



— BUREAU OF —
RECLAMATION

Environmental Assessment and Finding of No Significant Impact

Isleta Diversion Dam

Modification Project

Pueblo of Isleta, Valencia County, New Mexico

Upper Colorado Basin



Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Isleta Diversion Dam Modification Project

Pueblo of Isleta, New Mexico

Upper Colorado Basin – Albuquerque Area Office

This Environmental Assessment was prepared for Reclamation by BRIC, LLC under Contract No. 140R4022F0029

BRIC, LLC | Subsidiary of Diné Development Corporation
Albuquerque, NM 87113

Cover Photo: An artist's depiction of the fish passage at the Isleta Diversion Dam as viewed from the Peralta Sluiceway. Source: Reclamation/D. Baird, image in the public domain.

Finding of No Significant Impact

U.S. Bureau of Reclamation

Environmental Assessment

Isleta Diversion Dam Modification Project

Environmental Assessment

Based on the analysis of potential environmental impacts contained in the attached environmental assessment, the Proposed Action does not constitute a major federal action. Considering the criteria in 40 CFR §1501.3, I have determined that the Isleta Diversion Dam Modification Project will not have a significant effect on the human environment. An environmental impact statement is therefore not required, 40 CFR § 1501.5.

Manager, Environment and Lands Division

Area Manager, Albuquerque, New Mexico

EA/FONSI Number AAO-23-002

Summary of the Analyzed Alternatives

The U.S. Department of the Interior, Bureau of Reclamation (Reclamation), and Pueblo of Isleta (Pueblo) are proposing to modify the Isleta Diversion Dam (IDD) in the Rio Grande on Pueblo trust lands to improve sediment management and provide fish passage upstream and downstream for the federally endangered Rio Grande Silvery Minnow (*Hybognathus amarus*; silvery minnow). The project area is located on the Pueblo approximately 15 miles south of downtown Albuquerque, New Mexico on the Rio Grande in Valencia County. This Environmental Assessment (EA) analyzed the impacts of two alternatives—No Action and Proposed Action Alternative—on environmental and cultural resources in the project area. The Proposed Action would improve sediment management and fish passage at the IDD through the following actions:

- East Bank Realignment
- Peralta Sluiceway Modification
- Installing a Fishway

This EA has been prepared in accordance with Reclamation’s NEPA Handbook (Reclamation 2012) pursuant to the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500 et seq.), and the U.S. Department of the Interior National Environmental Policy Act (NEPA) regulations at 43 CFR 46 on the NEPA of 1969. The specific designs for the proposed modifications are not yet complete, and Reclamation will proceed into a Design-Build process for the preferred alternative, and additional NEPA analysis and documentation will be completed as appropriate.

There were five resources determined not to be impacted by the Proposed Action—air quality, migratory birds, water quantity, noxious weeds, and hazardous materials. It was determined the Proposed Action would not have the potential for significant impacts on the resources carried forward for detailed analysis in this EA—soils; hydrology, hydraulics, and geomorphology; water quality; riparian and wetland resources; vegetation; threatened and endangered species; cultural resources; Indian trust assets; and environmental justice. The rationale for all determinations may be found in Chapter 3 of this EA.

With implementation of best management practices (BMPs), design features, and permit stipulations, effects to other resources were considered neutral and minor or temporary adverse impacts.

Environmental Impacts

The following resources were evaluated in this EA to determine impacts that would result from the Proposed Action—soils; hydrology, hydraulics, and geomorphology; water quality; riparian and wetland resources; vegetation; threatened and endangered species; cultural resources; Indian trust assets; and environmental justice.

Soil Resources

Soil may be removed to realign the east bank, install Peralta Sluiceway modifications, and to install the fishway. The exact amount of soil that may be removed is not known at this time and will be finalized during the Design-Build process. All excavated soil will be transported along existing roads to a staging area, the existing Peralta Spoil Yard, or to an alternative disposal location. The risk of increased wind or water erosion from excavated soil piles is expected to be low due to the generally flat terrain and the surrounding riparian vegetation will act as a windbreak. In addition, BMPs will be implemented to reduce the risk of erosion to soil resources as agreed upon between Middle Rio Grande Conservancy District and the Pueblo for sediment management.

Water Resources and Water Quality

There may be localized geomorphic changes from the realignment of the east bank, as the bank will be more concave, widening the channel upstream of the IDD. Construction of the fishway will also be expected to narrow the river channel because the structure will be wider on the downstream side. However, the channel bed below the IDD is sufficiently coarse that the Proposed Action will not be expected to result in geomorphic changes. The Rio Grande will continue to carry a high sediment load, and sediment and debris will be expected to be deposited in the constructed fishway necessitating some operational changes and maintenance.

Construction activities for the IDD modifications and fishway will temporarily alter water qualities by increasing turbidity, suspending sediment into the water column, and subsequent oxygen sags. Additional analysis and monitoring may be necessary to verify water quality impacts will be localized within the project area by its containment features or diluted upon discharge downstream. Water quality within the project area will be impacted temporarily by increased sediment concentrations and turbidity until earth moving activities are completed and barriers are removed. Both installation and removal of the barriers are expected to have minor, temporary impacts to water quality that will be diluted by the Rio Grande flows. Potential impacts to water quality from accidental spills will be incidental during construction with implementation of BMPs. BMPs, design features, and adherence to the conditions of the U.S. Army Corps of Engineers (USACE) permits and Pueblo Water Quality Certifications will minimize the potential for adverse effects to water quality from accidental spills or construction activities.

Riparian and Wetland Resources

Wetland vegetation may be trampled or removed during construction of the proposed earthen ramps that will be used by vehicles to access the river during the fishway construction. The wetlands, 0.043-acre in size, observed on the island in the Rio Grande floodplain will be disturbed by the fishway construction. However, wetlands on the island appears to be influenced by local water levels affected by the existing IDD operations as higher water levels frequently inundate parts of the island fostering wetland vegetation compared to other areas on the island that are not frequently inundated. If the island is impacted, then after construction and barrier removal, BMPs will be implemented to remove noxious weeds from the impacted wetland areas as required by USACE and the Pueblo.

Vegetation

The realignment of the east bank and construction of the earthen ramps under the Proposed Action Alternative will disturb up to 1.5 acres of vegetation (i.e., up to 0.5 acres of north island and up to 1 acre of vegetation along east bank), which may include a few cottonwood trees. Reclamation will mitigate the loss of large, mature cottonwood trees by a 10-to-1 replacement under the

implementation of BMPs. The removal of up to 1.5 acres of upland vegetation will remove less than 1% of the semidesert grassland vegetation community identified within the area, thus, no substantial populations or communities of native plants will be affected by the Proposed Action. BMPs will also be implemented to prevent the establishment of noxious weeds in the construction work area.

