



Chapter I

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PURPOSE OF AND NEED FOR THE PROPOSED PROJECT

The purpose of the Navajo-Gallup Water Supply Project (proposed project) is to provide the long-term (year 2040) supply, treatment, and transmission of municipal and industrial (M&I) water to the eastern part of the Navajo Nation, the Jicarilla Apache Nation, and the city of Gallup, New Mexico. The Federal action is to construct, operate, and maintain a water supply system that meets projected year 2040 water demand. The Bureau of Reclamation (Reclamation) is authorized to construct, operate, or maintain facilities proposed in this document. This authorization was included in the recent Omnibus Public Land Management Act of 2009 (Public Law [P.L.] 111-11).

A long-term (year 2040) sustainable water supply is needed for the Navajo and Jicarilla Apache Nations and the city of Gallup to support the current and future populations. The existing groundwater supplies are dwindling and have limited capacity.

THE PROPOSED PROJECT

The project proposes to convey a reliable M&I water supply to the eastern section of the Navajo Nation, the southwestern part of the Jicarilla Apache Nation, and the city of Gallup, New Mexico, via diversions from the San Juan River in northern New Mexico. The Navajo Nation, city of Gallup, and Jicarilla Apache Nation are cooperating project participants.

Navajo Nation communities and the city of Gallup rely on a rapidly declining groundwater supply that is inadequate to meet present and projected needs to the year 2040. Other water sources are needed to meet current and future M&I demands of more than 43 Navajo chapters,¹ the city of Gallup, the Navajo Agricultural Products Industry (NAPI), and the Teepee Junction area of the Jicarilla Apache Nation.

The proposed project would deplete approximately 35,893 acre-feet of water annually from the San Juan River for M&I use. Based on the expected populations in the year 2040, Reclamation estimates that the proposed project would serve approximately 203,000 people in 43 chapters in the Navajo Nation, 1,300 people in the Jicarilla Apache Nation, and approximately 47,000 people in the city of Gallup.

This planning report and final environmental impact statement (PR/FEIS) examines six structural alternative plans for achieving water delivery, as well as a non-structural Water Conservation Alternative for the proposed project. It describes the way in which the plans were formulated and evaluated, includes appraisal-level designs and cost estimates, and discloses the environmental impacts of the No Action Alternative and two action alternatives, as required by the National Environmental Policy Act (NEPA). It also meets the guidelines and requirements of other laws and mandates cited at the end of this chapter.

The ultimate objective of the planning effort in this project is to develop an economically, technically, socially, and environmentally acceptable plan that would provide for present and future water supply needs in the area. The steps necessary to attain this goal are to:

- Delineate present conditions
- Estimate growth and future water demands
- Determine the capability of water resources to meet the needs
- Formulate and weigh alternative plans
- Select a proposed plan

The proposed project would also facilitate self-governance and sovereignty goals of the Jicarilla Apache and Navajo Nations.

¹ Navajo Nation chapters are centers of local government. The Navajo Nation is divided into 110 chapters.

SCOPE

The general project area is on the west slope of the Continental Divide and is within the drainage basins of the Rio Grande and Upper and Lower Colorado Rivers. Figure I-1 depicts the proposed project boundaries at a Navajo chapter-level scale and specific locations.

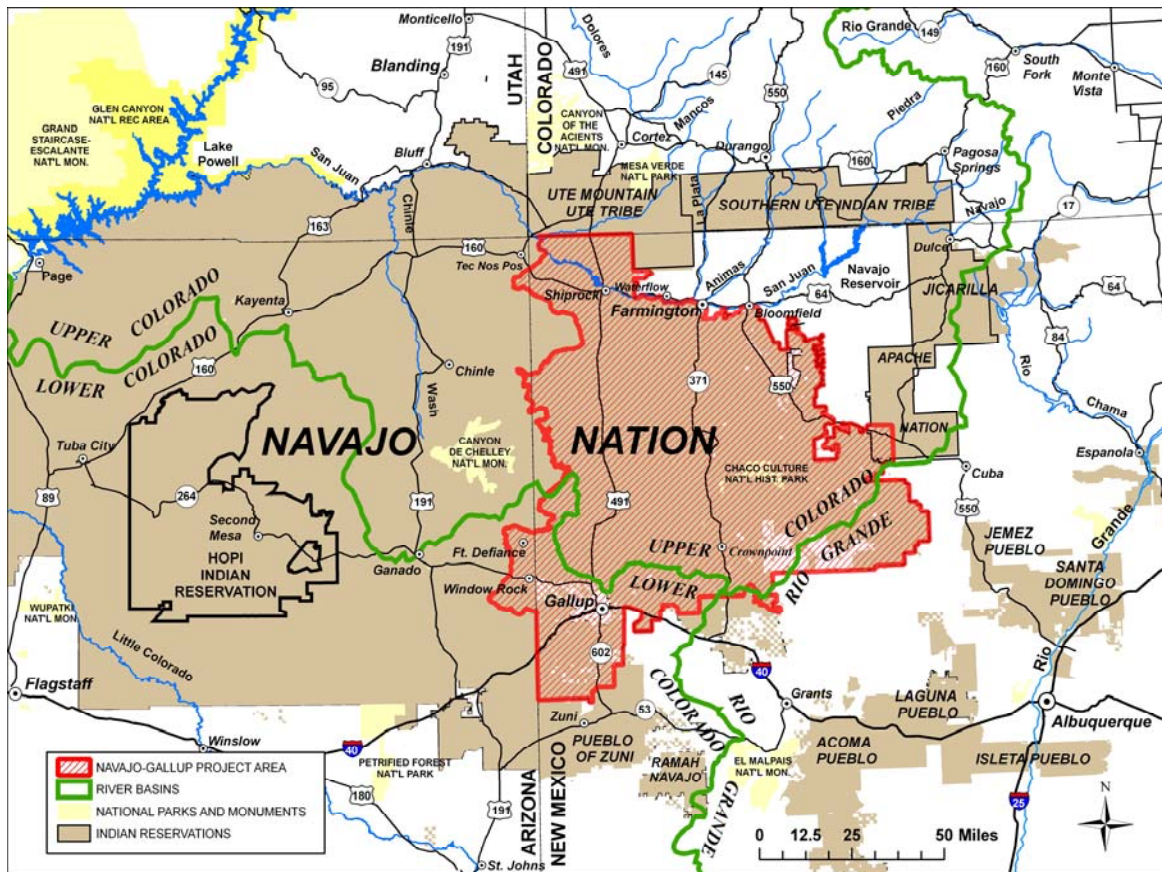


Figure I-1.—Proposed project area.

