



Chapter VI

ENVIRONMENTAL COMMITMENTS AND MITIGATION MEASURES

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INTRODUCTION

This chapter discusses the environmental and related commitments that have been made by the Bureau of Reclamation (Reclamation) during the development of the San Juan River Public Service Company of New Mexico (SJRPNM) Alternative (Reclamation's preferred alternative). Reclamation would share responsibility of implementing measures that would avoid or reduce potential environmental impacts of the Navajo-Gallup Water Supply Project (proposed project). This responsibility would be shared with other Federal agencies, the Navajo and Jicarilla Apache Nations, and the city of Gallup, as well as third-party entities that could include New Mexico and Arizona State agencies and local governments.

This chapter summarizes the commitments made during the planning process and incorporated into the proposed project plan. Commitments are discussed in chapter IV, and mitigation measures are proposed in chapter V to reduce or avoid impacts that would otherwise occur as a result of the implementation of the preferred alternative.

As described below, the commitments would be implemented by Reclamation, or Reclamation would require their implementation by construction contractors or management authorities. Commitments for pre-construction activities would generally be completed by Reclamation or by the contractors during the final design process and prior to construction activities. Wildlife, wetland, cultural resource, and other mitigation would be completed by Reclamation as described in the following paragraphs. Some commitments, such as monitoring, would continue beyond completion of construction of structural facilities.

GENERAL COMMITMENTS

Throughout the planning process for the proposed project, efforts have been made to avoid impacts where practicable. If avoidance was not possible, then mitigation

measures have been developed to reduce the level of impact. The proposed mitigation measures for each resource, if appropriate, were discussed in chapter V, and key measures are summarized here. In addition to specific mitigation measures identified in chapter V, other management practices would be employed during construction activities to minimize environmental effects and would be included in construction specifications. Many of these measures are required in order to comply with Federal, State, or local laws and regulations, regardless of whether they are specifically identified in this document. Reclamation would comply with all relevant Federal, State, and local laws, ordinances, regulations, and standards during the implementation of the preferred alternative. Reclamation would prepare and implement an environmental commitments plan for the proposed project to document and track the completion of the environmental commitments.

Navajo Reservoir Operations

Reclamation would be able to issue water service contracts to meet project demands from Navajo Reservoir now that a successful hydrologic determination was signed. At full San Juan River Basin (Basin) development, depletions would increase by 5,270 acre-feet from the Basin over the baseline presented in chapter V, table V-3.

Releases would be similar to those described in the *Navajo Reservoir Operations Final Environmental Impact Statement, Navajo Unit – San Juan River, New Mexico, Colorado, Utah* (Reclamation, 2006) to meet the San Juan River Flow Recommendations; however, additional flows would be released from Navajo Reservoir downstream when needed to meet project demands at the SJRPNM intake structure. The demands for the Cutter Lateral portion of the proposed project would be delivered from Navajo Reservoir through the existing Navajo Indian Irrigation Project (NIIP) intake structure in Navajo Reservoir.

Water Uses and Resources Commitments

Until depletions in the Basin reach the baseline depletion in table V-3 plus the 5,270 acre-feet added to the baseline for this project, the San Juan River Basin Recovery Implementation Program (SJRBRIP) Flow Recommendations can be met or only missed less than 0.01 percent of the time for only one category. When the total depletions reached this new baseline depletion, the Navajo Nation would reduce an amount from one or more projects that are presently in the baseline to ensure that the total depletions in the Basin remain below the baseline depletions (Navajo Depletion Guarantee).

Navajo Depletion Guarantee

The Navajo Depletion Guarantee is a commitment by the Navajo Nation which ensures that depletions for its uses under the proposed project will be offset by unused Navajo Nation depletions included in the San Juan River Basin, including forbearance of Navajo Nation uses on NIIP and/or Hogback and Fruitland Irrigation Projects as necessary, if and when required to keep the total depletions in the Basin from exceeding the following threshold (referred to as the depletion threshold):

The sum of the actual annual depletions from all uses listed in the hydrologic baseline shown in table V-3 (excluding San Juan-Chama Project exportation) and all Navajo-Gallup Water Supply Project uses equals a total depletion amount of 752,127 acre-feet per year (AFY).¹

Full proposed project depletions of 35,893 AFY would be made without requiring any forbearance of uses in excess of the 6,740 acre-feet of change in use baseline depletions shown in tables V-5 and VI-1. The city of Gallup may subcontract with either the Jicarilla Apache Nation or the Navajo Nation, or both in combination, for the diversion of up to 7,500 acre-feet of water per year from the Navajo Reservoir supply for its proposed project uses (depicted in table VI-1 as scenario 1 and scenario 2).