Threatened and Endangered Species

Under the Endangered Species Act of 1973 (ESA), all federal departments and agencies have the responsibility to avoid jeopardizing federally listed species that are listed as endangered or threatened, to address impacts to candidate species actively proposed for listing and avoid adversely modifying designated critical habitat. Consultation with the U.S. Fish and Wildlife Service under the ESA is a separate process and will continue under the Design-Build process.

The proposed construction activities will be limited to the aquatic portion of the project footprint and are anticipated to occur primarily in the dry after the project area has been dewatered or with flows rerouted around part of the dam or areas of construction. Construction activities that are conducted in the wet and the diversion of flows itself away from the impact areas may result in disturbance or potential entrapment of silvery minnows, including possible mortality. It was determined that the Proposed Action Alternative “may affect and is likely to adversely affect” the Rio Grande Silvery Minnow because of installation and construction impacts of a fish passage within their aquatic habitat. However, harms to silvery minnows or aquatic habitats will be either minimal or temporary. The U.S. Fish and Wildlife Service (USFWS 2016) evaluated the harms caused by installation of fish passages and they described nondiscretionary terms and conditions to minimize impacts to silvery minnows. Note that no critical habitats occur on the Pueblo and therefore none will be affected.

Reclamation will utilize construction techniques and implement the standard BMPs (USFWS 2016) for the IDD Modification Project, which will minimize impacts to silvery minnows. During the final design process, Reclamation will also reduce the area of impacts by at least 50 percent to further minimize harms to silvery minnows and aquatic habitats. After final design, Reclamation will affirm with the U.S. Fish and Wildlife Service that harms to silvery minnows or aquatic habitats caused by the Proposed Action Alternative are adequately minimized by implementation of nondiscretionary terms and conditions and therefore, will not be subject to additional formal ESA consultation. Finally, the installation and operation of a new fishway would be expected to benefit silvery minnows by facilitating their movements into upstream habitats when the IDD gates are closed.

Cultural Resources

Realignment of the east bank and construction of the Peralta Sluiceway modifications and fishway is not expected to result in impacts to cultural resources in the project area, except for the IDD, which is a historic cultural property. Impacts to the IDD will be mitigated by conducting Historic American Engineering Record (HAER) documentation of the IDD prior to construction activities. In addition, if the contractor discovers any previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the discovery will be promptly reported to the Pueblo Tribal Historic Preservation Officer (THPO).

Indian Trust Assets

Approximately 5 acres of Tribal trust lands will be disturbed from constructing the east bank realignment, sluiceway modification, and fishway. The Pueblo understands there will be impacts to Tribal trust lands and supports the IDD Modification Project (see Appendix C, letter of support).

Environmental Justice

The project area is on Tribal trust lands with Native American Indians making up 95.8% of the population. Construction of the fishway and realignment of the east bank and sluiceway modifications will not result in disproportionate negative effects to minority or low-income populations. The land use and community infrastructure will not change by implementing the Proposed Action. Realigning the east bank and sluiceway modifications is expected to benefit the Pueblo of Isleta Community by reducing sediment loads through the Peralta Sluiceway. The reduced sediment loads will reduce the potential for interruptions of water deliveries for irrigation and will be expected to decrease the operations and maintenance costs for dredging and removing sediment buildup. Additionally, reduction in sediment buildup at the Peralta Sluiceway may improve the visual aesthetics of the IDD area by reducing spoil piles adjacent to the canal banks and spoils stored at the existing Peralta Spoil Yard.

Executive Summary

In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, the Bureau of Reclamation, Albuquerque Area Office (Reclamation) prepared an Environmental Assessment (EA) to analyze potential impacts associated with modifying the Isleta Diversion Dam (IDD) in the Rio Grande on Pueblo of Isleta (Pueblo) trust lands in Valencia County, New Mexico. This EA was prepared in accordance with the NEPA and its implementing regulations, and Reclamation's NEPA Handbook.

Modifications would include realignment of the upstream east bank, Peralta Sluiceway modifications, and installing a fishway (a structure that facilitates fish passage through the dam). The IDD and associated infrastructure are located on the Rio Grande and occupy about 15 acres of the Pueblo. The IDD diverts water into the Belen Highline Canal on the west side of the river and into the Peralta Main Canal on the east side. The Rio Grande bisects Pueblo lands, providing riparian habitat that is essential to the cultural and traditional needs of the people of the Pueblo. Under the 2016 *Agreement of Settlement and Compromise Regarding the Isleta Diversion Dam* (Settlement) the United States (Reclamation and the Bureau of Indian Affairs [BIA]) and the Middle Rio Grande Conservancy District (MRGCD) have right-of-way access to the IDD for operations and maintenance in cooperation with the Pueblo.

The purpose of the IDD modifications is to comply with the Settlement between Reclamation, BIA, the Pueblo, and MRGCD. As part of the Settlement, the Pueblo, MRGCD, and Reclamation have agreed to reduce sediment entrainment in the east IDD sluiceway and associated irrigation systems to the greatest extent possible. Reclamation, with the support of BIA, MRGCD, the Pueblo, and the State of New Mexico also have a commitment with the U.S. Fish and Wildlife Service (USFWS) to provide fish passage at the IDD for the Rio Grande Silvery Minnow (*Hybognathus amarus*; silvery minnow), a federally listed endangered species, as part of the 2016 Middle Rio Grande Biological Opinion for their water operation and river maintenance activities.

The proposed modifications are needed to improve sediment management and silvery minnow passage at the IDD. The IDD was constructed in the 1930s by MRGCD and rehabilitated in the 1950s by Reclamation. Over decades of irrigation deliveries, large amounts of sediment have been diverted from the Rio Grande, which has resulted in extensive sedimentation of the irrigation canals, and subsequent dredging and disposal of dredged spoils, especially along irrigation canals and near the IDD. The accumulation of sediment and dredged materials (spoils) threaten the natural and cultural resources of the Pueblo.

Summary of Alternatives

Two alternatives are analyzed in this EA, No Action and Proposed Action. Under the No Action Alternative, the IDD would not be modified and a fishway would not be constructed. In addition, there would be no changes to river, sluiceway, or opening and closing IDD radial gates and most gates would continue to be manually operated to maintain head pressure to meet irrigation demand; note that gate 16 is already mechanized.