The Navajo Nation Reservation lands portion of the proposed project area is bounded generally on the west by the New Mexico/Arizona State line, with small parts of the proposed project in Arizona near Teec Nos Pos to the north and Fort Defiance/Window Rock to the south; on the north by the Colorado/New Mexico State line to a point roughly above Waterflow, New Mexico, then south to the San Juan River and eastward to a point

near Bloomfield, New Mexico; on the east by U.S. Highway 550 to approximately Counselor, New Mexico; and on the south from a point westward into Arizona near Window Rock, with a dip south of Manuelito to include the city of Gallup.

The Jicarilla Apache Nation Reservation lands portion of the proposed project area is bounded generally on the south and west by U.S. Highway 550 and then north parallel to State Highway 537, on the north by the main reservation, and on the east by the Mundo Ranch area.

The Proposed Project Area

Navajo Nation

The Navajo Nation Reservation was established in 1868 and has been expanded through a series of Executive orders to become the largest American Indian (Indian) reservation in the United States. The Navajo Nation encompasses 26,897 square miles within the States of Arizona, New Mexico, and Utah, constituting an area larger than the State of West Virginia. According to the U.S. Census Bureau (2000), on-reservation population was 181,000, and, nationwide, approximately 300,000 people indicated they were Navajo. The Navajo have a high level of poverty, with more than 56 percent having incomes below the poverty level and a reservation unemployment rate of 54 percent (Rodgers, 1995).

Jicarilla Apache Nation

The Jicarilla Apache Nation is located in north-central New Mexico and includes approximately 742,800 acres. Additional private parcels of land adjacent to the reservation have been acquired by the Jicarilla Apache Nation in recent years, resulting in 97,000 acres being added to the reservation through trust acquisition actions by Congress. The Jicarilla Apache Nation is by far the largest employer of its people, providing social services and management of its natural resources. Tribal unemployment rates are about 16.6 percent in the summer and 28.7 percent in the winter (Jicarilla Apache Nation, 1998).

City of Gallup

The city of Gallup is the county seat of McKinley County, New Mexico, and is the economic center for a 15,000-square-mile trade area. The city is located on two major highways—Interstate Highway 40, from east to west, and Route 491, which extends north to Shiprock. The city is a tourism center and also has industries centering on

natural gas, oil, coal, and uranium extraction. The city of Gallup's year 2000 population was approximately 20,200 (North West New Mexico Fact Book, 2003), and about 37 percent of that number were Native American residents.

PROPOSED PROJECT AUTHORIZATION, RELATED AGREEMENTS, AND RESOLUTIONS

Reclamation

General authority to conduct water resources planning is delegated to Reclamation by Federal Reclamation Laws of 1902 and subsequent supplements. Specific authority is under P.L. 92-199 of 1971, which authorized Reclamation to conduct feasibility studies for a project to provide water to the Navajo Nation and the city of Gallup. Numerous studies were conducted in the intervening years, and a major study effort has been funded since the year 2000, with in-kind cost sharing by the Navajo Nation, the city of Gallup, and the Jicarilla Apache Nation (volume II, appendix A). These studies have resulted in this PR/FEIS, which includes appraisal-level designs and cost estimates.

The proposed project authorization was included in the recently enacted Omnibus Public Land Management Act of 2009, Title X, Part III (P.L. 111-11, March 30, 2009). The act authorizes the Secretary of the Interior (Secretary) to:

1. Construct, operate, and maintain the proposed project
2. Allocate the capacity of the proposed project among the Navajo Nation, Jicarilla Apache Nation, and the city of Gallup
3. Enter into proposed project repayment contracts with the city of Gallup and the Jicarilla Apache Nation

In general, the Secretary, acting through the Commissioner of Reclamation, is authorized to design, construct, operate, and maintain the proposed project in substantial accordance with the preferred alternative in the draft environmental impact statement.

The Omnibus Public Land Management Act of 2009 (P.L. 111-11) approved, ratified, and confirmed the San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement (Navajo Settlement Agreement) under Title X, Part IV of the act. This PR/FEIS does not analyze the Navajo Settlement Agreement; however, the act requires that all proposed project features shall be completed no later than December 31, 2024. Under the act, the Secretary shall execute an agreement consistent with the provisions of the act by December 31, 2010.

Water Resource Development Strategy of the Navajo Nation

The Navajo Nation's water resource strategy combines Tribal, Federal, State, and private resources and includes (Navajo Nation Department of Water Resources, 2001):

- Maintaining a water resource development task force, which will coordinate technical and fiscal resources of the Navajo Nation and Federal agencies
- Preparing a reservation-wide needs assessment and prioritizing projects
- Developing regional water supply projects
- Developing and rehabilitating local water supply and distribution systems
- Completing the Navajo Indian Irrigation Project (NIIP) and continuing to address deficiencies in water storage facilities

City of Gallup and the Navajo Nation

In 1998, the city of Gallup Mayor and the Navajo Nation President signed a Memorandum of Agreement (MOA) (attachment A) to cooperate on the planning for the proposed project. The MOA commits the city of Gallup and the Navajo Nation to:

- A cooperative effort to proceed with planning and development.
- A project that works conjunctively with the NIIP.
- A project that will result in a fair and equitable distribution of project water between the city of Gallup and Navajo Nation communities.
- A cooperative investigation of all viable alternative project configurations.
- Work together to resolve issues affecting the implementation of the proposed project.
- Support the commitment of the Bureau of Indian Affairs (BIA) to engage in section 7 (endangered species) consultation with the U.S. Fish and Wildlife Service (Service) as quickly as possible. Reclamation, as the lead Federal agency, has responsibility for section 7 consultation.

The MOA continues to serve as the basis for the collaborative efforts of the Navajo Nation and the city of Gallup to develop the proposed project. The Navajo Nation and the city of Gallup also executed a Memorandum of Understanding in October 2007 (attachment B) that addresses (1) exchange of groundwater for the Gallup Regional System and (2) a potential water supply for the city of Gallup. Resolutions of support for the proposed project from the Navajo Nation Resources Committee and local Navajo chapters are included in attachments C and D, respectively.

