

# PNM Fish Passage

FINAL ENVIRONMENTAL ASSESSMENT

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*Endangered Fish Passage at the  
Public Service Company of New Mexico (PNM)  
Diversion Dam on the San Juan River*

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**United States Department of the Interior  
Bureau of Reclamation**



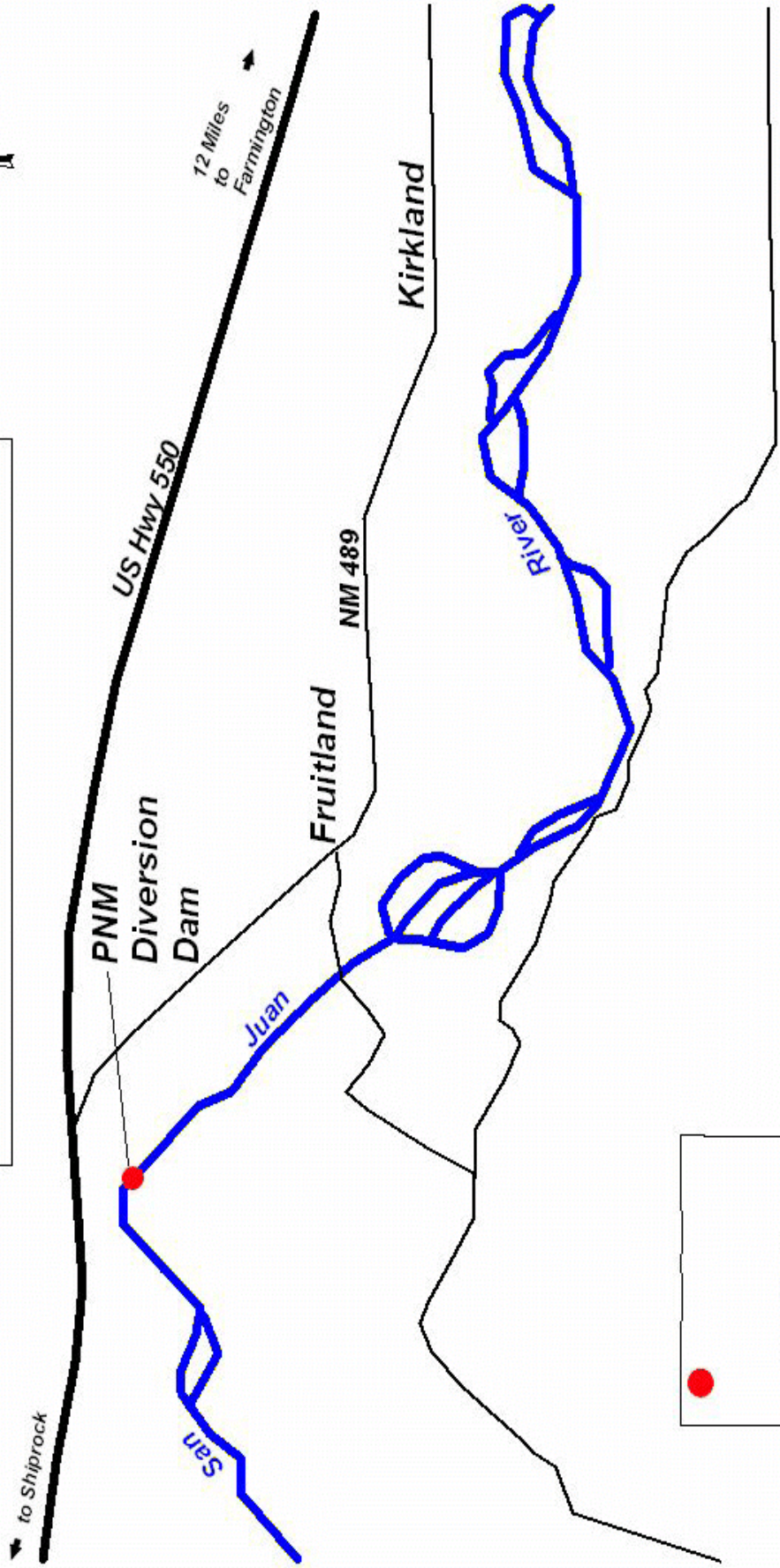
Upper Colorado Region  
Western Colorado Area Office  
Grand Junction, Colorado

October 2001





**Public Service Company  
of New Mexico Diversion Dam  
Project Site**





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# CHAPTER 1 - INTRODUCTION

## Need for and Purpose of Action

This Final Environmental Assessment (EA) discusses providing endangered fish passage at the Public Service Company of New Mexico (PNM) Diversion Dam on the San Juan River in San Juan County, New Mexico. The U.S. Bureau of Reclamation (Reclamation) prepared this EA in cooperation with the U.S. Fish and Wildlife Service (Service) to comply with the National Environmental Policy Act (NEPA), Endangered Species Act, and related U.S. Department of the Interior policies and regulations. If, based on this analysis, Reclamation concludes the proposed action would have no significant impact on the human environment, preparation of an Environmental Impact Statement would not be required before the action could be implemented.

A need has been identified by the San Juan River Basin Recovery Implementation Program (SJRRIP) to restore endangered fish passage upstream past the PNM Diversion Dam. The purpose of establishing fish passage would be to protect and recover native Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*) populations in the San Juan Basin while water development proceeds in compliance with all applicable federal and state laws, including fulfillment of federal trust responsibilities to the Southern Ute Indian Tribe, Ute Mountain Ute Tribe, Jicarilla Apache Nation and the Navajo Nation. In addition, other native fish species would benefit from restored passage.

## Public Service Company of New Mexico Diversion Dam

The PNM Diversion Dam (see Figure 1) was constructed in 1971. The 3.25-foot high diversion dam (weir) is located on the San Juan River about 12 miles downstream of Farmington, New Mexico near the



**Figure 1 - Public Service Company of New Mexico Diversion Dam**

town of Fruitland at River Mile 166.6. Facilities at the diversion include a concrete weir, a series of screened intake structures, an intake channel, a settling channel, and a pump house.

Water flows over the dam into a stilling basin created by a concrete apron. The stilling basin is the width of the river. The presence of the dam and the basin creates a barrier to fish moving upstream. As flows increase, the difference in the upstream and downstream water levels is reduced. Although water levels are reduced, water velocities increase and the weir provides an impediment to upstream fish movement. Recovery studies conducted as part of the SJRRIP have shown that some fish are able to move upstream past the weir but their specific method of movement is not known and the number of fish discouraged from upstream movement by the presence of the weir is also unknown. One possible method of upstream movement could occur during high river flows. When the flow in the San Juan River is above 7,000 cfs, some of the flow goes around the dam making it possible for fish to move around the dam.

A 4-foot by 6-foot sluiceway in the weir located on the north side of the river, is used to sluice the inlet structure of sediment. Normal sluice gate operations have the sluice gate open between 8 and 12 inches. Trash racks and isolation gates are located at the point of diversion. A concrete settling channel about 490 feet long conveys river water to the pump house or returns it to the river (Figure 2). Diverted water moves through traveling screens to three pumps, together they are capable of pumping a maximum of 17,000 gallons per minute (37 cfs) to a 110-acre storage reservoir. From the storage reservoir, the water is pumped to San Juan Generating Station (SJGS).

The facility provides an average of approximately 1 million gallons of water per hour (24,200 acre-feet per year) to PNM for cooling operations for the SJGS (Tetra-Tech 2000).

## **San Juan River Recovery Implementation Program**

Federal and State agencies, water users and Indian Tribes have been cooperating in the San Juan River Basin Recovery Implementation Program (SJRRIP). Established in 1991, the SJRRIP is comprised of a partnership between the Jicarilla Apache Nation, Navajo Nation, Southern Ute Indian Tribe, Ute Mountain Ute Tribe, States of Colorado and New Mexico, U.S. Bureau of Indian Affairs, U.S. Bureau of Land Management, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, and water development interests. The goal of the SJRRIP is twofold:

- 1) To conserve populations of Colorado pikeminnow (formerly known as Colorado squawfish) and razorback sucker in the basin, consistent with the recovery goals established under the Endangered Species Act, 16 U.S.C. 1531 et seq., and
- 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.