The Proposed Action Alternative would improve sediment management and fish passage at the IDD through the following actions:

- East Bank Realignment
- Peralta Sluiceway Modification

- Installing a Fishway

Summary of Impacts

There were five resources determined not to be impacted by the Proposed Action—air quality, migratory birds, water quantity, noxious weeds, and hazardous materials. Nine resources were carried forward for detailed analysis in this EA—soils; hydrology, hydraulics, and geomorphology; water quality; riparian and wetland resources; vegetation; threatened and endangered species; cultural resources; Indian trust assets; and environmental justice. It was determined that the Proposed Action Alternative “may affect and is likely to adversely affect” the Rio Grande Silvery Minnow because of construction impacts within wetted habitats. Reclamation will utilize construction techniques and implement the standard BMPs (USFWS 2016) for the IDD Modification Project, which will minimize impacts to silvery minnows. During the final design process, Reclamation will also reduce the area of impacts by at least 50 percent to further minimize harms to silvery minnows and aquatic habitats. The installation and operation of a new fishway would be expected to benefit the silvery minnow by facilitating upstream movements when the IDD gates are closed. Impacts to resources are reduced by implementation of best management practices (BMPs), design features, and permit stipulations; and effects to other resources were considered neutral and minor or temporary adverse impacts.

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Acronyms and Abbreviations

APE	Area of Potential Effect
BIA	Bureau of Indian Affairs
BMP	Best Management Practices
BRIC	A limited liability company and subsidiary of Diné Development Corporation
CCR	Combined City Region
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
DOI	Department of the Interior
EA	Environmental Assessment
ESA	Endangered Species Act
°F	Degrees Fahrenheit
FONSI	Finding of No Significant Impact
HAER	Historic American Engineering Record
HCPI	Historic Cultural Properties Inventory
HUC	Hydrologic Unit Code
IDD	Isleta Diversion Dam
IDT	Interdisciplinary Team
IPaC	Information for Planning and Consultation tool
ITA	Indian Trust Asset
MBTA	Migratory Bird Treaty Act
MRG	Middle Rio Grande
MRGCD	Middle Rio Grande Conservancy District
MRG BO	Middle Rio Grande Biological Opinion
NEPA	National Environmental Policy Act
NHNM	Natural Heritage New Mexico
NHPA	National Historic Preservation Act
NMED	New Mexico Environment Department

NMRPTC	New Mexico Rare Plant Technical Committee
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
Pueblo	Pueblo of Isleta
Reclamation	Bureau of Reclamation
RGSM	Rio Grande Silvery Minnow (used to refer to the species as a whole)
SOP	Standard Operating Procedures
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program

1. PURPOSE AND NEED FOR ACTION

1.1. Background

The U.S. Department of the Interior, Bureau of Reclamation (Reclamation), and Pueblo of Isleta (Pueblo) are proposing to modify the Isleta Diversion Dam (IDD) in the Rio Grande on Pueblo trust lands in Valencia County, New Mexico (Figure 1). Modifications would include realignment of the upstream east bank, Peralta Sluiceway modifications, and installing a fishway with some mechanization of the IDD radial gates. The IDD and associated irrigation infrastructure are located on the Rio Grande and occupy about 15 acres of the Pueblo. The IDD diverts water into the Belen Highline Canal on the west side of the river and into the Peralta Main Canal on the east side. The Rio Grande bisects Pueblo lands and provides riparian and riverine habitat that is essential to the cultural and traditional needs of the people of the Pueblo. Under the 2016 *Agreement of Settlement and Compromise Regarding the Isleta Diversion Dam* (Settlement) the United States (Reclamation and the Bureau of Indian Affairs [BIA]) and the Middle Rio Grande Conservancy District (MRGCD) have right-of-way access to the IDD for operations and maintenance in cooperation with the Pueblo. The IDD is owned by Reclamation and operated by MRGCD to supply irrigation water downstream to the Pueblo and downstream into MRGCD's Belen Division.

The proposed project area is located approximately 15 miles south of downtown Albuquerque, within Section 24, Township 8 North, Range 2 East (Figure 1). The proposed IDD modification project spans lands that are held in trust for the Pueblo.

This environmental assessment (EA) analyzes the proposed alternatives and their general impacts on the environment. General impacts were identified because the specific completed designs for the proposed modifications are not yet complete. Additional design detail and specific impacts from the final design will be refined during the Design-Build Contract (Contract No. 140R4023C0006) and may be accompanied by subsequent additional National Environmental Policy Act (NEPA) analysis and documentation. This EA has been prepared in accordance with the Reclamation's NEPA Handbook (Reclamation 2012) pursuant to the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations (CFR) 1500 et seq.), and the U.S. Department of the Interior (DOI) NEPA regulations at 43 CFR 46.

1.2. Purpose and Need for Action

The purpose of the proposed IDD modifications is to comply with the Settlement between Reclamation, BIA, the Pueblo, and MRGCD. As part of the Settlement, the Pueblo, MRGCD, and Reclamation have agreed to reduce sediment entrainment in the east IDD sluiceway and associated irrigation systems to the greatest extent possible. Reclamation, with the support of BIA, MRGCD, the Pueblo, and the State of New Mexico also have a commitment with the U.S. Fish and Wildlife Service (USFWS) to provide fish passage at the IDD for the Rio Grande Silvery Minnow (*Hybognathus amarus*; individuals and populations are referred herein as silvery minnow), which is federally listed as an endangered fish species, and fish passage was one conservation measure

proposed to increase silvery minnow distribution as part of the Middle Rio Grande Biological Opinion (2016 MRG BO; USFWS 2016) for their water operation and river maintenance activities (including habitat restoration). The 2016 MRG BO requires that fish passage be provided at the IDD within six years (Reasonable and Prudent Measure 3).

The proposed modifications are needed to improve sediment management and fish passage at the IDD. The IDD was constructed in the 1930s by MRGCD and rehabilitated in the 1950s by Reclamation. Over decades of irrigation deliveries, large amounts of sediment have been diverted from the Rio Grande, which has resulted in extensive sedimentation of the irrigation canals, and subsequent dredging and disposal of dredged spoils, especially along irrigation canals near the IDD. The annual average of sediment transported through the IDD downstream is about 620,000 tons, with about five percent (30,000 tons) entering the irrigation system (Tetra Tech 2019, Pizzi et al. 2021). In 2022, MRGCD reconstructed the heading gate of the Peralta Main Canal to better manage water and reduce water sediment entering the irrigation system downstream. The extent of sediment reduction by these recent changes has yet to be quantified. The accumulation of sediment in the sluiceway and headworks can reduce water delivery efficiency, and dredged materials (spoils) threaten the natural and cultural resources of the Pueblo by limiting traditional access or irrigation practices, the viewshed, and localized plant germination.