Upper Colorado River Commission

Recognizing the need to develop depletion schedules for long-range planning, the Upper Colorado River Commission (Commission) periodically assesses the depletion projections for the Upper Colorado Basin States. Projections by the State of New Mexico in May 2006 show the State not exceeding 642,400 acre-feet per year (AFY) through 2060 with full development of this proposed project (table I-1). The Commission passed a resolution in June 2003 supporting the proposed project and consenting to a diversion of water from the Upper Basin for use in the Lower Basin within New Mexico (attachment E). The Commission also passed a resolution in June 2006 supporting a proposed determination by the Secretary that sufficient water is reasonably likely to be available to fulfill the project water needs in New Mexico from the Navajo Reservoir water supply (attachment E). This water is in addition to existing Navajo Reservoir water supply contract water for other uses, under the allocations made to New Mexico in Articles III and XIV of the Upper Colorado River Basin Compact. The hydrologic determination prepared by Reclamation was signed by the Secretary on June 8, 2007.

State of New Mexico/Navajo Nation Negotiations

The proposed project is a component of the Navajo Settlement Agreement that was signed by the State of New Mexico and the Navajo Nation on April 19, 2005. The Navajo Settlement Agreement quantifies the Nation's water rights in the San Juan River Basin (Basin) in New Mexico. The settlement relies on congressional approval of the Navajo Settlement Agreement and Federal funding for Reclamation to construct the proposed project. The Navajo Settlement Agreement includes provisions for a long-term Navajo Reservoir water supply contract for the Nation's use under the proposed project in New Mexico. The quantification and settlement of the Navajo Nation's water rights for its uses under the project in Arizona are currently being discussed between the State of Arizona and the Nation.

The Omnibus Public Land Management Act of 2009 (P.L. 111-11) approved, ratified, and confirmed the Navajo Settlement Agreement under Title X, Part IV of the act. This PR/FEIS does not analyze the Navajo Settlement Agreement; however, the act

Table I-1.—State of New Mexico schedule of anticipated Upper Basin depletions (May 2006)¹
(1,000 AFY)

	2000	2010	2020	2030	2040	2050	2060
Irrigation uses²							
Navajo Nation Irrigation:							
Navajo Indian Irrigation Project	150.0	215.0	250.0	270.0	270.0	270.0	270.0
Fruitland-Cambridge Irrigation Project	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Hogback-Cudei Irrigation Project	15.5	15.5	21.3	21.3	21.3	21.3	21.3
Chaco River drainage irrigation	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Crystal area irrigation	0.3	0.3	0.3	0.3	0.3	0.3	0.3
<i>Navajo Nation irrigation subtotal</i>	176.9	241.9	282.7	302.7	302.7	302.7	302.7
Non-Navajo Irrigation:							
Above Navajo Dam (including Jicarilla)	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Upper San Juan (excluding Hammond)	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Hammond Irrigation Project	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Animas River ditches	40.7	40.7	40.7	40.7	40.7	40.7	40.7
La Plata River ditches	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Farmers Mutual Ditch	11.2	11.2	11.2	11.2	11.2	11.2	11.2
Jewett Valley Ditch	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Chaco River drainage irrigation	0.7	0.7	0.7	0.7	0.7	0.7	0.7
<i>Non-Navajo irrigation subtotal</i>	86.5	86.5	86.5	86.5	86.5	86.5	86.5
<i>Irrigation total</i>	263.4	328.4	369.2	389.2	389.2	389.2	389.2
Stockpond evaporation and stock use	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Municipal and domestic uses²							
Current M&I uses	9.7	9.7	9.7	9.7	9.7	9.7	9.7
Animas-La Plata Project:							
San Juan Water Commission	1.0	5.0	10.4	10.4	10.4	10.4	10.4
Navajo Nation	0.0	1.0	2.0	2.3	2.3	2.3	2.3
La Plata Conservancy District	0.0	0.0	0.8	0.8	0.8	0.8	0.8
Ridges Basin Reservoir evaporation - NM share	0.0	0.0	0.1	0.1	0.1	0.1	0.1
<i>Animas-La Plata Project subtotal</i>	1.0	6.0	13.3	13.6	13.6	13.6	13.6
Navajo-Gallup Water Supply Project: ³							
Navajo Nation	0.0	0.0	7.9	10.2	12.5	12.5	12.5
Jicarilla Apache Nation	0.0	0.0	0.8	1.0	1.2	1.2	1.2
<i>Navajo-Gallup Project subtotal (within Basin)</i>	0.0	0.0	8.7	11.2	13.7	13.7	13.7
Navajo Nation municipal use, future (excluding the Navajo-Gallup Water Supply Project)	0.0	0.0	1.0	1.0	2.0	2.0	2.0
Jicarilla Apache Nation municipal use (excluding the Navajo-Gallup Water Supply Project)	0.0	0.0	0.0	0.4	0.6	0.6	0.6
Scattered rural domestic (including Jicarilla)	1.0	1.0	1.0	1.1	1.1	1.2	1.2
<i>Municipal and domestic total</i>	11.7	16.7	33.7	37.0	40.7	40.8	40.8

Table I-1.—State of New Mexico schedule of anticipated Upper Basin depletions (May 2006) – continued
(1,000 AFY)

