increased wildfire risk, particularly in mountain regions (USGCRP 2013:695). Droughts projected for the Colorado River Basin are likely to become more frequent, intense and longer-lasting (USGCRP 2013:690), Although the probability of this in the Rio

Grande Basin has not been specifically assessed, this is a likely corollary of increasing temperature and evaporation rates even if precipitation stays the same or increases.

- Precipitation is likely to decrease, although in percentage terms the numbers are small <3% and variation large (± 10 -15%) (Reclamation 2011). Changes in precipitation have low certainty (USGCRP 2009, 2013) because models do not currently effectively capture changes to El Niño-Southern Oscillation (ENSO cycle, and related sea surface temperature changes that affect winter precipitation) (Vecchi and Wittenberg 2010, Clement and Emile-Geay 2012), North American Monsoon (summer precipitation) (Gutzler et al. 2005), and Arctic sea ice (path of jet stream) (Screen and Simmonds 2010, Francis and Vavrus 2012).
- Snowpack is likely to decline. Reductions in April 1 snow water equivalence (SWE) of snow in mountain snowpacks reflect a shorter snow-accumulation season (warmer temperatures mean more fall and spring precipitation may fall as rain), and warmer temperatures mean greater snowpack melting and sublimation earlier in the water year (Christensen and Lettenmaier 2007, Cayan et al. 2010). Steep modeled declines in April 1 SWE (Reclamation, 2011; USGCRP 2013: Fig.20.2) reflect steep increases in temperature.
- Steep declines in April 1 SWE lead to steep declines in spring runoff (December-March runoff) and to advances in the timing of runoff by several weeks (Reclamation, 2011; also seen in a much more limited modeling effort in the Rio Grande Basin conducted by Hurd and Coonrod (2007, 2008)). Decreases in April-July runoff are also modeled by Reclamation (2011), reflecting the lack of persistence of snowpack and runoff into the late spring/early summer pre-monsoon months. Changes to stream hydrology have obvious effects on fish population, particularly river drying/rewetting episodes, but also the effects of changes in water quality due to reduced flows and changes to floodplain water tables affecting vegetation regeneration. These results differ dramatically from the finding of small changes in October-March, April-September and annual runoff in the Rio Grande under a 4°F warmer world in Rango and Martinec (2008).

Cayan, D. R., T. Das, D. W. Pierce, T. P. Barnett, M. Tyree, and A. Gershunov. 2010. Future dryness in the southwest US and the hydrology of the early 21st century drought. *Proceedings of the National Academy of Sciences of the United States of America* 107:21271-21276.

Christensen, N. S. and D. P. Lettenmaier. 2007. A multimodel ensemble approach to assessment of climate change impacts on the hydrology and water resources of the Colorado River Basin. *Hydrology and Earth System Sciences* 11:1417-1434.

Clement, A. and J. Emile-Geay. 2012. El Niño-Southern Oscillation: what is the outlook for ENSO? Pages 28-29 in N. R. Bondre, T. Kiefer, and L. von Gunten, editors. *PAGES News: Paired Perspectives on Global Change*.

Council on Environmental Quality (CEQ). 2011. *Federal Agency Climate Change Adaptation Planning: Support Document*. The White House Council on Environmental Quality, Washington, D.C.

Francis, J. A. and S. J. Vavrus. 2012. Evidence linking Arctic amplification to extreme weather in mid-latitudes. *Geophys. Res. Lett.* 39:L06801.

Gutzler, D. S., H. K. Kim, R. W. Higgins, H. M. H. Juang, M. Kanamitsu, K. Mitchell, K. Mo, P. Pegion, E. Ritchie, J. K. Schemm, S. Schubert, Y. Song, and R. Yang. 2005. The North American Monsoon Model Assessment Project: Integrating Numerical Modeling into a Field-based Process Study. *Bulletin of the American Meteorological Society* 86:1423-1429.