1.3. Decisions to be Made

In accordance with NEPA, Reclamation will approve the proposed project, approve the project with additional mitigation measures, or further evaluate the project through an Environmental Impact Statement. If Reclamation decides that the effects of the proposed project would not be significant, a Finding of No Significant Impact (FONSI) will be prepared for approval of Reclamation's proposed federal actions enabling this NEPA process to conclude.

1.4. Relationship to Statutes, Regulations or Other Plans

A variety of laws, their implementing regulations, executive orders, and other types of requirements apply to federal actions and form the basis of the analysis presented in this EA. The NEPA process requires federal agencies to consider the potential environmental consequences of proposed actions and to enhance the environment through well-informed federal decisions. The CEQ was established under NEPA to implement regulations (40 CFR) and to oversee federal policy in this process.

Reclamation must comply with all applicable federal, Tribal, State, and local laws. These laws and regulations may include, but are not limited to, the following:

- The Endangered Species Act of 1973 (P.L. 94-325),
- The Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. 703-712),
- The Federal Water Pollution Control Act of 1948 (Clean Water Act), as amended (33 U.S.C. Chapter 26),
- The Clean Water Act of 1972, as amended (P.L. 95-217),
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 U.S.C. Chapter 103),
- The Antiquities Act of 1906, as amended (P.L. 52-209),

- The National Historic Preservation Act (NHPA) of 1966, as amended (P.L. 89-665),
- The Archaeological and Historic Preservation Act of 1974 (P.L. 86-253),
- The Archaeological Resources Protection Act of 1979, as amended (P.L. 96-95),
- The American Indian Religious Freedom Act of 1978, as amended (42 U.S.C. 1996), and
- The Native American Graves Protection and Repatriation Act of 1990 (P.L. 101-601).

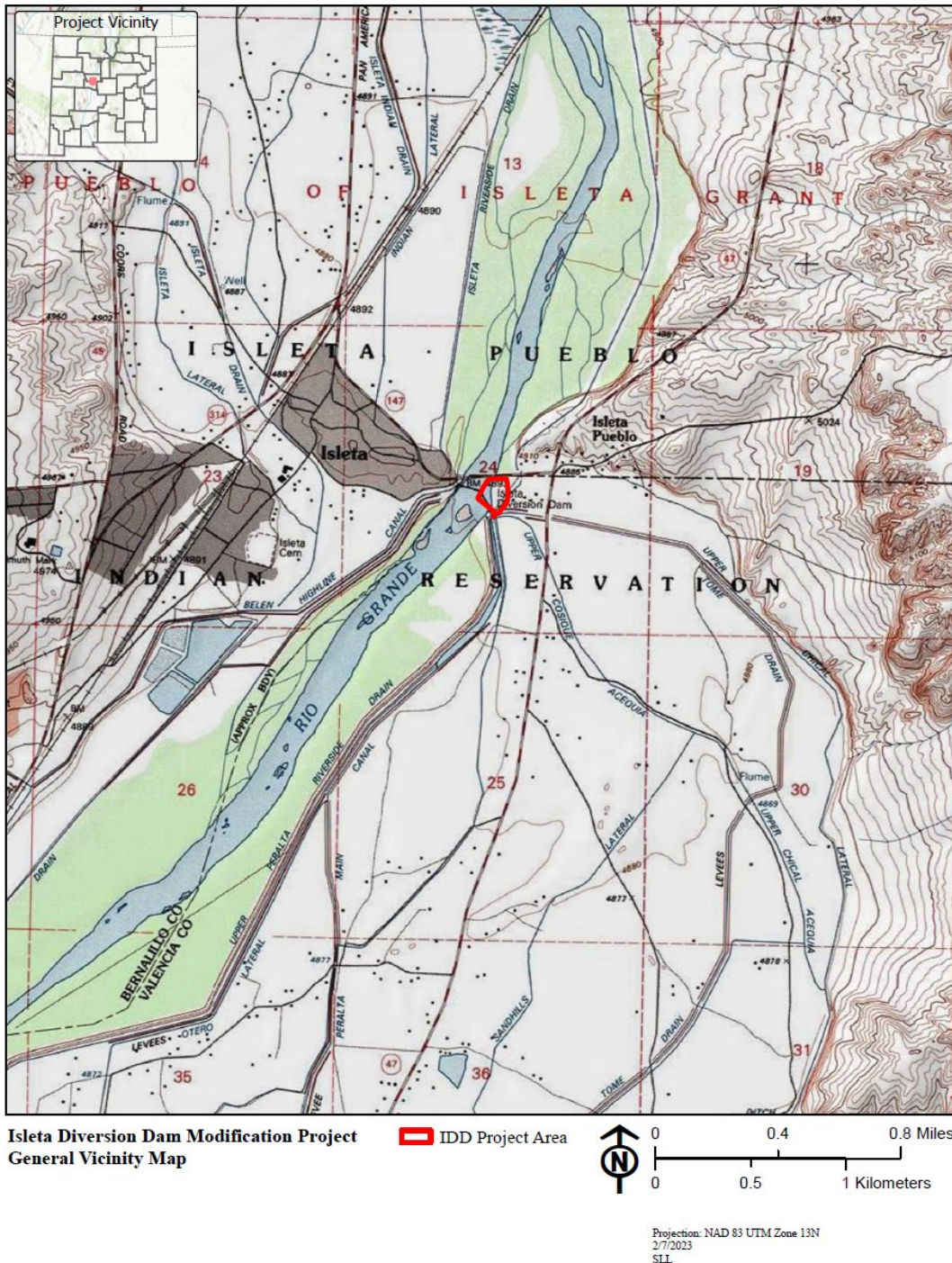


Figure 1. Vicinity (project area outlined in red) of the IDD Modification Project, Pueblo Isleta, Valencia County, New Mexico.

1.5. Scoping, Coordination, and Public Review

Reclamation coordinated with other operators in the Rio Grande, including MRGCD, BIA, the Pueblo leadership, and the USFWS Ecological Services Field Office regarding sediment management and fish passage at IDD. Preliminary modification designs for this EA have been refined based upon feedback from these partners, and coordination with these partners will continue through the Design-Build process. Reclamation held an open house style public scoping meeting on December 20, 2022. Posters were developed to provide background information, preliminary designs to date, and resources that may be impacted. Reclamation may complete further environmental compliance as appropriate during the Design-Build process.