	2000	2010	2020	2030	2040	2050	2060
Power and industrial uses							
PNM – Navajo Reservoir contract ⁴	16.2	16.2	16.2	16.2	16.2	16.2	16.2
BHP Billiton	37.0	37.0	38.0	39.0	39.0	39.0	39.0
Bloomfield Industrial	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Navajo Nation – Shiprock	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Navajo-Gallup Water Supply Project – NAPI ³	0.0	0.0	0.7	0.7	0.7	0.7	0.7
Small Navajo reservoir contracts	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<i>Power and industrial total</i>	56.1	56.1	57.8	58.8	58.8	58.8	58.8
Exports							
San Juan-Chama Project	105.2	105.2	105.2	105.2	105.2	105.2	105.2
Navajo-Gallup Water Supply Project: ³							
Navajo Nation in New Mexico	0.0	0.0	4.0	5.8	7.6	7.6	7.6
City of Gallup	0.0	0.0	4.7	6.1	7.5	7.5	7.5
<i>Navajo-Gallup Project subtotal (export)</i>	0.0	0.0	8.7	11.9	15.1	15.1	15.1
<i>Export total</i>	105.2	105.2	113.9	117.1	120.3	120.3	120.3
Reservoir evaporation							
Navajo Reservoir evaporation	28.3	28.0	27.7	27.7	27.7	27.7	27.7
Small reservoir evaporation	1.2	1.2	1.2	1.2	1.2	1.2	1.2
<i>Reservoir evaporation total</i>	29.5	29.2	28.9	28.9	28.9	28.9	28.9
Total depletions⁵	469.9	539.6	607.5	635.0	641.9	642.0	642.0
State share of Upper Basin yield ⁶	642.4	642.4	642.4	642.4	642.4	642.4	642.4
Remaining available ⁶	172.5	102.8	34.9	7.4	0.5	0.4	0.4
Percent of State share remaining	26.9%	16.0%	5.4%	1.2%	0.1%	0.1%	0.1%

¹ These projections were prepared by the State of New Mexico and do not necessarily represent the Jicarilla Apache Nation's or any other water user's estimate of its own depletions in 2000 or in future years.

² Does not reflect post-1965 transfers from irrigation to M&I uses.

³ Proposed Navajo-Gallup Water Supply Project depletions in New Mexico total 29,500 acre-feet per year. Exports to Gallup are anticipated to be supplied through a subcontract with the Jicarilla Apache Nation. Exports for Navajo Nation uses in Arizona are not included.

⁴ Supplied through a subcontract with the Jicarilla Apache Nation.

⁵ This is a schedule of anticipated depletions for planning purposes only. It is not a tabulation or determination of water rights or actual uses. Total depletions exclude New Mexico's share of reservoir evaporation from the major reservoirs constructed under the Colorado River Storage Project (CRSP) Act that are used principally to regulate compact deliveries at Lee Ferry and generate CRSP hydroelectric power. These include Lake Powell, Flaming Gorge Reservoir, and the Aspinall Unit.

⁶ This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion or New Mexico's depletion. Of the water available to the Upper Basin at Lee Ferry, the allocation for use by New Mexico is listed in this schedule, for planning purposes, as 642,400 acre-feet. This amount does not include New Mexico's share of CRSP reservoir evaporation other than Navajo Reservoir evaporation.

requires that all proposed project features shall be completed no later than December 31, 2024. Under the act, the Secretary shall execute an agreement consistent with the provisions of the act by December 31, 2010.

Jicarilla Apache Tribal Council Resolution(s)

Participation of the Jicarilla Apache Nation in the proposed project would provide an opportunity for them to utilize a portion (1,200 acre-feet) of their Basin water rights for on-reservation development.² The Tribal Council passed a resolution in June 2000 to participate in planning of the proposed project.

The Jicarilla Apache Nation intends to engage in substantive discussions with the Navajo Nation, the city of Gallup, and Reclamation regarding an appropriate water supply for the proposed project and options for serving a portion of the Jicarilla Apache Nation through the proposed project (attachment F). Stand-alone pipeline projects from the Navajo River or other locations to the Teepee Junction area are cost prohibitive for the Jicarilla Apache Nation. However, by participating in the proposed project, the Jicarilla Apache Nation may be able to realize its development goals with water delivered to the desired location in a relatively cost-efficient manner by partnering with the Navajo Nation and the city of Gallup.

COOPERATING AGENCIES, PUBLIC INVOLVEMENT, AND SCOPING

In addition to the public information and scoping meetings and formal coordination required by law, as discussed in chapter VII, a number of agencies and entities have been involved in planning. A project steering committee has been established and functioning since the early 1990s. The committee's purpose is to oversee and guide the planning and implementation of the proposed project. The committee is composed of representatives from the Navajo and Jicarilla Apache Nations, State of New Mexico, Northwest New Mexico Council of Governments, city of Gallup, Navajo Tribal Utility Authority, BIA, and Indian Health Service. Since 2000, the committee has met quarterly to discuss planning status, address issues, and make assignments. For the purposes of this PR/FEIS preparation, the steering committee members also serve as the cooperating agencies for implementation of NEPA.

² Jicarilla Apache water rights were specified in the 1992 Jicarilla Apache Tribe Water Rights Settlement Act (P.L. 102-441).

PREVIOUS STUDIES

Over the past 40 years, a number of proposals have been studied to deliver water from the San Juan River and other sources of water to communities in the Navajo Nation and to the city of Gallup. Reclamation's first investigation for the "Gallup Project, New Mexico,"³ culminated in a reconnaissance report dated October 1973. A second study⁴ was completed in January 1984 and included expanded service to Navajo communities as well as to the city of Gallup. An appraisal-level estimate⁵ for a system with a main transmission line along Highway 371 was completed in September 1986. In November 1993, an appraisal-level study⁶ was conducted to deliver water from the Gallegos Reservoir, a planned feature of the NIIP. Previous Reclamation studies have been appraisal level.

This project has evolved as a major infrastructure initiative to supply approximately 23,900 acre-feet of water per year by year 2020 and approximately 37,800 acre-feet of municipal water per year by year 2040 to meet these needs. A detailed history of the proposed project can be found in volume II, appendix A, section 3.0.

OTHER PROJECTS AND ACTIONS IN THE SAN JUAN RIVER BASIN

Regulations for implementing NEPA require Reclamation to consider the relationship of the proposed project to other projects and activities in the area. That relationship has been considered by Reclamation, and it helped to determine the appropriate scope of this PR/FEIS. The relationship can be direct, indirect, or cumulative in nature. It extends to activities that are:

- **Connected actions** (40 Code of Federal Regulations [CFR] 1508.25(a)(1)), which means they are closely related and should be discussed in the same environmental impact statement
- **Cumulative actions** (40 CFR 1508.25(a)(2)), which, when viewed with other proposed actions, have cumulatively significant impacts

³ *Gallup Project Reconnaissance Report*, U.S. Department of the Interior, Reclamation, 1973.

⁴ *Gallup-Navajo Indian Water Supply Project, Planning Report/Draft Environmental Impact Statement*, U.S. Department of the Interior, Reclamation, Southwest Region, January 1984.

⁵ *Gallup-Navajo Indian Water Supply Project, New Mexico, Arizona, Technical Report*, U.S. Department of the Interior, Reclamation, Southwest Region, September 1986.