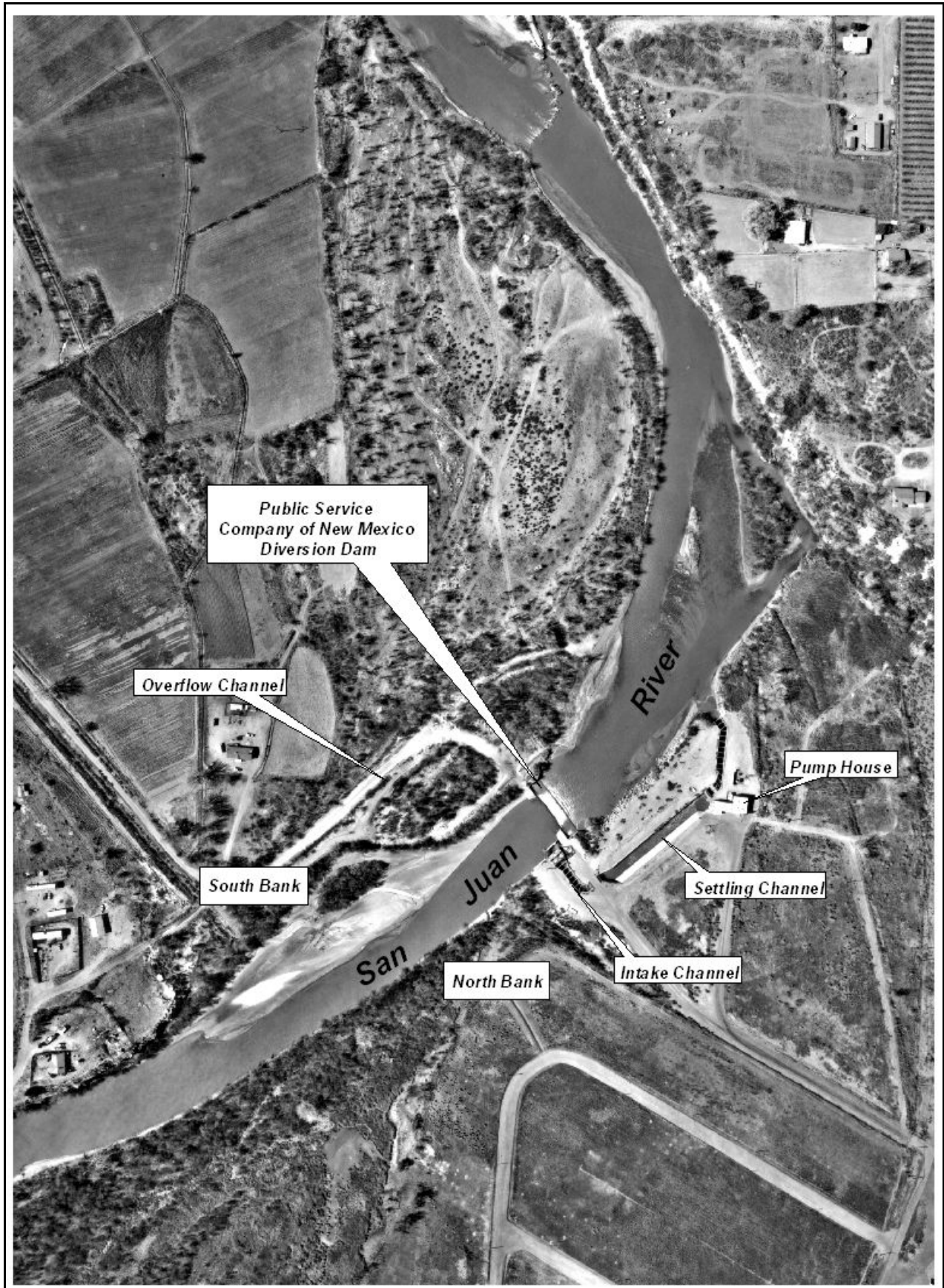


Figure 2. - San Juan Generating Station Facilities

Program elements include the following:

- 1) Protection of genetic integrity, management and augmentation of populations,
- 2) Protection, management, and augmentation of habitat involving identifying important reaches of the San Juan River for different life stages of the endangered fish,
- 3) Water quality protection and enhancement,
- 4) Interactions between native and non-native fish species involving determining the distribution and abundance of non-native species,
- 5) Monitoring and data management to evaluate status and trends of endangered fish species as well as other native and non-native species and to define the overall success of the SJRRIP.

A seven-year research program was completed by the SJRRIP and flow recommendations were approved by SJRRIP in 1999.

The Bureau of Indian Affairs (BIA) is restoring fish passage at the Hogback and Cudei Diversions each of which are downstream of PNM on the San Juan River.

## Scoping

Reclamation identified issues or concerns with participation from individuals, agencies, and organizations who may be affected by the project and developed three alternatives. These alternatives are discussed in Chapter 2: **No Action, Preferred Alternative (South Fish Passage), and North Fish Passage Alternative**. The proposed action is to provide fish passage (allowing native fish to migrate upstream) while maintaining selective passage (fish trap) to prevent non-native species movement.

Each issue and concern described below is discussed in Chapter 3. More information on scoping activities is included in Chapter 4.

## Water Resources

**Diversion Dam Operations and Water Rights** - The diversion dam is used year-round to divert water for operations of the SJGS. Operation of the fish passage facilities must not interfere with the operation of the dam or affect the ability to divert water by PNM. PNM also needs to maintain access for operations of the diversion facility.

**Water Quality** - Construction of the fish passage structure could temporarily affect water quality downstream from the dam and the ability of domestic water providers to meet drinking water standards.

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## Land and Facility Resources

**Access** - Before any modifications to the dam, intake channel, or the adjoining land could be made, agreements would be needed from the Public Service Company of New Mexico and the Navajo Nation to access the site and/or use their land and facilities.

**Flooding** - The land upstream from the PNM Diversion Dam experiences flooding during higher river stages. The construction of the fish passage should not increase the magnitude or frequency of flooding.

## Unique Geographical Features

**Floodplain and Wetlands Protection** - The San Juan River provides highly valued riparian habitat and floodplain functions that need to be considered as fish passage is restored.

## Fish and Wildlife Resources

**Effects on Endangered San Juan River Fishes** - Providing passage at the dam is needed to allow endangered fish access to upstream habitat. Restoring passage complements other SJRRIP efforts such as stocking endangered fish, meeting flow recommendations, controlling competition or predation by non-native fish, and restoring habitat.

## Cultural Resources

**Archaeological Resource Protection** -Historic and archaeological resource surveys identified no resources eligible for listing. The Navajo Nation was included in the consultation.

## Social, Economic, and Recreation Resources

**Power Generation**- The PNM Diversion Dam diverts water for the San Juan Generating Plant. Construction and operation of the fish passage and fish screen must not affect the ability to divert water for the use at the plant.

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## CHAPTER 2 - ALTERNATIVES

This chapter describes alternatives for providing fish passage at the PNM Diversion Dam. Alternatives are as follows: 1) **No Action**, 2) **Preferred Alternative (South Fish Passage)**, and 3) **North Fish Passage Alternative**. In addition, an **Overflow Channel Fish Barrier Option** is being considered with each alternative, which is discussed at the end of this chapter.

Tetra Tech ISG's Breckenridge, Colorado office was contracted by Reclamation in 2000 to develop design alternatives to allow for fish passage at the PNM Diversion Dam (Tetra Tech 2000). All fish passage alternatives were designed based on the behavior of the endangered fish, their swimming abilities, dam operation and maintenance needs, and the need to not interfere with diversions for the SJGS.

### **No Action Alternative**

Under this alternative, the SJRRIP would not take action to provide for endangered fish passage at the PNM Diversion Dam. The dam would remain unaltered and continue to be a barrier to upstream passage by endangered fish species.

### **Preferred Alternative (South Fish Passage)**

Under the preferred alternative, Reclamation acting on behalf of the SJRRIP, would construct a fish passage around the PNM Diversion Dam on the south bank of the San Juan River using boulders to create a riffle and pool sequence (Figure 3). The fish passage would be approximately 400 feet in length. The fish passage entrance would be located downstream of the dam's stilling basin and existing wingwall about 20 to 30 feet below the white water. The fish passage exit would be located about 200 feet upstream of the dam and would contain a fish trap to prevent fish from returning to the river (selective fish passage). Fish would be manually sorted and native fish would be returned to the river via a return pipe, while non-native fish would be removed. The passage would consist of a channel with placed boulders to create a series of boulder drops and stilling pools (Tetra-Tech 2000).

The boulder drops would create the baffle sections between each pool. A typical boulder baffle would include several large boulders, about 4 feet in diameter placed in the center of the channel section with about 18 inch spacing between each boulder. Smaller rock material would line the rest of the channel. During normal flow conditions, upstream of each boulder baffle would be a pool that would be 2 to 4 feet deep. Water surface levels from one pool to the next would drop about 0.25 feet. Maximum velocities would be about 2.7 to 2.9 fps with about 1.35% slope (Tetra-Tech 2000). The current conceptual design would maintain a minimum water depth of 1.5 feet in the fish passage.