The project interdisciplinary team (IDT) consisted of resource specialists and engineers from Reclamation, the Pueblo, MRGCD, and contractors. Internal scoping by the IDT identified potential issues, developed the purpose and need, and developed a range of alternatives. Using input from the IDT, a list of issues this EA will analyze in detail was developed in accordance with guidelines set forth in the Reclamation NEPA Handbook (Reclamation 2012). The key issues identified during internal scoping are summarized in the table below. The impact indicators provided are used to describe the affected environment for each issue in Chapter 3, measure change in the issue for the different alternatives, and assess the impacts from the alternatives.

	Issue Statement	Impact Indicator
Issue 1	What are the potential impacts to soil from equipment and soil removal from construction activities?	Acres of soil impacted
Issue 2	What are the potential impacts to water quality?	Decreased water quality from sediment transport or spills/leaks of industrial fluids.
Issue 3	What are the potential impacts to federally listed threatened and endangered species?	Take of threatened or endangered species due to construction activities. Acres of habitat available before and after construction of the Proposed Action. Changes in water quality.
Issue 4	What are the potential impacts to vegetation?	Acres of vegetation impacted
Issue 5	What are the potential impacts to the integrity of known cultural sites?	Cultural sites impacted
Issue 6	What are the potential impacts to waters of the U.S. and jurisdictional wetlands?	Acres of surface water and wetland areas impacted
Issue 7	What impact would the Proposed Action have on Indian Trust Assets?	Acres or amount of Indian Trust Assets to be impacted
Issue 8	What are the potential impacts to environmental justice?	Impacts to minority and low-income populations

Issues considered by the IDT and determined not to need a detailed analysis are listed below.

Resource	Rationale for Not Further Discussing in Detail
How would fugitive dust and emissions generated from ground disturbing activities impact air quality and visibility?	All areas in Valencia County, New Mexico are in attainment with the National Ambient Air Quality Standards. During site preparation and construction, air quality would temporarily be impacted by fugitive dust and pollution by exhaust emissions from motorized equipment. Air pollution from dust and exhaust emissions would cease at the completion of the IDD modifications. The temporary increase in emissions from site preparation, realignment of the east bank, sluiceway modifications, and fishway construction would not be expected to result in exceeding the ambient air quality standards for any criteria pollutants in the project area or Valencia County. Fugitive dust from site preparation and construction activities would be controlled as necessary with the application of water or other dust suppressants.
How would the Proposed Action impact migratory birds?	Direct impacts to migratory birds would be avoided with construction activities occurring outside the breeding and nesting season (April 15 to August 15). If construction occurs during April 15 to August 15, then a pre-construction migratory bird nest survey would be conducted. If any active nests are located within the project area and the contractor has determined that project activities cannot be avoided until after the birds have fledged (left the nest), then the contractor must contact the USFWS Migratory Bird Permit Office in Albuquerque, NM at 505-248-7882 to determine the appropriate next steps.
What are the potential impacts to introduction and spread of noxious weeds?	A biological survey was conducted including recording noxious weeds observed in the project area on September 6–12, 2022. Five New Mexico Department of Agriculture listed weed species were observed in the project area. No herbicide use is proposed under the Proposed Action. Under the Proposed Action, design features would be implemented to prevent establishment and spread of noxious weeds (See Section 2.1.2).
How would the Proposed Action impact water quantity?	The use, maintenance, and operations of the IDD would continue, but the Proposed Action, including mechanization of some of the IDD radial gates, would not change the overall amounts of water flow to or from the Rio Grande.
Would the Proposed Action use or produce hazardous materials?	No chemical subject to reporting under the Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds would be used, produced, stored, or disposed of annually in association with the Proposed Action. No extremely hazardous substances, as defined in 40 CFR 355, would be used, produced, stored, transported, or disposed of in association with the Proposed Action. Design features would be implemented to minimize or avoid impacts from solid wastes (See Section 2.1.2).

The draft EA was available for a 30-day public comment period from February 28 to March 28, 2023. Notices were published in the Pueblo of Isleta Newsletter and the Albuquerque Journal.

Reclamation also posted notices on the Albuquerque Area Office’s website and MRGCD website. A summary of public comments and Reclamation’s responses are provided in Appendix D of this EA.

2. ALTERNATIVES

2.1. No Action

While a No Action Alternative is not required in an EA under CEQ and DOI regulations, Reclamation’s practice is to include it because it provides a baseline reference, enabling decision makers(s) to compare the magnitude of environmental effects of the Proposed Action (Reclamation 2012). Under this alternative, the IDD would not be modified, and a fishway would not be constructed. In addition, there would be no changes to river, sluiceway, or IDD radial gates and most gates would continue to be manually operated to maintain head pressure to meet irrigation demand; note that gate 16 is already mechanized.

2.2. Proposed Action

The Proposed Action would improve sediment management and fish passage at the IDD by realigning the east bank, modifying the Peralta Sluiceway, and installing a fishway at the IDD to provide conditions for upstream passage by silvery minnow (see Appendix A for preliminary plan drawings). Most of the IDD radial gates are manually operated and some of these gates may be mechanized to assist the process of maintaining head pressure for irrigation or fish passage. Approximately 5 acres immediately adjacent and within the Rio Grande would be impacted by this alternative (Figure 2). The designs will be finalized during the Design-Build Contract and may require additional NEPA analysis and documentation. Construction is expected to take place during the non-irrigation season. Construction is expected to be completed by the end of 2027.

East Bank Realignment and Sluiceway Modification

Reclamation is proposing to realign the east bank upstream of the dam to reduce sediment entering the Peralta Sluiceway. The east bank is convex and would be realigned to be concave and reinforced to prevent erosion using protections such as stone toe or bioengineering bank protection. Approximately 6,750 cubic yards of material would be removed to realign the east bank. All material would be hauled along an existing road to a nearby spoil yard, approximately 0.3 mile south of the IDD (Figure 2).

The Peralta Sluiceway along the east bank would also be modified to further reduce the sediment load diverted from the Peralta Sluiceway into the canal headworks. The existing sluiceway would have a concrete wedge added to the floor to increase the slope to 3.5 percent and the ramped floor would be reinforced concrete. The increased slope would allow sluicing operations to efficiently move sediment deposited in the sluiceway.

Fish Passage

Fish passage would be accomplished by constructing a fishway in the Rio Grande at the IDD (Appendix A, A2). The fishway would be an engineered channel containing walls and rows of concrete baffles, which would create pools to provide resting areas for swimming fish. The fishway could have a 6-inch-deep layer of gravel and cobble to reduce the flow velocity. This structure would be placed in the river parallel to the flow downstream of the IDD. The upstream inlet would have a mechanized sluice gate to control flow into the fishway. Provisions would be made for access from the IDD deck along the fishway to allow for maintenance activities. The fishway would be maintained and operated by MRGCD. Some of the IDD radial gates may be mechanized to assist maintaining the head pressure for irrigation or fish passage.