Hurd, B. H. and J. Coonrod. 2007. *Climate Change and its Implications for New Mexico's Water Resources and Economic Opportunities*. New Mexico State University, Agricultural Experiment Station Technical Report 45, Las Cruces, New Mexico.

Hurd, B. H. and J. Coonrod. 2008. Climate change risks to New Mexico's waterways: its byways and its flyways. *Water Resources Impact* 10:5-11.

Rango, A. and J. Martinec. 2008. Predictions for snow cover, glaciers and runoff in a changing climate. in *HydroPredict 2008*, Prague, Czech Republic, 15-18 September 2008.

Screen, J. A. and I. Simmonds. 2010. The central role of diminishing sea ice in recent Arctic temperature amplification. *Nature* 464:1334-1337.

U.S. Bureau of Reclamation (Reclamation). 2011. West-wide climate risk assessments: bias-corrected and spatially downscaled surface water projections. U. S. Department of the Interior, Bureau of Reclamation Technical Memorandum No. 86-68210-2011-01, Denver, Colorado.

U.S. Global Change Research Program (USGCRP). 2009. *Global Climate Change Impacts in the United States*. Cambridge University Press, Cambridge, United Kingdom.

U.S. Global Change Research Program (USGCRP). 2013. *Draft Third National Climate Assessment Report*.

Vecchi, G. A. and A. T. Wittenberg. 2010. El Nino and our future climate: where do we stand? *Wiley Interdisciplinary Reviews-Climate Change* 1:260-270.

d. The analysis of environmental consequences omits many key considerations.

1. Impacts to wildlife habitat

The Rio Grande in the San Acacia to San Marcial reach is incised immediately below San Acacia diversion dam and aggrading downstream. Aggradation is due to channel confinement – and resultant sediment deposition – achieved by channel rectification by the Bureau of Reclamation and confinement of the floodway by the spoil banks. The river channel is perched above the floodplain, in some places by 10 to 15 feet. DEIS 2-6 – 2-7. The river will continue to aggrade with or without the project, DEIS 3-4, 4-31; and aggradation and the railroad bridge will remain a constraint to larger river flows through the area.

Without the project, the riparian and aquatic ecosystems would continue to degrade, include a lack of overbank flooding, narrowing of the river channel, and increasing depths to groundwater. DEIS 3-10. Although unstated in the DEIS, it is likely that degradation will continue with the project as well, since these conditions would not change with the construction of levees. The GRR/DEIS presents the increased flood protection from engineered levees as an opportunity to reverse this ecological degradation because the infrastructure would allow for a wider range of reservoir releases and river flows to benefit riparian and aquatic habitat. If this is to be an environmental benefit of the proposed project, the DEIS should assess whether the operational changes that would allow a wider range of reservoir releases is within existing authorities or would require additional environmental analysis and compliance.

Response: Section 4.7.7.3, Contributions to Ecological Resources, stated that implementation of any of the alternatives "...increases the capacity of the channel in this area and allows for higher volume releases from upstream reservoirs." This inadvertently overstated the potential for the proposed project to alter reservoir operation. The text has been revised to read:

"Increasing the extent or frequency of riparian inundation by relatively small discharges (e.g., 10,000 cfs or less) would be beneficial to ecological resources along the Rio Grande. Implementation of any alternative that includes the rehabilitation of the spoil bank in the study area increases the non-damaging discharge capacity of the floodway in the San Acacia reach. This, in part, reduces current constraints on higher discharge releases from upstream reservoirs. The spoil bank in the study area is not the only feature in the middle Rio Grande valley currently limiting such increased releases. Most particularly, spoil banks along both sides of the floodway in the 20-mile-long Isleta-to-Belen reach (upstream from San Acacia) are a similar constraint. Increasing reservoir discharges, and the resultant benefits to ecological resources, would only be realized following the system-wide reduction of such limitations."