The preferred alternative also includes sorting facilities consisting of a trap, crane, storage shed, and sorting table. Portable power would be used to operate the crane and fish sorting facilities. Fencing at the site would also be required (Tetra-Tech 2000). PNM needs temporary access across the fish passage and the PNM Diversion Dam. PNM crosses the dam when replacement transformers are shipped by rail for the SJGS. The transformers are too large to use the existing bridge near Fruitland to cross the San Juan River. Because of the infrequency of replacing the transformers, it is



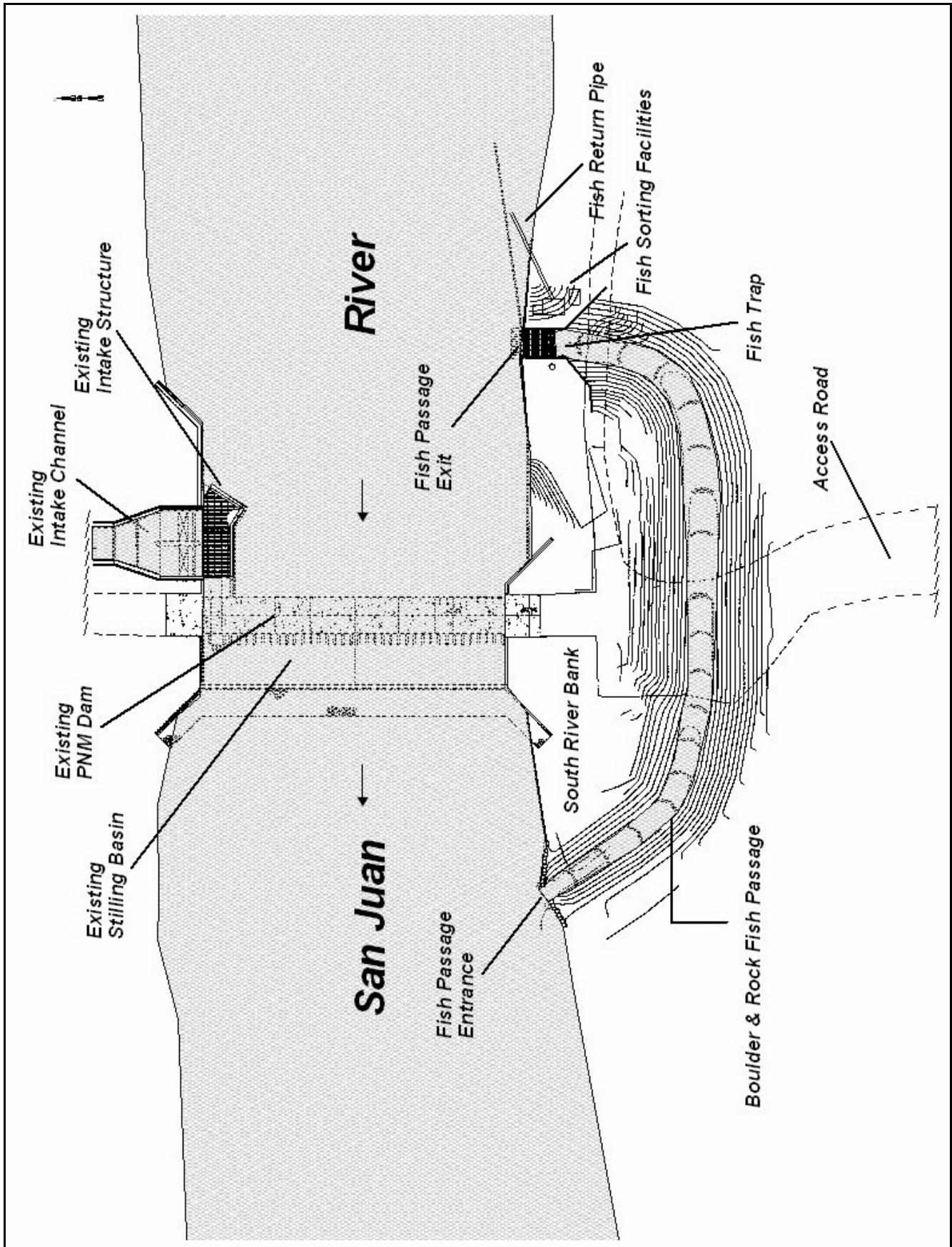


Figure 3. - South Fish Passage Alternative Conceptual Drawing

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recommended that when crossing the fish passage becomes necessary, the fish passage structure be temporarily closed and filled with material rather than constructing a deck bridge across the fish passage of adequate size to support the transformers.

Preliminary construction cost is estimated to be about \$605,000.00. Maintenance costs are estimated to be about \$73,200.00 annually.

## **North Fish Passage Alternative**

Under the North Fish Passage Alternative, Reclamation acting on behalf of the SJRRIP, would construct a fish passage around the PNM Diversion Dam on the north bank of the San Juan River (Figure 4 ). The fish passage would be a concrete and baffle channel type fish passage structure. The fish passage entrance would be located downstream of the dam apron and existing wingwall, approximately 20 to 30 feet below the white water being created at the apron toe. Natural lighting would be used to light the fish passage. Grating would be installed over the top of the structure to prevent trash and debris from entering during flood events. Experimental grouted river rock may be installed on the passage floor to provide diversity in flow velocities, including pockets of low velocities to serve as resting areas. Maximum average velocities in the steeper sections of the passage would reach 3 fps (Tetra-Tech, 2000). Two baffle types have been proposed; the chevron baffle and a vertical slot style baffle.

The passage alignment would run from the fish entrance at the downstream end of the diversion around the northwest wing wall and under the PNM intake channel. The passage would be set low enough to cross under PNM's intake channel and maintain an acceptable grade between the upstream and downstream ends of the channel. Crossing through the diversion is not feasible because it would create a significant obstruction inside the channel and hinder diversion operations and maintenance (Tetra-Tech 2000). The North Fish Passage Alternative would also include selective fish passage features to prevent non-natives from moving upstream of the diversion dam.

Preliminary construction costs are estimated to be about \$1,228,000.00. Maintenance costs are estimated to be about \$24,400.00 annually.

## **Overflow Channel Fish Passage Barrier Option**

A "Texas Crossing" (about 2-feet high, 12 feet-wide concrete apron) would be constructed across a low-lying area (Overflow Channel) of the river bank on the south side of the river just upstream of the PNM diversion (See Figure 2). The bank reportedly overtops when flows in the main river channel reach about 7,000 cfs and water passes around the diversion dam (Tetra-Tech 2000). The SJRRIP flow recommendations at the Shiprock gage include flows of 10,000 cfs for 5 days and 8,000 cfs for 10 days per year. These higher flow events could provide an opportunity for non-native fish to move upstream of the diversion dam. The overflow fish barrier would prevent non-natives from using the overflow channel to move upstream and is include in both the Preferred and North Passage Alternatives. Preliminary construction costs are estimated to be about \$16,000.00.