⁶ *San Juan River Gallup/Navajo Water Supply Project, Engineering and Cost Estimates, Technical Appraisal Report*, Reclamation, November 1993.

- **Similar actions** (40 CFR 1508.25(a)(3)), which have similarities to the proposed actions that provide a basis for evaluation together, such as common timing or geography

The status of other projects in the Basin has been particularly important to this project because of a need to secure a water supply in the face of diminishing opportunities. The Upper Colorado River Compact, development of the NIIP, Endangered Species Act (ESA), San Juan River Basin Recovery Implementation Program (SJRBRIP), Indian water rights settlements, the Animas-La Plata (ALP) Project, and current development all play a role in additional water development in the Basin. These projects, primarily cumulative in terms of their impacts, are summarized in the following sections.

San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement

On April 19, 2005, the State of New Mexico and the Navajo Nation signed the Navajo Settlement Agreement (Navajo Nation – State of New Mexico, 2005). Once executed by the Secretary, the agreement will resolve the claims of the Navajo Nation to the use of waters of the Basin in New Mexico. The Navajo Settlement Agreement is intended to provide water rights and associated water development projects, including the proposed project, for the benefit of the Navajo Nation in exchange for a release of claims to water that potentially might otherwise displace existing non-Navajo water uses in the Basin in New Mexico.

The Omnibus Public Land Management Act of 2009 (Public Law 111-11) approved, ratified, and confirmed the Navajo Settlement Agreement under title X, par IV of the act. This PR/FEIS does not analyze the Navajo Settlement Agreement; however, the act requires that all proposed project features shall be completed no later than December 31, 2024. Under the act, the Secretary shall execute an agreement consistent with the provisions of the act by December 31, 2010. Additional NEPA compliance may be needed to implement other portions of the agreement (Fruitland-Cambridge, Hogback-Cudei, conjunctive use groundwater wells, and others).

Navajo Indian Irrigation Project

The NIIP was authorized in 1962 by P.L. 87-483. This public law authorized the Secretary to construct, operate, and maintain the NIIP for the principal purpose of furnishing irrigation water to approximately 110,630 acres of land. The NIIP consists of the initial land development, water distribution system, water delivery, roads, and other infrastructure. In 1970, the Navajo Nation created NAPI to run the agricultural business venture and take responsibility for operating the NIIP facilities. The NIIP is

approximately 70 percent complete, with 77,685 acres developed. The average amount of water diverted by the NIIP from Navajo Reservoir from 2001 through 2005 was approximately 172,000 AFY. Based on an average unit depletion of 2.44 acre-feet per acre, at full build-out, with all of the proposed project acreage irrigated, the NIIP will divert approximately 337,500 acre-feet and deplete approximately 270,000 AFY of San Juan River water. This diversion amount includes significant conservation measures and alternatives as described in the NIIP biological assessment and biological opinion.

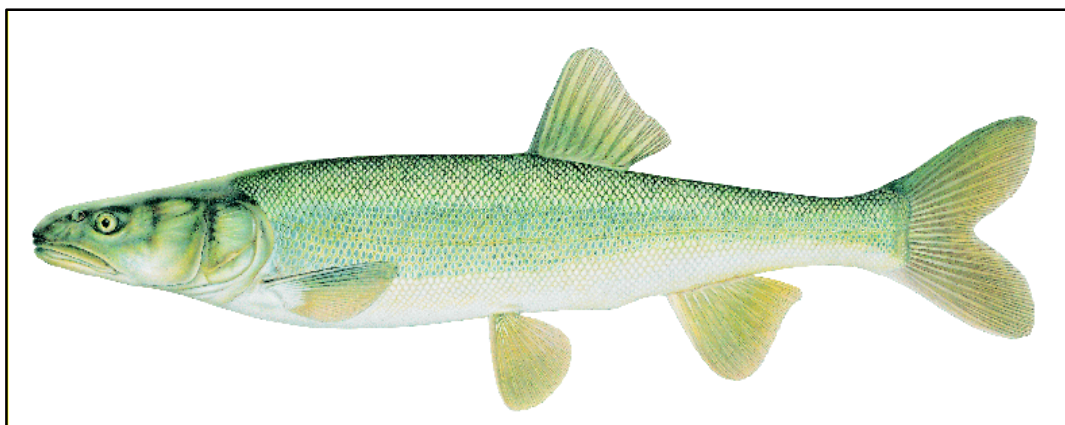
San Juan River Basin Recovery Implementation Program

Federal and State agencies, water users, and Indian Tribes have been cooperating in the SJRBRIP. Established in 1992, the SJRBRIP is composed of a partnership among the Jicarilla Apache Nation, Navajo Nation, Southern Ute Indian and Ute Mountain Ute Tribes, States of Colorado and New Mexico, BIA, Bureau of Land Management, Reclamation, the Service, and water development interests. The goal of the SJRBRIP is twofold:

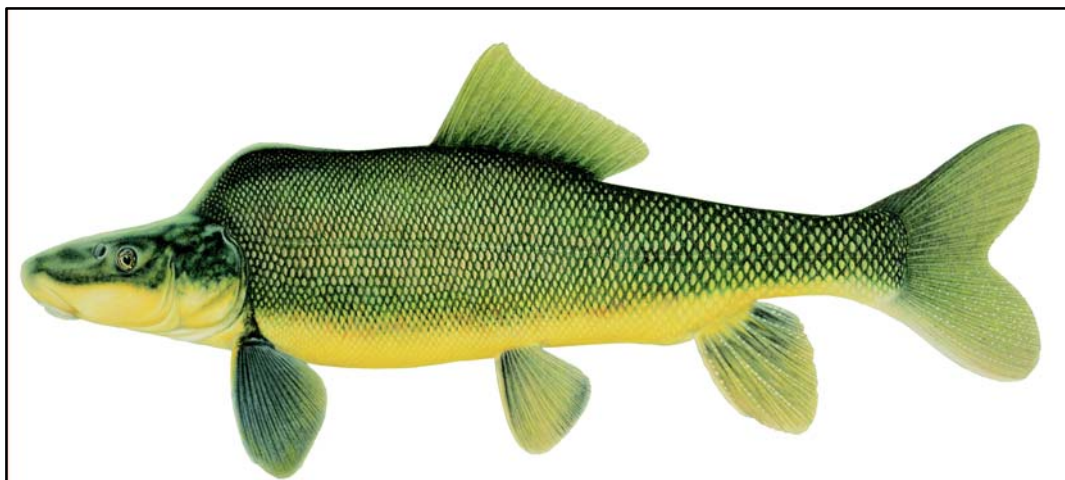
- (1) To conserve populations of Colorado pikeminnow and razorback sucker (figure I-2) in the Basin, consistent with the recovery goals established under the ESA, 16 United States Code (U.S.C.) 1531 et seq.
- (2) To proceed with water development in the Basin in compliance with Federal and State laws, interstate compacts, Supreme Court decrees, and Federal trust responsibilities to the Southern Ute Indian Tribe, Ute Mountain Ute Tribe, Jicarilla Apache Nation, and Navajo Nation