Corps of Engineers vegetation standards. The DEIS notes that in light of Corps' Engineer Technical Letter 1110-2-571 (April 10, 2009), there will be no woody vegetation allowed to grow on the levee or within 15 feet of the toes of the levee. DEIS 5-15. WildEarth Guardians shares the concerns expressed by numerous other parties regarding ETL 1110-2-571 and the impact of eliminating vegetation from the riparian area; we hereby incorporate by reference analyses and comments from others on the ETL. *See, e.g.*, Letter from California Department of Water Resources, to U.S. Army Corps of Engineers (April 15, 2010), available at http://www.water.ca.gov/floodsafe/leveeveg/levee_documents/2010-0415_DWRLetter_and_attachment.pdf ; Letter from Center for Biological Diversity, to U.S. Army Corps of Engineers (April 26, 2010), available at http://www.water.ca.gov/floodsafe/leveeveg/levee_documents/COE-2010-0007-0043.1.pdf . We also note that the analysis does not consider the availability of a variance from the Technical Letter that would allow woody vegetation on and/or near the levees. The DEIS should disclose this possibility and analyze the alternative with a variance allowing vegetation; the DEIS should also disclose agency scientific findings that trees and woody vegetation may strengthen levees. *See* Matt Weiser, *Trees strengthen levees in some cases, study finds*, Sacramento Bee, at 1A (Aug. 27, 2011).

Response: The conditions along the Rio Grande in the study reach vary considerably from the conditions in which variances have been issued such as the example provided in the comment. In the San Acacia reach, the levee alignment is set back from the active channel of the Rio Grande by tens or hundreds of feet. The predominant vegetation bordering the alignment is dense salt cedar, or other plant communities with relatively low wildlife habitat value. Accordingly, a variance from the standard requirements of ETL 1110-2-571 is not proposed for the San Acacia to Bosque Del Apache Unit project. Available information to assure life safety in the study area does not support a variance at this time. Further erosion of the levee face is only one parameter influenced by the existence of woody vegetation in on or near the levee. The vegetation management area also facilitates annual visual levee inspection for certification, access for inspection, and repair and monitoring for performance during flood events. The Corps has produced draft conditions under which variances may be issued; however, finalization of these conditions is under additional study to include specific analysis of the southwest region.

As additional information regarding potential variances is made available, the Corps will evaluate the information to determine applicability to the proposed project. Updated information will be included in evaluation and detailed design of each segment over the twenty years of project implementation.

“In 2010, 27 of the flycatcher territories in this reach were located on the west bank of the river, adjacent to the alignment of the current spoil bank and proposed engineered levee.” DEIS 2-23. We recommend the DEIS analyze whether the inundation and likely increase in riparian vegetation and territories possibly caused by the Tiffany sediment plug would occur with the project, whether this vegetation would be removed by levee construction or Corps vegetation standards, and if so, whether a variance could allow the vegetation to remain.

Response: Following implementation of the proposed project, sediment plugs within the downstream portion of the study area would still periodically occur, along with their potential to locally improve riparian growth through increased inundation. Currently, the 50%-chance occurrence discharge of 5,500 cfs at San Acacia inundates nearly the entire riverward toe of spoil bank from Highway 380 to San Marcial. The frequency and linear extent of this inundation also would not be altered by the proposed project. The vegetation standards of ETL 1110-2-571 are recommended regardless of the discharge event that may induce woody vegetation to colonize the 15-foot-wide zone adjacent to the riverward toe of a constructed levee.

2. Impact on other projects

Habitat restoration projects, DEIS 3-12, as well as plans, are being developed for the San Acacia reach of the Middle Rio Grande. Much of this work is being done in association with the Middle Rio Grande Endangered Species Collaborative Program. *See* Restoration Analysis and Recommendations for the San Acacia Reach of the Middle Rio Grande, NM (Jan. 2008), available at <http://www.middleriogrande.com> ; *see also* Conceptual Restoration Plan for the Active Floodplain of the Rio Grande San Acacia – San Marcial, New Mexico (Feb. 2004), available at <http://www.sobtf.org> . The Corps is a member of this Program, which recently established a San Acacia work group, and would serve the Program well to consider potential conflicts and compatibilities with the habitat restoration plans formulated and adopted by the Program.