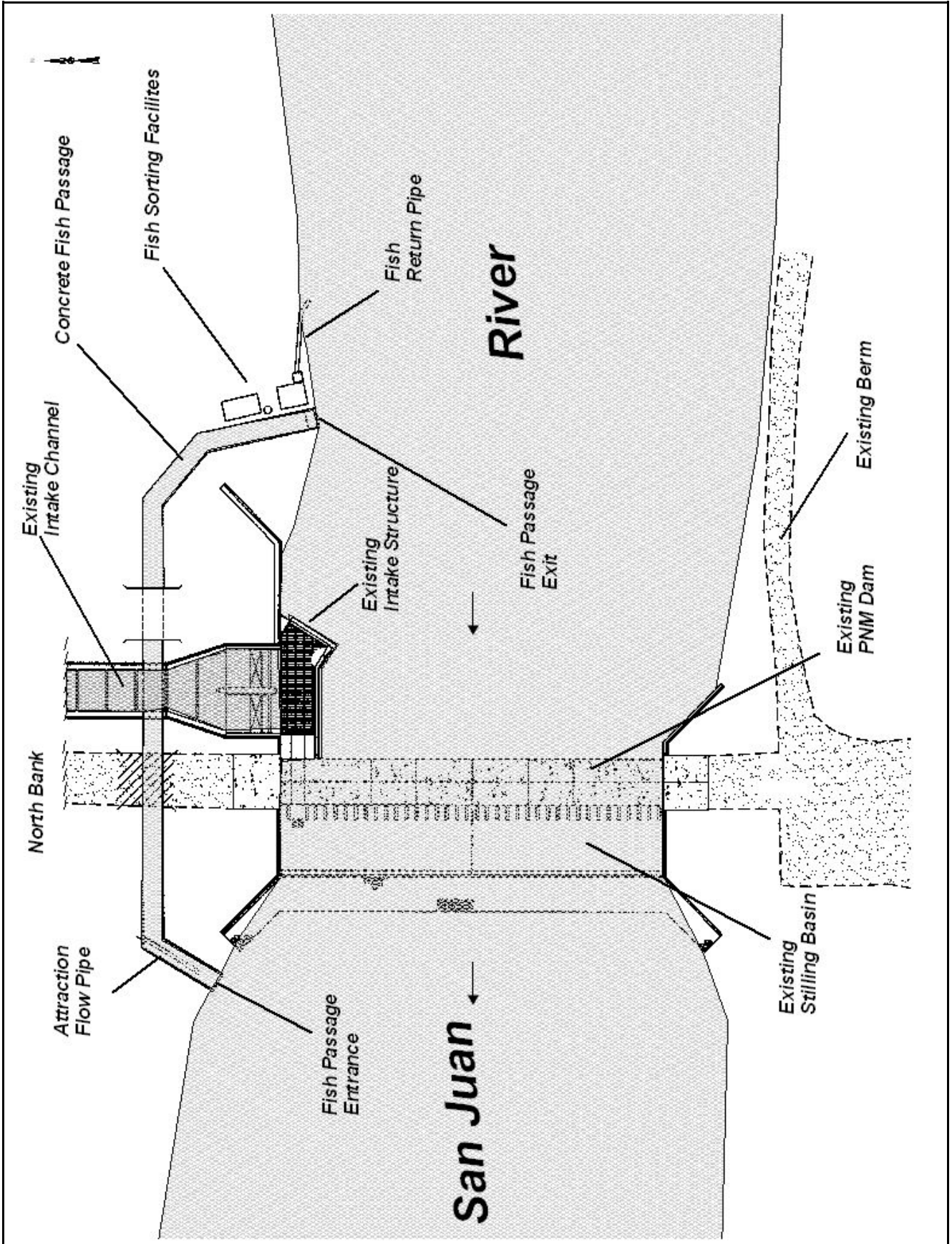


Figure 4. - North Fish Passage Alternative Conceptual Drawing

## Comparison of Alternatives

With the No Action alternative, a fish passage structure would not be built at the PNM Diversion Dam. Fish passage would continue to be restricted for endangered fishes. Under the Preferred and North Fish Passage Alternatives, fish passage structures would be constructed at the PNM Diversion Dam. The Preferred Alternative is located on the south bank of the San Juan River and would be located on land leased to the Public Service Company of New Mexico by the Navajo Nation. The North Fish Passage Alternative would be constructed on the north bank of the San Juan River which is owned by the Public Service Company of New Mexico.

## Environmental Commitments

The proposed action includes measures needed to:

- ensure ease of fish movement and selectively reduce upstream passage of non-native fish,
- maintain PNM's ability to divert 24,200 acre-feet per year of water under contract with the United States and the Broken Hill Properties for use at the San Juan Generating Plant,
- protect water quality in the San Juan River,
- ensure that an increase in magnitude or frequency of upstream flooding would not occur as a result of the construction or operation of the fish passage,
- maintain PNM and Navajo Nation access to their properties and facilities, and
- limit disturbance to riparian areas and protect mature cottonwood trees.

The degree to which proposed measures would alleviate concerns for potentially affected resources and interests are discussed within the applicable sections of the next chapter.

To comply with requirements of the Endangered Species Act and the Fish and Wildlife Coordination Act, the federal agencies of the SJRRIP (Reclamation, BIA, and Service), consulted with the Service on the Proposed Action. Formal consultation was initiated and an incidental take statement was issued for the construction and operation of the fish passage.

Reclamation will request permits under the Clean Water Act before beginning work in the river. 401 Certification from the State of New Mexico and Environmental Protection Agency (Navajo Nation) will also be requested. If dewatering is required, the contractor will be required to obtain a construction dewatering permit from the State of New Mexico. Permit conditions will be environmental commitments for either fish passage action.

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Construction and operation and maintenance easements and/or rights-of-ways would be required from the Navajo Nation and Public Service Company of New Mexico to construct the fish passage. Permit conditions would also be included as environmental commitments.

# CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

## General

This chapter discusses resources that may be affected by actions taken to provide fish passage at the Public Service Company of New Mexico's Diversion Dam. During preparation of this Final EA, information on issues and concerns were received from affected water users, resource agencies, private interests, recreational interest groups and citizens, and other parties (see Chapter 4, Consultation and Coordination, for further details).

For each resource, the potentially affected area and/or interests are identified, existing conditions are described, and impacts expected under the No Action, Preferred Alternative (South Fish Passage) and North Fish Passage Alternative are discussed.

The project is located in San Juan County, New Mexico along the San Juan River approximately 1 mile west of the town of Fruitland, New Mexico. San Juan County has a population of approximately 110,000 (State of New Mexico 2000) and Farmington, the largest city in the area, was founded in the 1870's. Fruitland is a small farming community of approximately 700 people.

## Colorado River Storage Project

Between 1958 and 1963, Reclamation constructed Navajo Dam on the San Juan River as part of the Colorado River Storage Project (CRSP). The CRSP provides for the comprehensive development of the Upper Colorado River Basin. The project furnishes the long-term regulatory storage needed to allow States in the upper basin to meet their flow obligation at Lees Ferry, Arizona, as defined in the Colorado River Compact, and still utilize their apportioned water. Water stored by the project provides a portion for direct use in the upper basin. Sediment and flooding are better controlled; and recreation development and fish and wildlife conservation for some species have benefitted. The project produces a significant amount of hydroelectric power to meet the needs of the upper basin and adjacent areas.

The CRSP includes four storage units: Glen Canyon on the Colorado River in Arizona near the Utah border; Flaming Gorge on the Green River in Utah near the Wyoming border; Navajo on the San Juan River in New Mexico and Colorado; and the Wayne N. Aspinall Storage Unit on the Gunnison River in west-central Colorado. Authorized with, but not part of, are a number of participating projects which share in the power revenues of the larger project to help pay for irrigation construction costs.

Navajo Reservoir extends 35 miles up the San Juan River, 13 miles up the Pine River, and 4 miles up the Piedra River in southern Colorado. When filled, the surface area of the reservoir occupies 15,610 acres, with a total capacity of 1,708,600 acre-feet and an active capacity of 1,036,100 acre-feet (USDI 1981). An environmental impact statement is being prepared to evaluate the

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environmental, social and economic impacts of modifying Navajo Dam operations to meet the recommendations for the San Juan River downstream of Farmington through the reaches of designated critical habitat for two fish species listed as endangered under the Endangered Species Act, or reasonable alternative to the flow recommendations.

## **Water Resources**

### **Water Rights and Use**

The PNM Diversion Dam has the ability to annually divert approximately 24,200 acre-feet of water for use at the SJGS. The SJGS obtains water from two existing contracts. A total 16,200 acre-feet is diverted under a contract with the Bureau of Reclamation and 8,000 acre-feet can be diverted under a contract with Utah International Inc. (now Broken Hill Properties Ltd (BHP)). The BHP agreement is effective as long as SJGS is operational.

The water contract with Reclamation expires on December 31, 2005 and PNM has proposed to enter into a subcontract with the Jicarilla Apache Nation for 16,200 acre-feet of Jicarilla Contract Rights from Navajo Reservoir on terms mutually agreed to by both parties for a term beginning January 1, 2006 and ending December 31, 2022. This water would replace the water currently under contract with the Bureau of Reclamation. A separate environmental assessment is being prepared by Reclamation for the Jicarilla subcontract.

The Navajo Nation diverts water for irrigation from Navajo reservoir as part of the Navajo Indian Irrigation Project. Downstream of the PNM diversion, the Hogback and Cudei diversion structures maintained by the Bureau of Indian Affairs divert additional irrigation water. The Bureau of Indian Affairs prepared an environmental assessment on these structures (BIA 2000), and restored endangered fish passage in 2001.

The No Action alternative could affect the Jicarilla Apache Nation Water Sub-Contract because the Biological Opinion issued for the contract is based on the SJRRIP restoring fish passage at the PNM Diversion Dam (See Threatened and Endangered Species Section). The No Action alternative would have no direct effect on other water rights and uses. However, taking no action could indirectly result in failure to make sufficient progress in SJRRIP efforts to restore endangered fish populations. This could trigger future compliance requirements under the Endangered Species Act, which in turn could put water users at risk of assuming responsibility for such compliance.

Providing fish passage at the PNM Diversion Dam would have no long term affect on the water users' ability to fully use their water rights. If flows in the San Juan River fall below 500 cfs, the fish passage may become inoperable; however, PNM may be able to continue to divert water. The Preferred Alternative and North Fish Passage Alternative would require about 100 cfs to operate the fish passage facility. Flows to operate the fish passage would be non-consumptive.

## Chapter 3 — Affected Environment and Environmental Consequences

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Under the North Fish Passage Alternative alignment, the fish passage would cross underneath PNM's existing intake channel. This may require temporary closure of the intake facility, requiring temporary pumping while the portion of the passage crossing under the intake channel is constructed. Currently, PNM operates with approximately 20 days of storage in its water storage ponds. Appropriate measures would be required if the fish passage construction affects PNM's ability to maintain adequate water storage for the SJGS.

Additional operation and maintenance work would also be required for the fish passage; however, the funding and responsibility for these activities would be provided by the SJRRIP.

### **Water Quality**

Since May 1983, the SJGS has operated as a National Pollutant Discharge Eliminated System (NPDES) permitted zero liquid discharge facility. None of the fish passage alternatives would alter SJGS's operations.

Fish passage construction (Preferred and North Fish Passage Alternatives) could cause temporary water quality changes downstream by increasing turbidity. There are no known downstream diversions used for domestic water, therefore, no impacts are projected for drinking water supplies. Best management practices (BMPs) during construction would be implemented to reduce the amount of sediment introduced into the river during construction. Water Quality Certifications and "dredge and fill" permits under the Clean Water Act Section 401 and 404 would be required from the Army Corp of Engineers, the State of New Mexico, and the Environmental Protection Agency (Navajo Nation) for the Preferred and North Fish Passage Alternatives.