Depletions by the San Juan-Chama Project and other projects that may be added to the hydrologic baseline (table V-3) after the U.S. Fish and Wildlife Service's (Service) issuance of the Final Biological Opinion for the Navajo-Gallup Water Supply Project (volume II, appendix C, part III) would not be used when comparing actual future depletions against the 752,127 AFY depletion threshold.

If the threshold depletion is reached in the future, the Navajo Nation would reduce its total depletion in the Basin so that its consumptive uses under the proposed project do not cause the total actual depletions in the Basin to exceed the threshold depletions. The Navajo Nation could accomplish the required reductions in use by changes in the operation of any of the Navajo Nation's projects that deplete water from the San Juan River. The maximum Navajo Depletion Guarantee requirement in any year is a reduction in Navajo Nation depletions of 20,782 acre-feet.

When the depletion threshold condition is reached and the Navajo Depletion Guarantee must be implemented, the quantification of the threshold depletion amount will be recalculated using the baseline uses identified in table V-3 that are estimated in the most recent San Juan Hydrology Model. Changes in the Flow Recommendations for the San Juan River or the status of listed species may result in reduction or removal of the

¹ The total includes 854,370 AFY for all depletions in the hydrologic baseline, less 107,514 AFY average depletion by the San Juan-Chama Project, plus 5,271 AFY of new depletions included in the proposed project.

Table VI-1.—Summary depletions for full proposed project development

Water provider	Change in use of baseline depletion (changed used) (acre-feet)	New depletions (approved in excess of baseline) (acre-feet)	Met within total threshold depletion for Navajo Depletion Guarantee (acre-feet)	Total (acre-feet)
Scenario 1 – City of Gallup subcontract with the Jicarilla Apache Nation				
Jicarilla Apache Nation	¹ 6,740	² 1,960	0	8,700
Navajo Nation	0	6,411	20,782	27,193
Proposed project total	6,740	8,371	20,782	35,893
Total reduced for 3,100 acre-feet NIIP returns		³ 5,271		
Scenario 2 – City of Gallup subcontract with the Navajo Nation				
Jicarilla Apache Nation	⁴ 1,200	0	0	1,200
Navajo Nation	⁵ 5,540	8,371	20,782	34,693
Proposed project total	6,470	8,371	20,782	35,893
Total reduced for 3,100 acre-feet NIIP returns		³ 5,271		

¹ Includes forbearance by the Jicarilla Apache Nation of 6,750 AFY of consumptive use on the Jicarilla Apache Nation Navajo River Water Supply Project (JANNRWSP) and 170 acre-feet of consumptive use under Jicarilla water rights for historic uses.

² The Final Biological Opinion for the Navajo-Gallup Water Supply Project does not establish any right in the Jicarilla Apache Nation to retain approval for 1,960 AFY of new depletions in excess of the baseline depletions listed in table V-3 should this amount of Jicarilla water rights, over and above the change in use of 6,750 acre-feet of baseline depletion, not be required for the proposed project due to the city of Gallup subcontracting with the Navajo Nation, as shown in scenario 2.

³ By the time the Navajo Nation's water demands under the proposed project reach the full 27,193 acre-feet of depletion, the return flows from the NIIP to the San Juan River are anticipated to have increased by approximately 3,100 AFY, on average, over and above the current rate of return flow from the NIIP. This increase in return flows from the NIIP offsets an equivalent amount of new depletion by the proposed project and reduces the net new depletion from the river in the proposed project's biological opinion from 8,371 AFY to 5,271 AFY.

⁴ Includes a forbearance by the Jicarilla Apache Nation of 1,200 AFY of consumptive use on the JANNRWSP.

⁵ Includes forbearance by the Navajo Nation of 5,540 AFY of consumptive use on the NIIP or other Navajo projects for which depletions are in the baseline.

Navajo Depletion Guarantee based upon reconsultation. Additional information regarding the Navajo Depletion Guarantee is included in volume II, appendix C, part III (final biological opinion).

Monitoring Requirements.—No specific, detailed accounting of depletions will be required unless the sum of NIIP and Animas-La Plata Project (ALP) depletions reaches 290,000 acre-feet (table V-5). Since these projects are more easily tracked than depletions in the entire Basin, it will limit monitoring requirements. If this condition is met, all the depletions listed in the baseline for the proposed project will be monitored and reported on a 5-year cycle to coincide with the Reclamation Consumptive Use and Loss report. Depletions will be reported by the categories listed in the hydrologic baseline shown in table V-5 and the total computed. As discussed above, San Juan-Chama Project depletions will be removed for comparison to the Navajo Depletion Guarantee threshold depletion.

If the sum of these depletions reaches the depletion guarantee threshold, the elements of the Navajo Depletion Guarantee will be implemented. At that point, modeling will be completed for the limits the Navajo Nation proposes putting in place to meet flow conditions specified in the biological assessment.