Response: The Corps has reviewed the current restoration plans in the references cited, as well as the current action plan being developed by the Middle Rio Grande Endangered Species Collaborative Program. The majority of the restoration projects envisioned would be designed to current flow conditions, which would not be altered by the Corps' proposed project. The Corps will monitor groundwater-surface water interaction and dynamics in the San Acacia reach; and will assist resource management agencies in the analysis, modeling, planning, and adaptive management of activities relating to future sediment, habitat, and flow issues. The Corps will continue its participation and technical involvement in habitat restoration efforts by the Collaborative Program.

3. Compliance with other laws

An action that may violate federal or state law or other requirements for environmental protection, *see* 40 C.F.R. § 1508.27(b), may have a significant impact. *See also id.* § 1502.16(c) (environmental effects section shall include discussions of possible conflicts between the proposed action and federal, state, local or tribal plans, policies or controls for the area); *id.* § 1506.2(d) (requiring discussion of any inconsistency with state or local plans or laws and of the extent to which the proposed action will be reconciled with the plan or laws). The Corps should supplement its environmental impacts analysis and determination of significance by considering additional environmental requirements.

(a) Clean Water Act requirements

The Environmental Protection Agency's Section 404(b)(1) guidelines state that "[n]o discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem." 40 C.F.R. § 230.10(a). Using the DEIS analysis, the recommended plan would fill 9.3 acres of open floodway and create about 15.4 acres of floodway, resulting in net gain. DEIS 6-8. Other alternatives, though, would fill only 1.4 acres of floodway and create 42.33 acres, resulting in less loss and a much larger net gain. The DEIS should include the foregoing analysis in order to demonstrate that the recommended plan is the least environmentally damaging to aquatic resources. The 404(b)(1) Guidelines Evaluation should also include such an analysis to support the conclusory assertion that the recommended plan meets environmental compliance requirements.

Response: The figures cited only focus on one aspect of the determination of impacts to the aquatic ecosystem. It is correctly stated that the recommended plan would fill approximately 9.5 acres of open floodway and ultimately result in a gain of 15.4 acres of floodway area, for a net gain of approximately 5.9 acres. Conversely, Alternatives A and K would fill only 1.4 acres of open floodway, and would result in a gain of 42.3 acres of floodway area. But those figures alone do not correctly assess the entirety of the ecosystem impacts. Because Alternatives A and K represent a levee four feet shorter than that in the recommended plan, there is a significantly greater amount of spoil that must be disposed from the existing spoil bank. From the values in Table 6.1 "Soil Quantities," the recommended plan results in a disposal total of 1,475 acre-feet of soil, while Alternatives A and K both result in 2,389 and 2,435 acre-feet, respectively, in need of disposal. This additional 914 to 960 acre-feet of soil requiring disposal not only causes a significant increase in the cost of the project, but creates additional ecosystem impacts at the site of the disposal (that is, 178 to 187 additional acres). When both the impact of disposal and the impact of fill in the floodway are taken into consideration, the recommended plan does provide the least environmentally damaging practicable alternative.

The 404(b)(1) Guidelines also prohibit discharges unless the applicant has taken all appropriate and practicable steps to minimize potential impacts on the aquatic environment. 40 C.F.R. § 230.10(d). Compensatory mitigation is required under the Guidelines for unavoidable impacts to waters after the least environmentally damaging practicable alternative has been determined. The Corps must discuss the steps that the applicant will take to avoid and minimize impacts to the maximum extent and include a mitigation plan for unavoidable impacts. The Corps must also evaluate the efficacy of that mitigation plan in reducing and mitigating adverse effects.

Response: As stated in the joint USACE/USEPA 404(b)(1) guidelines, an alternative to the proposed discharge with a less adverse impact must also be practicable. An alternative is practicable where it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." Further, an alternative is only practicable if it is capable of being done taking into consideration the overall project purpose. When both cost and ecosystem impacts associated with increased spoil quantities are taken into account, the recommended plan is the least environmentally damaging practicable alternative.