## **Fish and Wildlife Resources**

### **Aquatic Resources**

In the vicinity of the PNM Diversion Dam, the San Juan River historically provided warmwater habitat to the aquatic community. Since Navajo Dam began operation in 1962, releases of water from the bottom of the reservoir have changed the character of the river from Navajo Dam to Farmington. The San Juan River below the Navajo Dam has been studied for the SJRRIP. The most abundant species collected in the reach of river from Farmington to the PNM Diversion Dam include flannel mouth sucker, bluehead sucker, common carp, speckled dace and channel catfish (Ryden and Pfeifer 1994). Flathead minnow and red shiners are also known to occur in the vicinity of the PNM Diversion Dam (NMGFD 1995). The diversion dam presents a potential obstruction to upstream fish movement. The pump station intake is screened with traveling screens. It is assumed that these screens will prevent entrainment of most life stages of fish.

Under the No Action Alternative, the diversion dam would continue to be a barrier to upstream fish movement. The Preferred Alternative and North Fish Passage Alternatives would restore fish



**Table 1 - Navajo Nation Species of Concern**

Species	Status	Habitat Type	Type of Project Impact Projected
Bluehead sucker ( <i>Catostomus discobolus</i> )	NESL Group 4	San Juan River	Restored selective passage (Beneficial)
Flannelmouth sucker ( <i>Catostomus latipinnis</i> )	None	San Juan River	Restored selective passage (Beneficial)
Mottled sculpin ( <i>Cottus bairdi</i> )	NESL Group 4	San Juan River	Restored selective passage (Beneficial)
Roundtail chub ( <i>Gila robusta</i> )	NESL Group 2	San Juan River	Restored selective passage (Beneficial)
Colorado pikeminnow ( <i>Ptychocheilus lucius</i> )	NESL Group 2 ESA Endangered	San Juan River	Restored selective passage (Beneficial)
Speckled dace ( <i>Rhinichthys osculus</i> )	None	San Juan River	Restored selective passage (Beneficial)
Razorback sucker ( <i>Xyrauchen texanus</i> )	NESL Group 2 ESA Endangered	San Juan River	Restored selective passage (Beneficial)
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	NESL Group 2 ESA Endangered	Cottonwood Riparian Winter Migrant	<b>Temporary displacement during construction</b>
Mesa Verde cactus ( <i>Sclerocactus mesae-verdae</i> )	NESL Group 3 ESA Endangered	Upland	None
Mancos saltbrush ( <i>Proatriplex pleiantha</i> )	None	Upland	None
Golden eagle ( <i>aquila chrysaetos</i> )	NESL Group 3	Upland	None
Rough-legged hawk ( <i>Buteo lagopus</i> )	None	Upland	None
Ferruginous hawk ( <i>Buteo regalis</i> )	None	Upland	None
Mountain plover ( <i>Chararius montanus</i> )	NESL Group 4 ESA Candidate		None
Southwestern willow flycatcher ( <i>Empidonax traillii extimus</i> )	NESL Group 2 ESA Endangered	Riparian/Wetland	None
Peregrine falcon ( <i>Falco peregrinus</i> )	NESL Group 2	Upland	None
Black-footed ferret ( <i>Mustela nigripes</i> )	NESL Group 2 ESA Endangered	Upland	None
Northern leopard frog ( <i>Rana pipiens</i> )	NESL Group 2	Riparian/Wetland	None
Mancos milk-vetch ( <i>Astragalus humillimus</i> )	NESL Group 2	Upland	None
Monument Valley milk-vetch ( <i>Astragalus monumentalis</i> )	None	Upland	None
Cottam milk-vetch ( <i>Astragalus monumentalis cottamii</i> )	None	Upland	None
Splendid scorpion weed ( <i>Phacelia splendens</i> )	None	Upland	None

passage. Under all alternatives, it is assumed the traveling screen use would continue to prevent fish entrainment for most life stages.

### Wildlife Resources

Wildlife resources within the project area include those species commonly associated with riparian habitats. The Navajo Nation Natural Heritage Program (2000) provided a list of species of concern that may occur within the project area (Table 1). Wildlife may be temporarily displaced during construction under the Preferred and North Passage Alternatives, however, long term effects are not predicted.

### Threatened and Endangered Species

A biological assessment for fish passage at PNM was prepared pursuant to Section 7 of the Endangered Species Act of 1973, as amended (Appendix A). The Service provided a list of endangered, threatened, and candidate species that may be affected by the proposed action. Informal consultation identified six (6) Federally endangered, three (3) threatened, and one (1) candidate species that may occur within the project area (USFWS 2000). Table 2 shows the results of the biological assessment.

**Table 2. - Threatened and Endangered Species**

<b>Species</b>	<b>Status</b>	<b>Anticipated Effects</b>
Bald eagle	Threatened	No affect
Razorback sucker	Endangered	May affect, not likely to adversely affect (Beneficial)
Colorado pikeminnow with critical habitat	Endangered	May affect, not likely to adversely affect (Beneficial)
Southwester willow Flycatcher	Endangered	No affect
Mancos milkvetch	Threatened	No affect
Mesa Verde cactus	Endangered	No affect
Mexican spotted owl	Threatened	No affect
Mountain plover	Candidate	No affect
Black-footed ferret	Endangered	No affect
Knowlton's cactus	Endangered	No affect

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Reclamation, the Service and the Bureau of Indian Affairs consulted with the Service on the affects of restoring fish passage at the PNM Diversion Dam. The Service concurred with the biological assessment's determination of no affect determination for southwestern willow flycatcher, bald eagle, Mancos milkvetch, and Mesa Verde Cactus. The biological assessment also determined that the proposed action would have a "may affect, not likely to adversely affect" on Colorado pikeminnow and razorback sucker, but requested that an incidental take statement be issued for the construction and operation of the fish passage facility. During the consultation, the Service determined that formal consultation was necessary to address incidental take. The Service concluded that the proposed action is not likely to jeopardize the continued existence of the Colorado pikeminnow and razorback sucker, and is not likely to destroy or adversely modify designated critical habitat. An incidental take statement was issued that authorized incidental take in the amount of not to exceed five (5) Colorado pikeminnow and five (razorback sucker) per year for the life of the project (Consultation No. 2-22-00-F-412, USFWS 2001b).

Under the No Action Alternative, the PNM Diversion Dam will continue to impede movement of fish upstream. The Preferred and North Passage Alternatives would restore fish passage upstream of the PNM Diversion Dam thus modifying critical habitat for the Colorado pikeminnow. Both alternatives are expected to may affect, but not likely to adversely affect the razorback sucker, Colorado pikeminnow, or designated critical habitat. Effects of the fish passage are projected to be beneficial.

None of the alternatives considered would change the amount of water diverted for use by PNM. The effects of PNM's diversions were covered under a separate consultation with the Service for the proposed Jicarilla Apache Nation Water Subcontract (USBR 2001b, USFWS 2001a). A Memorandum of Understanding dated October 24, 1991 and resulting reasonable and prudent alternative (RPA) document for the Animas-La Plata Project (ALP) addressed depletions in the San Juan Basin (USFWS 1991). The consultation concluded that the San Juan River Recovery Implementation Program and resulting seven-year study would offset annual depletion of 57,000 acre-feet per year (af/y) in excess of the annual baseline depletions identified in the SJRRIP. Furthermore, it stated that, based on results of hydrologic modeling conducted during development of the RPA, it was Reclamation's opinion that an additional 57,100 af/y depletion would not "appreciably affect Reclamation's ability to mimic the natural hydrograph under current levels of depletions of the San Juan River." Those baseline studies included the 16,200 af/y currently consumed by SJGS.

The biological opinion issued by the Service on February 15, 2001 (Consultation #2-22-00-I-469, USFWS 2001a) for the Jicarilla Apache Nation Water Subcontract concurred with a "may affect, not likely to adversely affect" determination for southwestern willow flycatcher, Colorado pikeminnow, and razorback sucker. The concurrence was based on the commitment of the SJRRIP to fund the construction and operation of a selective fish passage at the PNM Diversion Dam, Reclamation's commitment to operation of Navajo Dam in a manner that will mimic the natural hyrograph, and Reclamation's participation in the SJRRIP.

The No Action Alternative could require Reclamation to reinitiate consultation with the Service for the Jicarilla Water Sub-Contract. Under the Preferred and North Fish Passage Alternatives, the baseline depletion of 16,200 af/y for SJGS would not be affected; and the agencies and entities would continue to participate in the SJRRIP and operate Navajo Dam to benefit the endangered fishes in the San Juan River.

### **Historic and Cultural Resources**

Cultural resources are physical or other expressions of human activity or occupation. Such resources (hereby referred to as historic properties) include culturally significant landscapes, prehistoric and historic archaeological sites and isolated artifacts or features, historic structures, human burials, sacred sites and traditional cultural properties (TCPs). TCPs are sites or areas of important cultural value to existing communities. Historic properties that are eligible for inclusion in the National Register of Historic Places (NRHP) are protected under the National Historic Preservation Act of 1966, as amended in 1992 (NHPA), and may also be protected under the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), and Executive Order 13007, Protection of Native American Sacred Sites, and other state, agency, or tribal laws and policies.