Responsibilities.—

San Juan River Basin Recovery Implementation Program.—The SJRBRIP Hydrology Committee will be responsible for reviewing the accounting of depletions. The committee will also ensure that the San Juan River Basin Hydrology Model is implemented for compliance with the Flow Recommendations as specified in the proposed project’s biological assessment. The biological assessment contains limits identified by the Navajo Nation at the time the Navajo Depletion Guarantee is implemented.

Reclamation.—Reclamation will identify the point at which ALP and NIIP annual depletions reach 290,000 acre-feet. If that target depletion is reached, Reclamation will initiate reporting of depletions for the categories listed in the hydrologic baseline for the proposed project (table V-5) on a 5-year cycle as a part of the consumptive use and loss reporting procedure. As a result of the monitoring, Reclamation will identify the point at which the sum of actual uses reaches the Navajo Depletion Guarantee threshold. If this level of depletion is reached, Reclamation will limit deliveries to Navajo projects, as directed by the Navajo Nation, to levels required by implementation of the Navajo Depletion Guarantee. In the event that the SJRBRIP terminates, Reclamation will assume the responsibilities listed above for the SJRBRIP.

Navajo Nation.—The Navajo Nation will limit uses as specified in the Navajo Depletion Guarantee if the conditions stated above are reached and provide to the SJRBRIP and Reclamation the projects it wishes limited.

Conditions.—None of the actions and conditions listed herein shall limit the ability of Reclamation to reinitiate consultation on the proposed project to increase its baseline depletion or alter the requirements of the Navajo Depletion Guarantee.

Reclamation will notify the SJRBRIP and the States of New Mexico and Colorado of any such requests to reinitiate consultation on the proposed project. Any reconsultations on the proposed project will be performed in conformance with the SJRBRIP's 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 that is described in the SJRBRIP's Program Document, Appendix C, dated September 7, 2006, as may be modified by the SJRBRIP and the Service.

The depletion levels discussed are conditioned upon current estimates of natural flow and baseline depletions for 1929–93 and are subject to change as hydrology or models are updated. If such updates occur, a newly computed Navajo Depletion Guarantee shall be computed and utilized based upon the same depletion categories as described herein.

Indian Trust Assets Commitments

There are no mitigation measures proposed for Indian Trust Assets. One of the goals of the SJRBRIP is to “. . . proceed with water development in the Basin in compliance with federal and state water law, interstate compacts, Supreme Court decrees, and federal trust responsibilities to the Southern Utes, Ute Mountain Utes, Jicarillas, and the Navajos.” (SJRBRIP, 1995).

Water Quality Commitments

Reclamation would develop and implement a program to reduce, minimize, or eliminate temporary, short-term increases in suspended sediment loading or other water quality constituents potentially caused by project construction through the incorporation of permits, Best Management Practices (BMPs), and sediment control structures as described under mitigation measures for water quality in chapter V.

Vegetation Commitments

Reclamation would:

- Ensure that construction contractors limit ground disturbance to the smallest feasible areas and that they implement BMPs along with the planting or reseeded of disturbed areas using native plants to assist in the re-establishment of native vegetation as described under mitigation measures for vegetation resources in chapter V.
- Use accepted erosion control measures during construction, supplement grass seeding with native shrub seed in upland areas where shrub cover is diminished due to pipeline disturbance, monitor planting to ensure establishment, and control noxious weeds in disturbed areas.
- Replace riparian and wetland habitat with the creation of acre-per-acre replacement or enhancement of 3 acres for each acre lost to mitigate for impacts to riparian and wetland habitat. This includes revegetation of 17 acres of non-native riparian (Russian olive and tamarisk) and 3.6 acres of wetland temporarily removed during pipeline construction. Approximately 0.9 acre of non-native riparian and 1.1 acres of wetlands would be permanently removed for project features.

Wildlife Commitments

Reclamation would:

- Ensure that construction contractors limit ground disturbance to the smallest feasible areas and that they implement BMPs along with the planting or reseeded of disturbed areas using native plant species to assist in the re-establishment of native vegetation as described under mitigation measures for vegetation resources in chapter V.
- To minimize disturbance to raptors, major construction activities along the Nutria and Defiance Monoclines, Cutter Canyon, Blanco Canyon, and the corridor from Cutter to Largo Canyons should be restricted during the nesting season (January 15 to August 15). If that is not possible, extensive nest searches should be made up to three-quarters of a mile of proposed activities immediately prior to construction and active nests avoided.