The fishway could be constructed by replacing a radial, river gate near the center of the dam with a concrete fishway extending less than 10 feet upstream of the dam and approximately 150 feet downstream of the dam. The width of the fishway has not been decided yet but is expected to be approximately 6 feet in width and the overall structure width is expected to be 8 feet and 15 feet upstream and downstream of the IDD, respectively. The structure would be wider on the downstream side because of the width of two alternating runs. The orientation or specific location of the entrance and exit of the fishway may vary (less than 5 percent) based upon the final design. Excavated material spoils would be stockpiled at the existing spoils yard, approximately 0.3 miles south of the IDD, or an alternative disposal site to be determined, if necessary. Excavators and dozers would be used to perform the excavation operations. All construction would occur after spring runoff and outside the irrigation season (i.e., construction in November through March 1).

The IDD has 30 radial, river gates separated by piers that support the concrete diversion dam deck spanning the Rio Grande. The operation and maintenance of the river and sluiceway gates adheres to the IDD standard operating procedures (SOP) (Reclamation 2015b). The operations of the river and sluiceway gates described in the SOP helps to reduce and minimize sediment build up in the irrigation headworks as well as describe the gate operations during emergencies, routine operations, periods of extreme high flow, and maintenance activities. Currently, all gates are operated by being fully open, closed or in between depending on the flow of the river and the need to maintain head pressure to meet irrigation demand. During peak spring runoff, (above about 3,000 cubic feet per second [cfs; mean daily flow]), some or all river gates are fully open (Baird and Sixta 2015). During low summer flows all river gates are closed except one gate (Gate 16), which is operated to adjust pool levels and may also benefit silvery minnows downstream. Minor additional flows or leakage may also occur from gates that seal imperfectly. Additional flows have also been provided along the west bank to provide for the Pueblo's traditional purposes. The river, sluice, and head gates are operated to maintain a pool behind the dam for head pressure to divert water into the Peralta Main and Belen Highline canals during irrigation season. With the proposed action, all river, sluiceway, and headworks gates could eventually be mechanized. Further analyses associated with the final design will inform whether all gates should be mechanized, or if automation can be prioritized for only certain gates (such as those impactful to the performance of the sluiceway modifications). When the fishway is in operation, an upstream gate would be operated to provide flows within the fishway structure to accommodate the swimming abilities of silvery minnow. This fishway gate could be closed during periods of high spring runoff to reduce entrainment of sediment and debris, during low flow when water is unavailable, or during non-irrigation season when river gates are open.

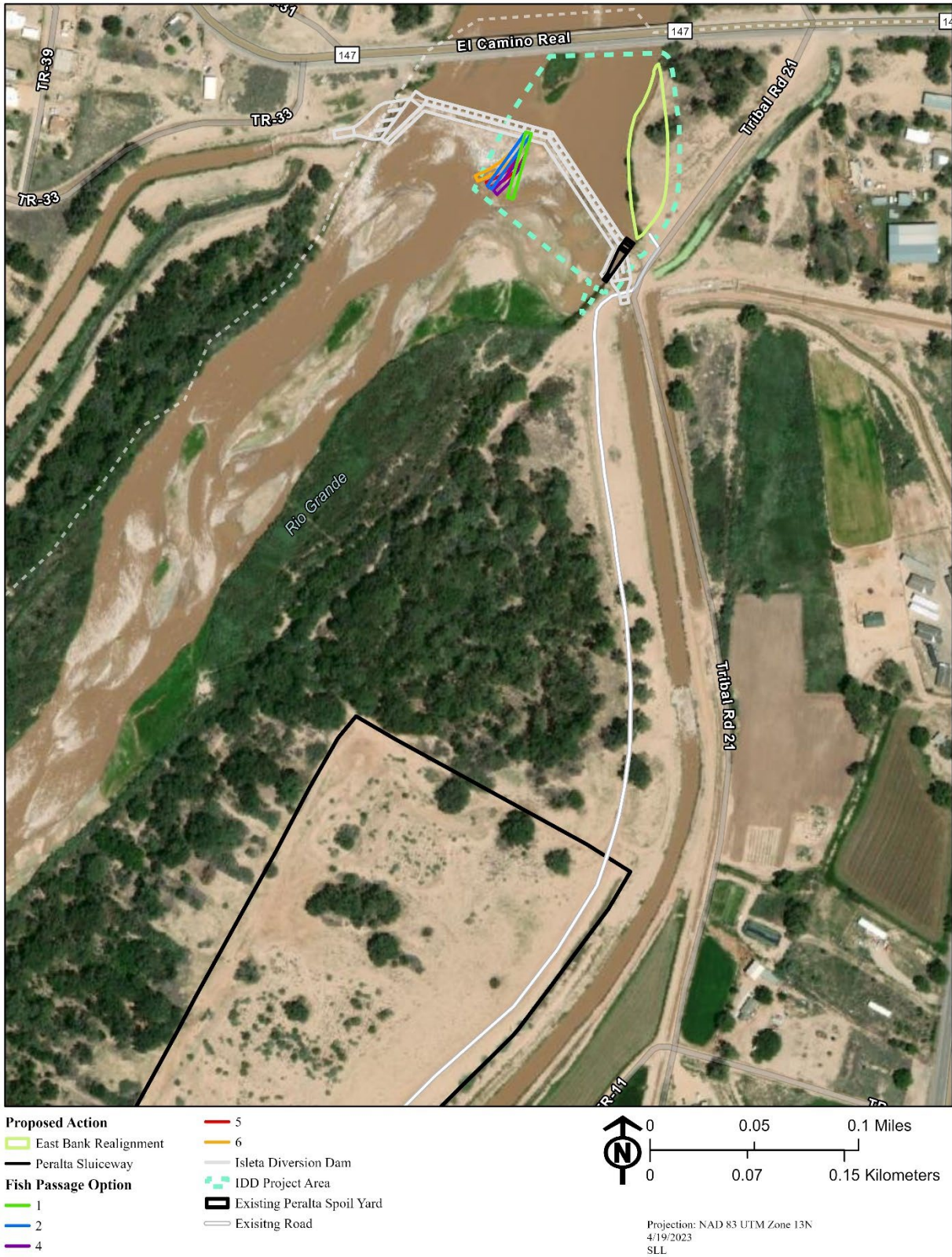


Figure 2. East Bank Realignment, Peralta Sluiceway Modification, and Fish Passage Areas of Disturbance for the Proposed Action.