The PNM Diversion Dam lies in the San Juan Basin, an area well known for its archaeology and contemporary/historical Native American culture. Nearby cultural/archaeological attractions include Mesa Verde National Park, Aztec Ruins National Monument, Salmon Ruins, and the Navajo and Ute Mountain Ute Indian Reservations.

Known cultural traditions in the vicinity of the PNM Diversion Dam include the Archaic (3,000 to 500 B.C.), the Anasazi (A.D. 1-1300), the Navajo/Ute Settlement Period (A.D. 1450-1870) and Euroamerican settlement (A.D. 1870- Present). A number of contemporary Native American tribes have ancestral and traditional ties to the San Juan Basin.

It is not anticipated there will be significant impacts to cultural resources. The footprint of the Preferred Alternative is in the floodplain of the San Juan River, where there is a negligible likelihood that cultural resources will occur. Additionally, a file search at the Navajo Nation Historic Preservation Office indicate the area has been previously surveyed, and no cultural resource sites have been recorded. Both the north and south banks of the river have been previously disturbed during the construction of the PNM Diversion Dam.

However, if during the planning and construction of the fish passage, additional project features are identified, they will undergo cultural resources review in consultation with the New Mexico State Historic Preservation Officer and/or Navajo Nation Tribal Historic Preservation Officer, as appropriate.

No mitigation measures are proposed since the nature of the proposed action is such that there is no potential to cause effects to historic properties. This recommended determination was submitted to the New Mexico State Historic Preservation Officer and Navajo Nation Tribal Historic Preservation Officer for their concurrence.

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## **Indian Trust Assets**

The United States has a trust responsibility to protect and maintain rights reserved by or granted to American Indian Tribes or Indian individuals by treaty, statutes and executive orders. This trust responsibility requires Federal agencies take actions reasonably necessary to protect Indian trust assets (ITAs). Reclamation's ITA policy states that Reclamation will carry out its activities in a manner that protects ITAs and avoids adverse impacts when possible. When Reclamation cannot avoid impacts, it will provide appropriate mitigation or compensation.

Four Indian Tribes have adjudicated and unadjudicated water rights claims to water of the San Juan River Basin. They are the Jicarilla Apache Nation, the Navajo Nation, the Ute Mountain Ute Tribe, and the Southern Ute Indian Tribe.

### **Jicarilla Water Right**

The Jicarilla Apache Nation's water rights in the San Juan Basin were quantified through the 1992 Jicarilla Apache Water Rights Settlement Act (106 Stat. 2237). The Act provides rights to 6,500 acre-feet per year (af/y) from the San-Juan Chama Project, and to depletions of 25,500 af/y from Navajo Reservoir or the Navajo River. The 1880 priority date of these "future use" federally reserved water rights was subordinated in the 1955 priority date of the San Juan-Chama Project and Navajo Unit. The Act also allows the Jicarilla's to market or lease this water through third-party contracts for use outside the Reservation. The Jicarilla's water rights based on historic and existing uses were also quantified in the Act, with a total annual diversion of 5,563 af/y, or a depletion of 2,195 af/y; and a net evaporation from existing stock ponds and reservoirs of 2,187 af/y. These historic water rights retained a priority date of 1880. They are included in the depletion baseline used by the Service in their Section 7 consultation process, along with the 6,500 af/y from the San Juan-Chama Project.

Because the 25,500 af/y depletion right is not included in the Service's depletion baseline, Reclamation has been working with the Jicarilla Apache Nation to utilize their 25,500 af/y depletion right (Jicarilla Apache Water Subcontract and other small contracts). Depletions currently under contract with Reclamation, when renewed, may be subcontracted to the Jicarilla Apache Nation. The Jicarilla Apache Water Subcontract was discussed in greater detail in the Threatened and Endangered Species section of this document.

### **Navajo Water Rights**

The Navajo Nation has substantial quantities of water resource ITAs in the San Juan River Basin, based on historic use and reserved water rights. Because the reservation borders the San Juan River, the Navajo Nation has Winters Doctrine rights (rights based on the 1908 Supreme Court Decision *Winters v. United States*, 207 U.S. 564) on this river. The San Juan River, with water storage in Navajo Reservoir, is the only reliable and readily developable source in the northern portion of the Navajo Nation. The Navajo Nation's water rights in the San Juan River Basin have not been determined.

## Chapter 3 — Affected Environment and Environmental Consequences

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According to a biological assessment prepared for the Navajo Indian Irrigation Project, use of water on the Navajo Nation now includes a baseline depletion (i.e., accounted for in the development of the hydrologic parameters necessary to satisfy ESA requirements) of 301,499 af/y for the following projects: 280,600 af/y for the Navajo Indian Irrigation Project (NIIP), 12,100 af/y for the Hogback Project, 7,899 af/y for the Fruitland Irrigation Project, and 900 af/y for the Cudei Irrigation Project (Keller-Bliesner Engineering and Ecosystems Research Institute Inc. 1999).

### **Colorado Ute Tribes Water Rights**

Under the Winters Doctrine, the Colorado Ute Tribes (Ute Mountain Ute Tribe and Southern Ute Indian Tribe) have a priority appropriation right of 1868, when the Colorado Ute Tribes entered into a treaty with the United States. These water rights were quantified under the Colorado Ute Indian Water Rights Settlement Agreement of 1988. In the Settlement Agreement, the Colorado Ute Tribes accepted Animas LaPlata Project (ALP) reserved water rights to satisfy a portion of their Winters Doctrine water rights claims. Provisions of the Colorado Ute Indian Water Rights Settlement Act of 1988 can be found in Chapter 1 of the Final Supplemental Environmental Impact Statement for the Animas-La Plata Project (USBR 2000).

### **Affects on Tribal Water Rights**

The No Action Alternative would limit the SJRRIP's ability to meet recovery goals for the Colorado pikeminnow and razorback sucker and could potentially limit the Tribes' ability to develop their water rights.

Under the Preferred and North Fish Passage Alternatives, the construction and operation of a fish passage facility at the PNM Diversion, which in conjunction with other recovery actions, would aid in meeting the SJRRIP's recovery goals for the Colorado pikeminnow and razorback sucker. Recovery goals of the program include the downlisting and delisting of the Colorado pikeminnow and razorback sucker, and could assist the Tribes' in obtaining favorable Section 7 consultations to develop additional water rights.

### **Navajo Nation Lands**

The property south of the San Juan River is Indian trust lands within the Navajo Reservation. A 11.276 acre tract adjacent to the river was leased in 1971 to the Public Service Company of New Mexico for the purposes of "constructing, reconstructing, using, operating, maintaining, relocating and removing a low weir, dike, and roadway and for the purpose of diverting during the course of construction of a temporary coffer dam and diversion channel." The lease period is for fifty years.

The South Fish Passage Alternative would be constructed on the Navajo land currently leased to PNM for the diversion dam. Permits and easements from the Navajo Nation for construction, operations and maintenance of the fish passage facility would be required. Impacts to ITAs would be minimal and specific mitigation requirements would be identified in the appropriate Navajo permits.

The No Action alternative and North Passage Alternative would have no affect on the Navajo Nation ITA.

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## **Environmental Justice**

As part of the NEPA process, agencies are required to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income communities. Executive Order 12898 requires that “the responsibilities set forth shall apply equally to Native American programs.”

As discussed in the ITA section, four Indian Tribes have adjudicated and unadjudicated water rights within the San Juan Basin. In addition, Navajo Nation communities are located in northwestern New Mexico near the project area.

The Navajo population is in need of additional water. The City of Gallup and the Navajo Nation in concert with Reclamation have proposed a water supply system (Navajo-Gallup Pipeline) that would provide about 37,000 af per year to those areas from a diversion source on the San Juan River. Currently, depletions of this quantity of water are not included in the baseline depletion for the SJRRIP; however, the city of Gallup and the Navajo Nation are identifying alternative water project supplies with the assistance of the states of New Mexico, Arizona and Reclamation. The fish passage proposed action is not projected to disproportionately affect minority and/or low-income communities. The fish passage will contribute to the success of the SJRRIP which is necessary for future water development.

## **Social, Economic and Recreation Factors**

The total population of San Juan County, New Mexico is estimated at 109,899 (USDOC 2000). Native Americans comprise 39 percent of the County’s population. On average, residents of San Juan County earn less than other New Mexico residents. In 1989, per capita income for San Juan County was \$8,900 while for the State it was \$11,246 (USDOC 1992).

The Public Service Company of New Mexico’s San Juan Generating Station is a major employer for San Juan County with about 439 full-time employees. An additional 400 people are employed by Broken Hills Properties, which operates the La Plata and San Juan mines which supply SJGS with coal.

The San Juan River provides recreational opportunities for fishing and rafting; however, most of these recreational activities occur on the San Juan River from Navajo Dam to Farmington or on the San Juan River below Shiprock. An 8 mile stretch of river below Navajo Reservoir is managed by the State of New Mexico as “Quality Trout Waters” and provides some of the best trout fishing in the southwest. The San Juan below Shiprock is managed by the Navajo Nation as a warm water fishery, primarily with catfish and large mouth bass associated with the San Juan arm of Lake Powell. The stretch of the San Juan River between Farmington and Shiprock receives little recreational management because of private ownership, several diversion structures, and the lack of public access.