Program elements include the following:

- (1) *Protection, Management, and Augmentation of Habitat* – This element identifies important river reaches and habitats for different life stages of the endangered fishes and makes appropriate habitat improvements, including providing flows in the San Juan River and passage around migration barriers so as to provide suitable habitat to support recovered fish populations.
- (2) *Water Quality Protection and Enhancement* – This element identifies and monitors water quality conditions and takes actions to diminish or eliminate identified water quality problems that limit recovery.
- (3) *Interactions Between Native and Non-Native Fish Species* – This element identifies problematic non-native fish species and implements actions to reduce negative interactions between the endangered fish and non-native fish species.



Colorado pikeminnow



Razorback sucker

Figure I-2.— Colorado pikeminnow and razorback sucker.
(Illustrations copywritten by Joseph R. Tomelleri)

- (4) *Monitoring and Data Management* – This element evaluates the status and trends of endangered fish species, as well as other native and non-native species, and measures progress toward achieving recovery goals.
- (5) *Protection of Genetic Integrity and Management and Augmentation of Populations* – This element ensures that the SJRBRIP’s augmentation protocols maintain genetically diverse fish species while raising new generations of Colorado pikeminnow and razorback sucker to stock in the river system.

A 7-year research program was completed by the SJRBRIP, and Flow Recommendations were approved by the SJRBRIP in 1999. These Flow Recommendations have been implemented through reoperation of Navajo Reservoir. Fish passage has been restored at the Public Service Company of New Mexico, Hogback, and Cudei diversions on the San Juan River.

In 2001, the SJRBRIP adopted principles for section 7 consultation in the San Juan River Basin (attachment O). The principles are used as a guide to define how the SJRBRIP can be used to provide ESA compliance for impacts to listed fish species in the Basin for water development and water management activities. Colorado River Storage Project power revenues have been used to fund a significant portion (in excess of \$16 million) of the SJRBRIP.

Animas-La Plata Project

The ALP Project, located in southwestern Colorado and northwestern New Mexico, is being implemented as a component of the overall settlement of the Colorado Ute Tribal water rights. The ALP Project will provide an M&I water supply to the entities listed below (including their respective average annual allocated water depletion).

Entity	Average annual depletion (AFY)
Southern Ute Indian Tribe	16,525
Ute Mountain Ute Tribe	16,525
Navajo Nation	2,340
San Juan Water Commission	10,400
Animas-La Plata Water Conservancy District	2,600
State of Colorado	5,230
La Plata Conservancy District, New Mexico	780

As of October 1, 2008, construction was approximately 64 percent complete on the ALP Project, and it is anticipated to be completed in 2012. However, the project schedule is highly dependent upon future appropriations. Implementation of the SJRBRIP is the key element of the reasonable and prudent alternative⁷ (RPA) for section 7 consultation under the ESA that would permit completion of the ALP Project.

Navajo Reservoir Operations (Navajo Unit of the Colorado River Storage Project)

Reclamation, in April 2006, completed the Navajo Reservoir Operations Final Environmental Impact Statement (FEIS), and the Navajo Reservoir FEIS Record of Decision (ROD) was signed in July 2006. In accordance with the ROD, the reservoir will be operated in the future so that releases from Navajo Dam will generally range between 250 and 5,000 cubic feet per second (cfs) (the FEIS 250/5000 Alternative). For further details on this and other related projects, see the “Cumulative Impacts, Operation of Navajo Dam” section of chapter V).

As described in the Navajo Reservoir FEIS, Reclamation intends to operate Navajo Dam and Reservoir to implement ESA-related Flow Recommendations (SJRBRIP) to assist in conserving endangered fish in the San Juan River downstream from Farmington. In addition, reoperation will enable Basin water development, including this project, to proceed under applicable laws, compacts, and court decrees. An adaptive management component is also included, which allows for modification of operations based on Flow Recommendation implementation results and endangered fish responses.

Navajo Reservoir operations also constitute a connected action to other water resource activities in the Basin, such as the ALP Project and the NIIP. This connection stems from (1) past ESA consultations that relied on the SJRBRIP and listed certain RPAs to avoid jeopardy to the endangered species in question, (2) Flow Recommendations developed and approved by the SJRBRIP, and (3) Reclamation’s previous commitment to operate Navajo Reservoir for the benefit of endangered fish in the Basin.

San Juan-Chama Project

Reclamation’s San Juan-Chama Project diverted an annual average of 90,800 acre-feet of water from the Basin and transported the water across the Continental Divide for use in the Rio Grande Basin in New Mexico between 1972 and 2004. The long-term average

⁷ Regulations implementing the ESA, section 7, define reasonable and prudent alternatives as alternative actions that avoid a jeopardy determination for the endangered species identified during formal consultation with the Service.

San Juan-Chama Project diversion is anticipated to be about 105,200 AFY, as shown in Table I-1, State of New Mexico schedule of anticipated Upper Basin depletions. This reflects full project demands in the future under the full range of historic flow availability for the period of record. The Jicarilla Apache Nation has rights to divert and deplete 6,500 acre-feet of San Juan-Chama Project water annually, an amount that is included in the environmental baseline for the Basin. Under San Juan Chama Project authorizing legislation, diversions in New Mexico should not limit current or future beneficial uses in Colorado.