Access

Access to the Project Area will only be from State Highway 147 and on Tribal Road 21. Hauling of construction equipment will proceed with care as the Pueblo does not normally experience large volumes of traffic or heavy equipment. There would be a traffic control plan implemented during realignment of the east bank and construction of the fishway and Peralta Sluiceway modifications. Staging areas for equipment and materials would be located near the proposed project area. A staging area has not been formally identified but would be prior to construction activities with Pueblo approval. Areas disturbed by previous construction activities along the east bank, upstream of the IDD, and at the Peralta Spoil Yard, have been planned or used for staging areas (see U.S. Army Corps of Engineers 2013 for examples).

In order to install the fishway, vehicles and equipment would need to be driven within the river channel in the proposed project area identified in Figure 2. Earthen ramps could be constructed to allow heavy equipment access within the river channel. An exact location has not been identified for accessing the Rio Grande but will likely be from the east bank north of the dam and from the east bank downstream of the dam as shown in Figure 2. Best Management Practices (BMPs) identified in the 2016 MRG BO would be implemented to reduce impacts to the river environment, water quality, and silvery minnows, and reduce the risk of spills or leaks.

Temporary Water Operations

Most construction would likely occur during the non-irrigation season, mainly during winter (November 15 to March 1), when the river is at low flows. The proposed project area would need to be dewatered to place foundation materials that would consist of a subgrade layer of gravel and riprap, and to place the concrete forms for the fishway. The Rio Grande could be temporarily diverted by placing a flow barrier along all boundaries of the project area or by temporary earthen ramps. The flow barrier would temporarily reroute the Rio Grande around the construction zone. The flow barrier would be removed after construction is completed. There could be need to use pumps to dewater the area further.

Long-term Operation and Maintenance

Specific information regarding operation of the fishway under this alternative is not yet known because the design has not been finalized. At this time, it is expected that the fishway structure would operate during the irrigation season when the river gates at IDD are closed and there is no other route for silvery minnows to move upstream. Maintenance activities would be expected to include routine sediment and debris removal to keep the fishway clear. Provisions would be made to accommodate fish passage maintenance access from the IDD deck. Routine sediment and debris removal from the fishway would occur during maintenance operations at the IDD.

2.2.1. Design Features, Stipulations, and Requirements

The 2016 MRG BO describes a complete list of BMPs for activities affecting several special status species. Relevant, but not all, BMPs from this list are described below.

General

- The Contractor shall not allow construction, storage, or parking of vehicles or equipment outside the proposed project area footprint.
- The proposed construction project footprint should be kept to the minimum width required for the operation.

Equipment and Operations

- Equipment would be refueled at least 100 feet (outside of the floodplain) from the river.
- Fuel, oil, hydraulic fluid, or substances of this nature would be stored within sealed, storage containers or facilities that are located outside the floodplain and provide secondary containment per Storm Water Pollution Prevention Plan and use Storm Water Pollution Prevention Plan criteria for storage and refueling.
- Appropriate spill containment and clean-up materials will be onsite and construction and other on-site staff will have proper training to deploy and utilize.
- Prior to being onsite, all equipment would undergo high-pressure spray cleaning and inspection prior to initial operation in the project area.
- All equipment would be checked each morning for leaks. Leaking equipment would be removed from the project site until repaired and cleaned.
- Equipment would be parked on pre-determined locations on high ground away from the river overnight.
- Equipment will be operated in the river channel as little as possible to minimize disturbance of sediments. When operating equipment in the wetted channel, the following design features will be followed to minimize disturbance of sediments:
 - Minimize heavy equipment work in the river channel
 - Park equipment outside the river channel on pre-determined locations when not operating
- To allow silvery minnow time to leave the area before in-water work begins, equipment will initially enter the water slowly. In-water work will be fairly continuous during workdays, so that fish are less likely to return to the area once work has begun.

Natural Resources

- Equipment would be cleaned and free of plant and soil residue. All construction equipment would be pressure washed and/or steam cleaned before entering the watershed to ensure that all equipment, machinery, rocks, gravel, and other materials are cleaned and weed free and inspected daily for leaks. If equipment is used in an area containing invasive or noxious weeds, it would be cleaned before it is moved to another location.
- Construction activities should occur outside the migratory bird breeding and nesting season (April 15 to August 15). If construction occurs during this period, then a pre-construction migratory nesting survey should be completed. If any active nests are located within the project area and the contractor has determined that project activities cannot be avoided until after the birds have fledged (left the nest), then the contractor must contact the USFWS Migratory Bird Permit Office in Albuquerque, NM at 505-248-7882 to determine appropriate next steps. Reclamation's Albuquerque Area Office biologist should be consulted prior to contacting the USFWS.

- Silvery minnows that become stranded during dewatering could be netted by permitted biologists to collect and relocate minnow to wetted, connected upstream or downstream habitats.

Cultural Resources

- If previously unknown archeological resources or skeletal remains are discovered, ground disturbance would be stopped in the area of any discovery, protective measures would be implemented, and procedures outlined in 36 *Code of Federal Regulations* Part 800 would be followed, as applicable. The Pueblo Tribal Historic Preservation Officer (THPO) would be notified of the discovery. Resources would be evaluated for their National Register of Historic Places (NRHP) significance by the Pueblo THPO, and adequate mitigation of project impacts would be implemented. Work would not commence until the THPO has given approval.

2.3. Alternatives Considered but Eliminated from Detailed Analysis

A number of fishway alternatives were considered (Tetra Tech 2019, Pizzi et al. 2021, Tetra Tech 2022, Baird et al. 2023; that are incorporated here by their reference), including a fishway primarily constructed upstream of the IDD. However, this alternative was dismissed due to the higher estimated construction costs, design complexity, and risks and duration of construction needed to protect the existing IDD apron upstream (Tetra Tech 2022).

3. Affected Environment and Environmental Consequences

This chapter describes the existing conditions relevant to the issues presented in Table 1 and provides a comparative analysis of the direct, indirect, and cumulative impacts of the alternatives. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. As defined by NEPA regulations (40 CFR 1501.3(b)(1)), only those resources and conditions having the potential to be affected by the action are discussed and analyzed within this section.

3.1. Soil Resources

3.1.1. Affected Environment

There are three soil map units in the project area (Table 1). The predominant soil in the project area is the Riverwash soil mapping unit. This soil mapping unit is within and adjacent to the Rio Grande and consists of sandy soils that are somewhat poorly drained and formed from stream alluvium

deposits. The Gila loam soils found along the east bank consist of loamy sands and sandy loams that are deep, and well drained soils. These soils are formed from coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rock. The Natural Resources Conservation Service’s (NRCS) Web Soil Survey website (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>) provides complete soil information.