(b) Migratory Bird Treaty Act & Bald and Golden Eagle Protection Act

Given the construction activities and vegetation removal that would occur as a result of construction of the levee and Corps vegetation standards for levees, the DEIS should assess impacts on migratory birds and bald eagles. The Migratory Bird Treaty Act, 16 U.S.C. § 703 *et seq.*, protects hundreds of migratory birds species. Although bald eagles are no longer an endangered species, the Bald and Golden Eagle Protection Act, 16 U.S.C. § 668 *et seq.*, offers similar protections for bald and golden eagles.

Response: Text within Chapter 6 of the GRR/SEIS-II was augmented to describe that the proposed plan (and its alternatives) would not result in "take" pursuant to the Bald and Golden Eagle Protection Act or the Migratory Bird Treaty Act.

4. Additional environmental consequences

NEPA requires consideration of "the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity." 40 C.F.R. § 1502.16.

Agencies have interpreted this to include using “all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans. 42 U.S.C. § 4331. NEPA also requires discussion of “any adverse environmental effects which cannot be avoided” and “any irreversible or irretrievable commitments of resources.” 40 C.F.R. § 1502.16. The DEIS should disclose these environmental consequences.

Response: The Final GRR/SEIS-II addresses all perceived unavoidable environmental effects. The text was augmented to include discussion of irreversible or irretrievable commitments of resources.

e. Mitigation and Monitoring are important but overlooked requirements.

Response: The draft GRR/SEIS-II included preliminary mitigation and monitoring plans. The final GRR-SEIS-II includes a revised mitigation and monitoring plan (Appendix F-4) that addresses the concerns listed below and the requirements of cited references.

Mitigation is an important part of a NEPA analysis, as demonstrated by its use throughout CEQ’s implementing regulations. *See* 40 C.F.R. § 1502.14(f) (“include appropriate mitigation measures not already included in the proposed action or alternatives”); *id.* § 1508.25(b)(3) (defining the scope of an EIS to include mitigation measures not in the proposed action); *id.* § 1508.20 (defining mitigation). An agency must also discuss “[m]eans to mitigate adverse environmental impacts” in its analysis of environmental effects of the proposed action and alternatives. *Id.* § 1502.16(h). “Omission of a reasonably complete discussion of possible mitigation measures” undermines NEPA and the ability to assess the severity of environmental impacts. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989).

Critical to the assessment of environmental effects is an analysis of the effectiveness of proposed mitigation measures as well as assurances that mitigation measures will be implemented and monitored. CEQ recommends that any agency NEPA analyses and/or decision documents should:

- describe the expertise applied in determining appropriate mitigation commitments;
- consider when and how mitigation commitments will be implemented;
- specify measurable performance standards or expected results of mitigation commitments as well as the timeframe for the agency action and mitigation commitments;
- disclose if it is reasonably foreseeable that funding for mitigation measures may not be available and, if so, the resultant environmental effects;
- identify alternative mitigation measures if the initial commitments are not implemented or effective; and
- describe monitoring plans and programs, the agency and/or applicant responsible for developing and implementing the monitoring program and the monitoring area and appropriate monitoring system.

See Final Guidance for Federal Departments and Agencies on the Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact, 76 Fed. Reg. 3843 (Jan. 21, 2011).

Coupled with WRDA's requirements for a specific mitigation plan, mitigation monitoring, and other requirements, the GRR/DEIS's discussion of mitigation is incomplete by both WRDA and NEPA standards. The Corps should ensure that proposed mitigation measures follow CEQ guidance.

1. Failure to Analyze Effectiveness of Mitigation Measures

The DEIS must provide data and analysis that demonstrate why the proposed mitigation measures/design features will "constitute an adequate buffer against the negative impacts that may result from the [proposed alternatives]." *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001).

Response: The revised mitigation plan in Appendix F-4 reiterates the Corps' and sponsor's commitment to assuring successful mitigative revegetation. Section 6.4.2.6 of the final GRR/SEIS-II quantifies the compensatory value of proposed project features and mitigation measures.