The No Action, Preferred and North Fish Passage Alternatives are not projected to affect these resources.



## Land Use and Vegetation Resources

Lands along the San Juan River from Farmington to Shiprock are primarily used for agriculture. In the project area, lands south of the San Juan River are part of the Navajo Reservation, while properties north of the San Juan River are held in private ownership. At the PNM Diversion Dam, PNM owns the north bank of the river and entered into a 50-year lease with the Navajo Nation on the south river bank as discussed earlier in the Indian Trust Assets section.

The northern property has been developed to house SJGS's pump houses, which pump river water to reservoirs at the SJGS. The property has been leveled and graveled. The property is primarily bare of vegetation with the exception of a few scattered Russian olive trees and small clumps of willows and tamarisk along the San Juan River.

The leased Navajo lands were disturbed during construction of the PNM weir in the 1970s. During weir construction, a large cofferdam diverted the entire San Juan River through this leased property. An earthen berm developed to divert the San Juan River around the weir construction site remains. Willow, tamarisk and Russian olive are the dominate species along the south river bank with several scattered mature cottonwood trees. During periods of high flow (greater than 7,000 cfs), the river floods an area south of the earthen berm. A small narrow band of willows and tamarisk has developed in this area.

None of the alternatives are predicted to affect land use. Vegetation resources would be slightly affected by the Preferred and North Bank Fish Passage Alternatives. The Preferred Alternative would affect about 0.5 acres of willows and tamarisk, and may require the removal of one mature cottonwood tree at the fish passage entrance. The Army Corp of Engineers would be consulted to address wetland impacts and develop appropriate mitigation if necessary.

The North Bank Fish Passage Alternative would affect less vegetation than the Preferred Alternative. Because the area was leveled and graveled, little vegetation has re-established on the PNM property. Several Russian olive and tamarisk would be removed at the fish passage entrance and exit. There are no wetlands that would be affected by the North Fish Passage Alternative.

## Cumulative Impacts

The National Environmental Policy Act (NEPA) provides for the evaluation of the cumulative effects of a project in combination with other projects to be implemented in the same area and time period. Some of the water resource activities in the San Juan Basin that would have cumulative impacts associated with the PNM Fish Passage facility include the operation of Navajo Dam, the Animas-La Plata Project, the Navajo Indian Irrigation Project, the Navajo Water Development Plan, San Juan Basin coalbed methane gas development, the Navajo-Gallup Water Supply Pipeline, the Jicarilla's Navajo River Water Development Plan, the San Juan River Basin Recovery Implementation Program including restoring fish passage at the Hogback and Cudei Diversions, and other future Tribal water development.

Implementation of these projects could potentially use all available water in the San Juan River Basin while recovery of the endangered fish species continues.

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These projects are described in greater detail in the draft environmental assessment for the Jicarilla Apache Water Sub-Contract (USBR 2001).

## Summary and Mitigation Measures

In summary, the primary effect of the proposed action would be to allow native fish to migrate into upstream habitat and assist in the recovery of Colorado pikeminnow and razorback sucker. The project is designed and would be operated to avoid impacts or harm to existing water users, uses, and water rights. Both fish passage concepts (rock and concrete structures) have been used successfully in the Upper Colorado River Recovery Program in Colorado.

Table 3 summarizes a comparison of impacts of the No Action, Preferred, and North Bank Fish Passage Alternatives.

The following environmental and social/economic commitments are included in the project plan.

- ▶ Disturbed areas would be restored through the replacement of topsoil, preparation of land for seeding, and seeding with grasses and shrub species. All reasonable measure will be implemented to avoid the loss of mature trees. Any mature trees lost as a result of construction activities would be replaced with a planting ratio of 10 seedlings to one mature tree at a location approved by the Navajo Nation and PNM.
- ▶ There would be no affect on PNM water rights, water uses, or water supplies. If flows in the San Juan River are insufficient to meet the requirements for fish passage operations and PNM's water entitlements, fish passage operations would discontinue until flows increased to meet PNM's entitlements.
- ▶ Private landowners and the Navajo Nation would be protected by mutually agreed stipulations to minimize construction impacts and to rehabilitate any damages.
- ▶ All construction contracts would have "Stop Work" clauses that would require the contractor to stop construction activities if threatened or endangered species were encountered. If this would occur, construction would be halted until consultation with the Service was completed.
- ▶ All construction contracts would have a "Stop Work" clause that would require the contractor to stop construction activities if cultural resources were encountered. If this would occur, construction would be halted until consultation with the State Historical Preservation Officer was completed.
- ▶ There would be no adverse economic effects or increased cost to PNM.
- ▶ Construction, operation, and maintenance expenses would be borne by the SJRRIP and/or the Service.
- ▶ Construction activities (coffer dams, etc.) in the San Juan River would be restricted to periods of low river flows to protect water quality and aquatic resources.
- ▶ All stipulations included in Clean Water Act permits for the project would be followed.

## Chapter 3 — Affected Environment and Environmental Consequences

Table 3- Summary of Alternatives

Feature	No Action Alternative	Preferred Alternative (South Bank, Boulder)	Alternative 2 (North Bank, Concrete)
<b>Type of Passage</b>	None	Open channel with boulder riffle-pools	Concrete with optional roughed bottom.
<b>Baffles</b>	None	Rock drops with 18 inch spacing	Chevron or vertical style
Drop between baffles	na	0.25 ft.	0.4 ft
<b>Alignment</b>			
Entrance	na	~30 ft from apron	~30 ft. from apron
Slope	na	1.35%	0.25% to 4%
Av. Velocities	na	2.7 to 2.9 fps	1.5 to 3.3 fps
Exit	na	~200 ft from upstream dam apron	90 ft from dam
Return Pipe	na	50 ft from passage exit	50 ft from passage exit
<b>Passage</b>			
500 cfs: Depth	na	2.1 ft.	5.2-3.6 ft.
500 cfs: Velocity	na	3.0 fps	1.5-2.2 fps
4000cfs: Depth	na	Controlled at gates	6.2 ft.
4000cfs: Velocity	na	Controlled at gates	1.6 fps
10000cfs: Depth	na	Controlled at gates	7.7 ft.
<b>Access</b>	na	South Side of River- through Navajo Nation	North Side - via Hwy 550
<b>Bridge decks</b>	na	Only temporary crossing	Two crossings
<b>Passageway Operations</b>			
Min river flow	na	500 cfs	500 cfs
<b>Property Issues</b>	na	Easement required from Navajo Nation	Easement required from PNM
<b>Effect on W.S. elevation at PNM Diversion</b>			
River at 500 cfs	na	0.0 ft	0.0ft
River at 19,500 cfs	na	0.01 ft	0.01 ft
<b>Maintenance</b>	na	Trash & some sediment	Trash & some sediment
<b>Estimated Cost</b>			
Construction	na	~\$605,000	~\$1,228,000.000
Maintenance per year	na	~\$73,200	~\$24,400

## **Selection of Preferred Alternative**

The South Fish Passage Alternative has been identified as the Preferred Alternative in this final environmental assessment. The South Fish Passage Alternative would construct a fish passage that is more natural in function and appearance, has a cost savings (almost half the cost of the North Fish Passage Alternative), has the ability to handle higher river flows and provide greater attraction flows, and has less impacts to PNM's operations during construction (North Fish Passage would require crossing PNM's intake channel).

It is also believed that the rock-type structure proposed under the Preferred Alternative would be more beneficial to native fishes than the concrete-type structure proposed for the North Fish Passage Alternative. Ascending a concrete passage with metal baffles is believed to be more stressful to fish than ascending a rock-type passage. A rock-type fish passage was determined to be non-compatible with PNM's intake channel and pumping facilities located on the north bank of the river, therefore, this type of fish passage for the North Fish Passage was eliminated from consideration.

## **CHAPTER 4 - CONSULTATION AND COORDINATION**

### **Plan Formulation and Public Scoping Activities**

Tetra Tech Inc., was hired to prepare conceptual design alternatives for fish passage at the PNM Diversion Dam. A scoping document was sent in June 2000 to individuals, agencies, Indian Tribes, and organizations. The Draft EA was mailed on April 27, 2001 to the parties identified in the distribution list and comments have been incorporated in this Final EA. Reclamation, on behalf of the SJRRIP, continues to work with all parties to address impacts associated with the various fish passage alternatives. The New Mexico Interstate Stream Commission was the only party who provided comments on the Draft EA. These comments are attached in the Appendices and have been incorporated into this Final EA.

### **Consultation with other Agencies**

Reclamation staff, acting on behalf of the SJRRIP, continue to informally coordinate and consult with the Fish and Wildlife Service to comply with the Fish and Wildlife Coordination Act and Endangered Species Act; the Army Corps of Engineers, Environmental Protection Agency, and the New Mexico Environmental Quality Division to comply with requirements of the Clean Water Act; and the State Historic Preservation Officer and Federal Advisory Committee to comply with the National Historic Preservation Act. Consultation results and comments on the Draft EA have been incorporated in this Final EA.