Other Related Actions

- Actions to implement some or all of the Jicarilla Apache Tribe Water Rights Settlement Act (Jicarilla Settlement Act) (P.L. 102-441) and related water service contracts
- Actions to develop some of the water rights established in the 1986 Colorado Ute Indian Water Rights Settlement Agreement and the Colorado Ute Settlement Act, amendments of 2000
- The exercise of other, presently unquantified Indian or Federal water rights
- Unspecified future non-Indian water development

WATER RIGHTS BACKGROUND

Indian Water Rights

Indian Tribes in and near the proposed project area may have reserved water rights to provide sufficient water to serve the purposes of their reservations. Such reserved rights may date from the time treaties, statutes, and Executive orders established reservations of land for the Tribe and are typically senior to other rights in the Basin. In certain instances, rights have been subordinated to later priority dates by agreement. For example, Indian water uses from Navajo Reservoir and from the ALP Project will be administered with the same priority as non-Indian water uses from these projects in accordance with Federal legislation and water rights settlements. In the Basin, combined Indian water rights constitute a potential right to much of the available water. The major treaties and other settlements implicating Indian water rights in the Basin are:

- (1) Northwestern New Mexico Rural Water Projects Act (title X, subtitle B of the Omnibus Public Land Management Act of 2009, P.L. 111-11, March 30, 2009) (attachment P)
- (2) Jicarilla Settlement Act (P.L. 102-441) of 1992 and the contract between the United States and the Jicarilla Apache Tribe, December 8, 1992
- (3) Treaty between the United States of America and the Navajo Tribe of Indians of 1849 (ratified by the Senate on September 9, 1850; proclaimed by the President on September 24, 1850; 9 Stat. 974), and the treaty between the United States of America and the Navajo Tribe of Indians (concluded June 1, 1868; ratification advised July 25, 1868; proclaimed August 12, 1868; 15 Stat. 667)
- (4) Colorado Ute Indian Water Rights Settlement Act of 1988 (P.L. 100-585) and Colorado Ute Indian Settlement Act Amendments of 2000 (P.L. 106-554), as amended

Non-Indian Water Rights

Water rights in the Basin are administered by the States of Arizona, Colorado, New Mexico, and Utah according to State water law and to the interstate compacts that divide the use of the waters of the Colorado River and its tributaries among the Colorado River Basin States. Some of the interstate compacts affecting the distribution of the water in the Basin are briefly summarized below:

- (1) *Colorado River Compact*⁸ – Divides the Colorado River Basin at Lee Ferry, Arizona, into the Upper and Lower Basins, apportions to the Upper Basin the right to the beneficial consumptive use of 7.5 million acre-feet (MAF) per annum, and requires the States of the Upper Basin to not cause the flow at Lee Ferry to be depleted below a total of 75 MAF for any period of 10 consecutive years.
- (2) *Upper Colorado River Basin Compact* – Subject to the provisions and limitations contained in the Colorado River Compact, the Upper Colorado River Basin Compact, among other things, divides consumptive use, apportions to, and makes available for use each year by the Upper Basin States, amounts as follows:

⁸ It should be noted that the Navajo Nation interprets that the allocations in the 1922 Colorado River Compact and the 1948 Upper Colorado River Basin Compact do not limit the Navajo Nation's claim to water within the Colorado River system. Not all States agree with this interpretation.

- Arizona – 50,000 acre-feet per annum, and

The amount remaining after deduction of use made in Arizona:

- Colorado – 51.75 percent
- New Mexico – 11.25 percent
- Utah – 23 percent
- Wyoming – 14 percent

The Upper Colorado River Basin Compact (Article XIV) apportions the water of the San Juan River and its tributaries in Colorado and New Mexico between the States of Colorado and New Mexico. In short, within the limitations described in Article XIV, the State of Colorado agrees to deliver to New Mexico from the San Juan River and its tributaries water sufficient to enable New Mexico to make full use of its compact apportionment subject to satisfaction first of water uses made at the time the compact was signed and water uses contemplated by water projects authorized at the time the compact was signed.

- (3) *La Plata River Compact* – This compact divides the waters of the La Plata River between the States of Colorado and New Mexico. In summary, each day during the period February 16 through November 30 of each year, Colorado is to deliver to New Mexico 100 cfs, or an amount equivalent to one-half of the mean daily flow at the Hesperus Station, for the preceding day, or the amount of water then needed for beneficial use in the State of New Mexico, whichever is less.
- (4) *Animas-La Plata Compact* – This compact states that the water rights to store and divert water in Colorado for ALP uses in New Mexico shall be of equal priority with those rights granted by the Colorado State courts for ALP Project water uses in Colorado.

RESPONSIBILITIES AND COMPLIANCE

Environmental

Clean Air Act (42 U.S.C. 7401 et seq.)

Clean Water Act of 1972 (33 U.S.C. 1251 et seq.)

Endangered Species Act of 1973 (16 U.S.C. 1532 et seq.)

Fish and Wildlife Coordination Act (48 Stat., as amended; 16 U.S.C. 661)

National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.)

Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1532 et seq.)
Executive Order 11988, Floodplain Management, 1977
Executive Order 11990, Protection of Wetlands, 1977
Executive Order 11991, Protection and Enhancement of Environmental Quality, 1977

Cultural Preservation

Archaeological and Historic Preservation Act (16 U.S.C. 469 et seq.)
Archaeological Resources Protection Act of 1979 (16 U.S.C. 470 et seq.)
Historic Sites, Buildings, and Antiquities Act (16 U.S.C. 461 et seq.)
National Historic Preservation Act (16 U.S.C. 470 et seq.)
Executive Order 11593, Protection and Enhancement of the Cultural Environment, 1971

American Indian

American Indian Religious Freedom Act of 1978, as amended (42 U.S.C. 1996)
Native American Graves Protection and Repatriation Act of 1990
(25 U.S.C. 3001 et seq.)
Religious Freedom Restoration Act of 1993 (P.L. 13-141)
Executive Order 13007 (Indian Sacred Sites)
Secretarial Orders 13175 and 3206 on Indian Trust Assets
General Allotment Act of 1877 (24 Stat. 388, chapter 119, 25 USCA 331)

Other

Executive Order 12898, Environmental Justice in Minority Populations and Low Income Populations, 1994
Reclamation Reform Act of 1982 (P.L. 97-293, Title II, 96 Stat. 1263)
Applicable State and Tribal laws implementing the Federal laws identified above