(a) No supporting analysis for mitigation

With additional analysis describing how and to what level mitigation is expected to reduce impacts to environmental resources, the DEIS will be able to "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options" 40 C.F.R. § 1502.14.

Furthermore, the types and amount of mitigation, the criteria for success, the functions and values, and any contingency plans must be evaluated in light of the projected changes due to climate change. For example, several studies project that drier and warmer climatic conditions may reduce vegetative ground cover, increase evapotranspiration, and shift species ranges. Indeed, the DEIS acknowledges predictions of more severe drought and drier soil conditions. DEIS 6-2. The DEIS should assess the likelihood of success of revegetation, the species to be used in revegetation, and the availability of water supplies to grow and maintain vegetation.

Response: The Corps acknowledges that reduced streamflow and precipitation may result in drier conditions within the riparian zone; however, the timing, extent, and degree of such changes are not clear at the present. This uncertainty will be clarified through a program of monitoring, modeling, and scientific analysis conducted by the Corps once construction has started. The Corps will monitor groundwater-surface water interaction and dynamics in the San Acacia reach; and will assist resource management agencies in the analysis, modeling, planning, and adaptive management of activities relating to future sediment, habitat, and flow issues. Based on findings, the Corps shall determine and develop commensurate mitigation for the duration of the project.

(b) Monitoring critical to mitigation effectiveness

Additional analysis that indicates the expected results of mitigation will also inform any monitoring program that the Corps and/or sponsors should commit to implementing.

“Monitoring is fundamental for ensuring the implementation and effectiveness of mitigation commitments, meeting legal and permitting requirements, and identifying trends and possible means for improvement.” 76 Fed. Reg. at 3849. CEQ regulations already require that “a monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation.” 40 C.F.R. § 1505.2(c). There are still monitoring commitments left to be specified in the mitigation plan, in particular, the parties responsible for monitoring and the contingency plan for taking corrective actions in cases in which monitoring demonstrates that mitigation measures are not achieving ecological success; and a commitment to monitor until the mitigation is found to be successful.

Response: The revised mitigation plan in Appendix F-4 clarifies the Corps' and sponsor's commitment to successful implementation of mitigation and subsequent monitoring, and includes additional details on monitoring the success of mitigative plantings through periodic analysis of vegetation characteristics and avian use during the 15 years following planting.

In addition to WRDA requirements described above, the monitoring program should track whether mitigation commitments are being performed as described in the DEIS *and* whether the mitigation is producing the expected outcomes and environmental effects. The monitoring program should also provide for public involvement. 76 Fed. Reg. at 3851. The Corps should take the additional step of releasing monitoring reports and making monitoring results available online. *Id.*

Response: Concur. The text has been updated to clarify that monitoring results would be made available to the public in addition to resource agencies.

2. Mitigation and Best Management Practices

Impacts to Rio Grande silvery minnow. The Corps has listed typical best management practices that it would comply with during construction activities. DEIS 6-9. We recommend that additional best management practices would require the Corps to avoid construction and activities related to the river crossing when a qualified biologist determines that Rio Grande silvery minnows are present in the area.

Response: The following BMP was added to Chapter 6: "Qualified fisheries biologists would evaluate measures to exclude fish from in-channel construction areas. Cofferdams and silt curtains would be deployed by Corps biologists from the shoreline into the channel to exclude fish from construction areas where possible. If appropriate, biologists would coordinate with Service personnel to seine areas prior to placement of barriers in the construction area."

Impacts to Southwestern Willow Flycatchers. To avoid impacts to flycatchers, we recommend that the best management practice during construction activities be revised to state that vegetation removal would only be performed if inspection by a qualified biologist determines that “flycatchers *or their nests*” are not present within 500 feet of the vegetation patch to be removed. DEIS 6-26.

Response: Concur. The text has been revised accordingly.

Thank you for your consideration of these comments.

Sincerely,
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On behalf of

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