- Conduct extensive nest searches within one-quarter mile of proposed activities immediately prior to construction and avoid active nests if construction activities could not be scheduled outside the January 15 to July 15 timeframe.
- Incorporate raptor perch guards or raptor safe configurations on all new transmission structures.
- Avoid removal of riparian and wetland vegetation between March 15 and August 15 to avoid potential impacts to migratory bird nesting.
- Trench and bury pipeline concurrently to minimize trapping of small wildlife as possible. Reclamation would construct escape ramps for trenches left open overnight.

Aquatic Resources Commitments

The SJRBRIP would monitor and report total depletions in the Basin as described previously in the “Water Uses and Resources Commitments” section. The Navajo Nation would implement a Navajo Depletion Guarantee when needed to keep the Navajo Nation’s depletions within the Endangered Species Act depletion baseline. Reclamation would also incorporate BMPs, as previously described in the “Water Quality Commitments” section, to avoid or minimize project impacts to aquatic resources.

Special Status Species Commitments

Reclamation would:

- Implement conservation measures found in the final biological opinion on the proposed project (see appendix C, part III). These measures address the Colorado pikeminnow, razorback sucker, Southwestern willow flycatcher, and Mesa Verde cactus.
- Implement conservation measures for Navajo Nation listed species as described under “Special Status Species – Mitigation Measures” in chapter V.
- Conduct surveys for ferruginous hawk and bald eagle in proposed construction areas 1 year in advance of construction for pipeline routes and construction sites not adjacent to highways, well-traveled roads, or areas of regular human activity.

- Implement appropriate protective measures to avoid or minimize nest disturbance if active nests were found.
- Conduct surveys for Southwestern willow flycatcher in riparian and wetland habitat prior to construction within one-quarter mile of disturbed areas and avoid construction activities during the nesting season (March 15 to August 15) if active nesting is found.
- Delineate and avoid beautiful gila plants where possible.
- Refine the pipeline alignment to avoid individual Mesa Verde cactus and suitable habitat where possible.

Reasonable and prudent measures (RPMs) for Colorado pikeminnow and razorback sucker included in the final biological opinion are not included as environmental commitments. RPMs are measures to reduce incidental take of threatened or endangered species and are described as terms and conditions. The terms and conditions are nondiscretionary actions required by the action agency and are not included as mitigation measures.

Recreation Commitments

No environmental commitments are made for recreation resources.

Land Use Commitments

Reclamation would:

- Ensure that construction contractors limited ground disturbance to the smallest feasible area and that they implemented BMPs along with the planting or reseeded of disturbed areas to minimize impacts to existing land uses as previously described in the “Vegetation Commitments” section.
- Ensure that construction contractors fenced revegetated areas to prevent grazing activities until disturbed areas became re-established.
- Work with the Navajo Nation to provide temporary relocation assistance to affected livestock owners along the pipeline corridor.
- Provide relocation assistance to affected residences displaced by construction of the San Juan River water treatment facility.

Hazardous Materials Commitments

Reclamation would contact pipeline and gas well companies prior to construction activities to identify and avoid existing hazards. Pipeline alignments would be adjusted, as needed, to avoid impacts to pipelines and wells.

Soils Commitments

Reclamation would mandate that construction contractors use and implement measures contained in erosion control guidelines and BMPs to control soil erosion from construction areas as described under mitigation measures for soils in chapter V.

Geology Commitments

No environmental commitments are made for geologic resources.

Paleontologic Commitments

During construction activities, Reclamation would monitor areas with exposure of geological units or settings that indicated a high likelihood of yielding vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. In the event of discovery, Reclamation would evaluate the significance before construction could continue.

Reclamation would manage, on a case-by-case basis, construction activities adjacent to the Lynbrook and Betonnie Tsosie Fossil Areas. Reclamation would conduct paleontologic clearances prior to any surface-disturbing activities along the pipeline corridor in the Lynbrook and Betonnie Tsosie Fossil Areas.

Air Quality and Noise Commitments

Reclamation would require that construction contractors implement measures to control fugitive dust during construction as described under mitigation measures for air quality and noise in chapter V. No environmental commitments are made for noise abatement.

Socioeconomics Commitments

No environmental commitments are made for socioeconomic resources.

Environmental Justice Commitments

No environmental commitments are made for environmental justice.

Cultural Resources Commitments

Reclamation would:

- Implement a program to compensate for losses of archaeological sites that would occur as a result of construction and operation of the proposed project and the construction of conveyances as defined in the mitigation measures for cultural resources in chapter V.
- Coordinate the program with the New Mexico State Historic Preservation Officer, Navajo Nation Tribal Historic Preservation Officer, Bureau of Land Management, Bureau of Indian Affairs, city of Gallup, and the Advisory Council on Historic Preservation.
- Ensure compliance with mitigation measures developed in accordance with the Native American Graves Protection and Repatriation Act and Executive Order 13007 as described under “Cultural Resources – Mitigation Measures” in chapter V.