DOCUMENT REVIEW

Reclamation's Notice of Intent to prepare the planning report/draft environmental impact statement (PR/DEIS) was published in the *Federal Register* on March 27, 2000. Scoping meetings were held in five locations on the following dates:

Location	Dates (during 2000)
Crownpoint, New Mexico	April 25
Saint Michaels, Arizona	April 26
Gallup, New Mexico	April 27
Shiprock, New Mexico	May 2
Farmington, New Mexico	May 3

The written responses were reviewed by Reclamation and incorporated in the PR/DEIS when they were within the scope of the Federal action. The PR/DEIS was reviewed by cooperating agencies. The PR/DEIS Notice of Availability for a 90-day public review and comment period was published in the *Federal Register* on March 30, 2007, which included an announcement of public hearings. The 90-day comment period was from March 30, 2007, to June 28, 2007. Public hearings were held at five locations on the following dates:

Location	Dates (during 2007)
Gallup, New Mexico	May 22
Crownpoint, New Mexico	May 23
Saint Michaels, Arizona	May 24
Shiprock, New Mexico	June 5
Farmington, New Mexico	June 6

During the public review and comment period, oral testimony and written comments were received. Written responses to comments are published as volume III of this PR/FEIS.

In November 2007, several sections of the PR/DEIS were updated in a report entitled, *Cost and Economic Update to 2007 Prices of the Planning Report and Draft Environmental Impact Statement*. All entities on the mailing list were either sent copies of the cost and economic update report or post cards notifying them of the report's availability. The updated cost and economic information is included in this PR/FEIS. Responses to substantive comments will be incorporated in the ROD, which concludes the NEPA process.

Copies of this document and volume II (appendices) are available at Reclamation's Western Colorado Area Offices in Durango and Grand Junction, Colorado; the Upper Colorado Regional Office, Salt Lake City, Utah; Technical Service Center, Denver, Colorado; and at area public libraries. The PR/FEIS is also available at <http://www.usbr.gov/uc> (select "Environmental Documents"). The PR/DEIS and PR/FEIS were mailed to individuals and parties listed on Reclamation's environmental impact statement distribution list (see chapter VII).

DOCUMENT ORGANIZATION

This PR/FEIS includes three volumes. This document is volume I, the technical appendices constitute volume II, and volume III contains written and public hearing comments with agency responses.

Volume I includes:

- **Executive Summary**
- **Chapter I – Introduction**, discusses the general purpose of the proposed project; its location, background, and authorization; and such topics as project coordination, previous studies, related actions, and compliance.
- **Chapter II – Need for Action**, describes the problems this PR/FEIS addresses.
- **Chapter III – Opportunities/Resources and Constraints**, cites resources available to complete the proposed project as well as institutional, technical, and other barriers to its implementation.
- **Chapter IV – Alternatives**, describes earlier planning for the proposed project, standards for plans, various screening/selection criteria, the concept of four-account analysis, and plan selection.
- **Chapter V – Affected Environment and Environmental Consequences**, describes the affected environment and the potential impacts of the alternatives (compared to the No Action Alternative) on each of the environmental parameters. Proposed mitigation measures, if any, are included. Indirect effects and cumulative, connected, and similar actions are also described.
- **Chapter VI – Environmental Commitments and Mitigation Measures**, describes potential environmental commitments associated with implementing the preferred alternative.

- **Chapter VII – Consultation and Coordination**, summarizes the public involvement/scoping process and agency coordination.
- **Chapter VIII – Permits, Approvals, and Regulatory Requirements**, discusses the permits, approvals, and regulatory requirements necessary for the construction, operation, and maintenance of the preferred alternative.
- **Attachments A – P**
 - A** Memorandum of Agreement between the city of Gallup and the Navajo Nation to Cooperate on the Navajo-Gallup Water Supply Project (IGRF-33-98)
 - B** Memorandum of Understanding between the Navajo Nation and the City of Gallup Concerning Water Supplies for the Navajo-Gallup Water Supply Project (October 2007)
 - C** Resolution of the Resources Committee of the Navajo Nation Council
 - D** Resolutions of the Navajo Nation Chapters
 - E** Resolutions of the Upper Colorado River Commission
 - F** Letter from Jicarilla Apache Tribe to the Bureau of Reclamation (February 16, 2001)
 - G** Letter from Honorable Kelsey A. Begaye, President of the Navajo Nation, and Honorable John Peña, Mayor of the city of Gallup, to Eluid Martinez, Commissioner of the Bureau of Reclamation (November 22, 2000)
 - H** Letters from Eluid L. Martinez, Commissioner of the Bureau of Reclamation (December 26, 2000), and Rick L. Gold, Regional Director, Upper Colorado Regional Office, to Honorable Kelsey A. Begaye, President of the Navajo Nation, and Honorable John Peña, Mayor of the city of Gallup (June 13, 2001)
 - I** Preferred Alternative
 - J** Screening Report
 - K** Vegetation
 - L** List of Wildlife Found in the Project Area and Habitat Associations

- M** Soil and Geology Descriptions
- N** Hydrologic Determination, 2007, Water Availability from Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico
- O** Principles for Conducting Endangered Species Act Section 7 Consultations on Water Development and Water Management Activities Affecting Endangered Fish Species in the San Juan River Basin
- P** Northwestern New Mexico Rural Water Projects Act (Public Law 111-11, title X, subtitle B)

Volume II includes appendices A – D

- A** Technical Memorandum (Final Draft – March 16, 2001)
- B** Appraisal Level Designs and Cost Estimates (April 2002)
- C**
 - Part I* Fish and Wildlife Service Memorandum (December 3, 2002)
Planning Aid Memorandum for the Navajo-Gallup Water Supply Project Environmental Impact Statement (EIS), New Mexico
 - Part II* Fish and Wildlife Service Memorandum (March 16, 2009)
Draft Fish and Wildlife Coordination Act Report for the Navajo-Gallup Water Supply Project, New Mexico and Arizona
 - Part III* Final Biological Opinion (February 26, 2009)
- D**
 - Part I* Allocation of Capital and OM&R Costs Among Project Participants (San Juan River - PNM Alternative)
 - Part II* Economic Benefit/Cost Analysis
 - Part III* Financial and Repayment Analysis
 - Part IV* Social Impacts from the Navajo-Gallup Water Supply Project

Volume III includes:

- Comments and Responses