### **Distribution List**

Appendix A contains the mailing list for this Final EA. The list includes all individuals, agencies, and organizations to whom Reclamation sent the scoping document in June 2000. In addition, others who have specifically requested a copy of the Draft EA are included on the list.

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\_\_\_\_\_ 2000a. Animas-La Plata Project, Colorado-New Mexico, Final Supplemental Environmental Impact Statement. Upper Colorado Region.

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\_\_\_\_\_ 2001. Draft Environmental Assessment, Jicarilla Apache Nation  
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USBR, BIA, States of Colorado, New Mexico, and Utah, the Navajo Nation, the Southern  
Ute Indian Tribe, the Ute Mountain Ute Indian Tribe, and the Jicarilla Apache Nation.

\_\_\_\_\_ 2000. Letter from Field Supervisor, New Mexico Ecological Services Field Office,  
US Fish and Wildlife Service to Technical Services Director, Western Colorado Area Office,  
US Bureau of Reclamation on August 2, 2000.

\_\_\_\_\_ 2001a. Consultation #2-22-00-I-469, Biological Opinion for the Jicarilla Apache  
Subwater Contract dated February 15, 2001. New Mexico Ecological Services Field Office,  
Albuquerque, New Mexico.

\_\_\_\_\_ 2001b. Consultation #2-22-00-F-412, Biological Opinion for the Public Service  
Company of New Mexico Fish Passage dated September 17, 2001. New Mexico Ecological  
Services Field Office, Albuquerque, New Mexico.



## **APPENDIX A – DISTRIBUTION LIST**



## Distribution Mailing List

Ms. Susan Jordan  
Nordhaus Law Firm  
Albuquerque, New Mexico

Mr. Kelsey A Begaye, President  
The Navajo Nation  
Window Rock, Arizona

Mr. Paul Blanchford  
Navajo Nation  
Division of Environmental Protection  
Window Rock, Arizona

Ms. Cindy Crist  
Ute Mountain Ute Tribe  
Environmental Programs  
Towaoc, Colorado

Mr. Bill Enenbach  
State of New Mexico  
Office of State Engineer  
Aztec, New Mexico

Mr. Dave Firestone  
Public Service Company of New Mexico  
Waterflow, New Mexico

Mr. Ernest House Sr., Chairman  
Ute Mountain Ute Tribe  
Towaoc, Colorado

Mr. Randy Kirkpatrick  
San Juan Water Commission  
Farmington, New Mexico

Mr. Nick Medley  
New Mexico Game and Fish Department  
Sante Fe, New Mexico

Mr. Robert Ashman  
Public Service Company of New Mexico  
Waterflow, New Mexico

Leonard C. Burch, Chairman  
Southern Ute Indian Tribe  
Ignacio, Colorado

County Commissioners  
San Juan County  
Aztec, New Mexico

Mr. Jim Dee  
Bureau of Indian Affairs  
Navajo Area Office  
Gallup, New Mexico

Mr. Johnnie Francis  
The Navajo Nation  
Department of Water Resources  
Ft. Defiance, Arizona

Ms. Pathimi Goodtracks  
Southern Ute Indian Tribe  
Department of Natural Resources  
Ignacio, Colorado

Mr. Ed Kelly  
New Mexico Environmental Department  
Sante Fe, New Mexico

Mr. Scott McElroy  
Greene, Meyers & McElroy PC  
Boulder, Colorado

Mr. Joe Muniz  
Jicarilla Apache Nation  
Department of Natural Resources  
Dulce, New Mexico

Mr. James Olguin, Councilman  
Southern Ute Indian Tribe  
Ignacio, Colorado

Mr. Stanley Pollack  
The Navajo Nation  
Water Rights Counsel  
Window Rock, Arizona

Ms. Janice Sheftel  
Maynes, Bradford, Shipps & Sheftel  
Durango, Colorado

Mr. Lestor K. Taylor  
Nordhaus Law Firm  
Albuquerque, New Mexico

Mr. Roger Vacenti, President  
Jicarilla Apache Nation  
Dulce, New Mexico

Mr. Peter Wilkenson  
New Mexico Department of Game and Fish  
Sante Fe, New Mexico

Tom Wesche  
HabiTech, Inc.  
Laramie, Wyoming

Mr. Frank Pfiefer  
U.S. Fish and Wildlife Service  
Grand Junction, Colorado

Mr. Jude Smith  
U.S. Fish and Wildlife Service  
Albuquerque, New Mexico

Ms. Sandy Spon  
New Mexico Water Quality Department  
Sante Fe, New Mexico

Mr. Arvin Trujillo  
The Navajo Nation  
Division of Natural Resources  
Window Rock, Arizona

Mr. John Whipple  
New Mexico Interstate Stream Commission  
Sante Fe, New Mexico

Tom Pitts  
Water Consult.  
Loveland, Colorado

John Leeper  
The Navajo Nation  
Department of Water Resources  
Ft. Defiance, Arizona

## **APPENDIX B – Comment Letters**

**NEW MEXICO INTERSTATE STREAM COMMISSION**

**COMMISSION MEMBERS**

RICHARD P. CHENEY, Chairman, Farmington  
THOMAS C. TURNEY, PE., Secretary, Santa Fe  
PALEMON A. MARTINEZ, Valdez  
HOYT PATTISON, Clovis  
JOHN S. BULSTERBAUM, Deming  
PHILIP R. GRANT, Albuquerque  
HAROLD HOUGHTALING, Jr., Lake Arthur  
NARENDRA N. GUNAJI, Las Cruces



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May 16, 2001

OFFICIAL RECEIPT  
RECEIVED BY W.S.A.C.  
NORTH BRANCH DIVISION  
MAY 22 2001  
CLASS  
OF  
NO.  
BY  
5/24 BRUBAKER  
DeAngelis  
Mora

*Working File Copy*

Ms. Carol DeAngelis  
Bureau of Reclamation  
2764 Compass Drive  
Grand Junction, Colorado 81506

Dear Ms. DeAngelis:

This letter transmits comments on the draft environmental assessment prepared by the Bureau of Reclamation for the proposed Endangered Fish Passage Project at the Public Service Company of New Mexico (PNM) Diversion Dam.

Page 1, second paragraph. This paragraph is apparently a summary of the goals of the SJRIP. As such, said goals should be stated as the same appear on page 4, first paragraph, rather than paraphrased in this fashion. This comment also applies to the "Biological Assessment for Native Fish Passage at Public Service Company of New Mexico Diversion Dam, San Juan County, N.M." at page i, second paragraph.

Page 2, second paragraph. Delete explanatory information in items 1 through 5 because it is not all-inclusive. Rewrite the program elements here as they appear on page 2 of the document's accompanying Biological Assessment.

Page 14, first full sentence. This sentence should be restated as follows: An environmental impact statement is being prepared to evaluate the environmental, social and economic impacts of modifying Navajo Dam operations to meet the flow recommendations for the San Juan River downstream from Farmington through the reaches of designated critical habitat for two fish species listed as endangered under the Endangered Species Act, or a reasonable alternative to the flow recommendations.

Page 14, fourth full paragraph, last sentence. It is not clear how the No Action alternative has no direct effect on other water users while putting the same at risk of assuming responsibility for ESA compliance.

Page 14, last incomplete paragraph, second sentence. Any fish passage on the San Juan River below Navajo Dam, including those below Farmington, must be able to

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operate at flows less than 500 cfs. Adaptive management may provide for base flows lower than 500 cfs below Farmington in the future while still meeting the goals of the San Juan River Basin Recovery Implementation Program.

Pages 20 and 21, Jicarilla Water Rights and Navajo Water Rights. New Mexico does not agree with baseline depletion amounts for Jicarilla historic uses and for the Navajo Indian Irrigation Project.

Page 22, last incomplete paragraph, first sentence. Replace "Navajo Nation below Shiprock" with "San Juan River below Shiprock".

Page 23, first incomplete paragraph, last sentence. What kind of "management" is contemplated that is not occurring on "the San Juan River between Farmington and Shiprock because of private ownership, several diversion structures and the lack of public access"?

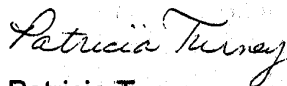
Page 24, first paragraph, second sentence. Begin this sentence by inserting "Some" before "other".

Page 24, second paragraph. The conclusion that "implementation of these projects would essentially use all available water in the San Juan River Basin while allowing recovery of the endangered fish species" is premature and is not agreed to by the states. This single sentence paragraph should be deleted.

"Biological Assessment for Native Fish Passage at Public Service Company of New Mexico Diversion Dam, San Juan County, N.M.", page 7, first paragraph. The three diversion structures here referenced may not be total barriers to fish movement at all flows. They are more accurately described as partial barriers.

Thank you for the opportunity to comment on this draft environmental assessment.

Sincerely,



Patricia Turney  
Staff Engineer

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