Table 1. Soils Mapped in the IDD Modification Project Area.

Map Unit	Acres in Project Area	Textures	Parent Materials
Riverwash	4	Sand; stratified coarse sand to sandy loam	Stream alluvium derived from igneous and sedimentary rock
Gila loam, 0- to-1-percent slopes	0.90	Loam; gravelly fine sandy loam; loamy fine sand; fine sandy loam; silt loam	Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rock
Torrifluvents, frequently flooded	0.1	Loam; very fine sandy loam; sand	Alluvium derived from igneous and sedimentary rock

Source: U.S. Department of Agriculture NRCS Soil Survey Staff 2022.

3.1.2. Impacts from the No Action

Under the No Action Alternative, no direct impacts to soil resources are expected as no ground disturbance would occur. High amounts of sediment would continue to be diverted with the flow into the Peralta Sluiceway headworks, requiring dredging and removal of dredged material to continue contrary to the Settlement. The continued large sediment deposits and maintenance practices would not affect the existing soils in the project area.

3.1.3. Impacts from the Proposed Action

Under the Proposed Action Alternative, up to 0.68 acres (6,750 cubic yards) of soil could be removed to realign the east bank. The installation of the fishway would also remove soil from the riverbed, but the exact dimensions of the fishway and amount of soil that could be removed are not known at this time and will be finalized during the Design-Build process. Installing a slope or wedge into the existing Peralta Sluiceway may require foundation modifications to support the concrete wedge and could require soil removal within the existing sluiceway footprint. All excavated soil would be transported along existing roads to the staging area, the existing Peralta Spoil Yard, or to an alternative disposal location. The soils excavated could be stockpiled and used for fill material for the fishway construction and Peralta Sluiceway foundation modifications if needed. The excavated soils could also be used for construction of earthen ramps or barriers and later removed and disposed.

Soil transported to the staging area or existing spoil yard could be exposed to wind and water erosion. Potential for increased water and wind erosion would depend on precipitation and wind events but it is expected that risk of erosion would be low due to the generally flat terrain and the surrounding riparian vegetation would act as a windbreak in the project area, and implementation of BMPs as agreed upon between MRGCD and the Pueblo for sediment management.

3.2. Hydrology, Hydraulics, and Geomorphology

3.2.1. Affected Environment

Peak flows on this portion of the Middle Rio Grande (MRG) occur in the spring from snow melt runoff, which is dependent on snowpack availability. Therefore, high flows occur during spring snowmelt runoff and low flows often occur during the summer and fall months. Monsoons in the summer months may also result in high flows of mostly short duration. Historically, the MRG had a wide, shallow, braided river channel primarily consisting of sand beds with pockets of gravel and heavy sediment loads (Scurlock 1998, Baird and Sixta 2015). Currently, the MRG has reduced peak flows and decreased sediment supply from tributaries to the Rio Grande, resulting in narrowing of the river channel. Over the last century, the MRG has changed due to human activities, such as irrigation diversion dams and upstream sediment and flood control reservoirs (i.e., Heron, El Vado, Abiquiu, Jemez Canyon, Galisteo, Nambe Falls, and Cochiti), increased land and water use (including groundwater extraction), and climate change (Reclamation 2015a, 2021, USACE 2019).

The IDD is used as a dividing line between the Angostura Reach (between the Angostura Diversion Dam to the IDD) and the Isleta Reach (between the IDD to San Acacia Diversion Dam), which places the IDD project area in two different river reaches. The Rio Grande channel has narrowed both upstream and downstream of the IDD and is transitioning from a braided channel to a single channel (Tetra Tech 2022). Channel narrowing has recently been driven by expansion of bank attached bars and islands. Over time, as bars and islands grow, vegetation encroaches into the channel, promoting floodplain aggradation, sedimentation of side channels, and anchoring of sand bars and islands to the channel banks. Since the 2000s, the U.S. Geologic Survey river gage at Central Avenue has recorded decreased annual flow volumes (Colorado State University 2022; Figure 3). The geomorphic response to the changes in peak flows has resulted in substantial channel narrowing as the additional bed material was stored on the floodplains, along the channel banks, and the sand bed channel incised and coarsened. The channel bed along the IDD is primarily sand with limited fine gravel. If flows increase without adequate increases in bed material supply, future incision is likely to continue because the peak flows are often too low to scour and remove densely vegetated bars and islands (MEI 2006). More detailed information on hydrology, hydraulics, and geomorphology can be found in the Isleta Diversion Dam Preliminary Engineering Analysis Report (Tetra Tech 2019) and in the Hydrology and Hydraulics appendix of the Integrated General Reevaluation Report and Supplemental Environmental Impact Statement by the USACE (2019) and that were incorporated here by their reference.

Climate change has also impacted the hydrology and geomorphology of the Rio Grande, as flows are predominated by snowmelt runoff from mountain ranges upstream (USACE 2019). The Fourth Climate Assessment reported increases in annual temperature for the Southwest Region, with high emission models predicting an 8.6 degrees Fahrenheit (°F) increase by 2100 (USGCRP 2018, Reclamation 2021). Climate change models in the Rio Grande Basin predicted a 5–7°F increase in air temperature by 2100 (USACE 2018, 2019; Reclamation 2021). With climate changes, increases in the frequencies of extreme flooding, extended drought conditions, and changes to the timing of water availability would be expected (Reclamation 2021, Moeser et al. 2022). The Rio Grande is a snowmelt driven system and increased temperatures will impact regional hydrology through changes in the snowpack. Models predict an 18% or more decrease in volume of snowmelt runoff by the end of the twenty-first century (Elias et al. 2015). Furthermore, climate change is predicted to have the greatest impact on Rio Grande flows compared to other snowmelt driven basins (Dettinger et al.

2015). This means there will be an overall reduction in snowpack volume to support essential spring runoff flows, as well as baseflows for the remainder of the year reducing water availability.

3.2.2. Impacts from the No Action

Under the No Action Alternative, no IDD modifications or fishway would be constructed and there would be no change to the trends expected for hydrology, hydraulics, or geomorphology of the MRG. High sediment loads would continue to be diverted through the Peralta Sluiceway requiring dredging and sediment removal, reducing the likelihood of efficient water deliveries for irrigation demand on the Pueblo and downstream. Without fish passage, silvery minnow upstream movements would be prevented when the IDD gates are closed (during the irrigation season), thereby impeding their ability to disperse upstream to spawn eggs or drift larvae into the inundated habitats necessary for their long-term persistence (Mortensen et al. 2020).

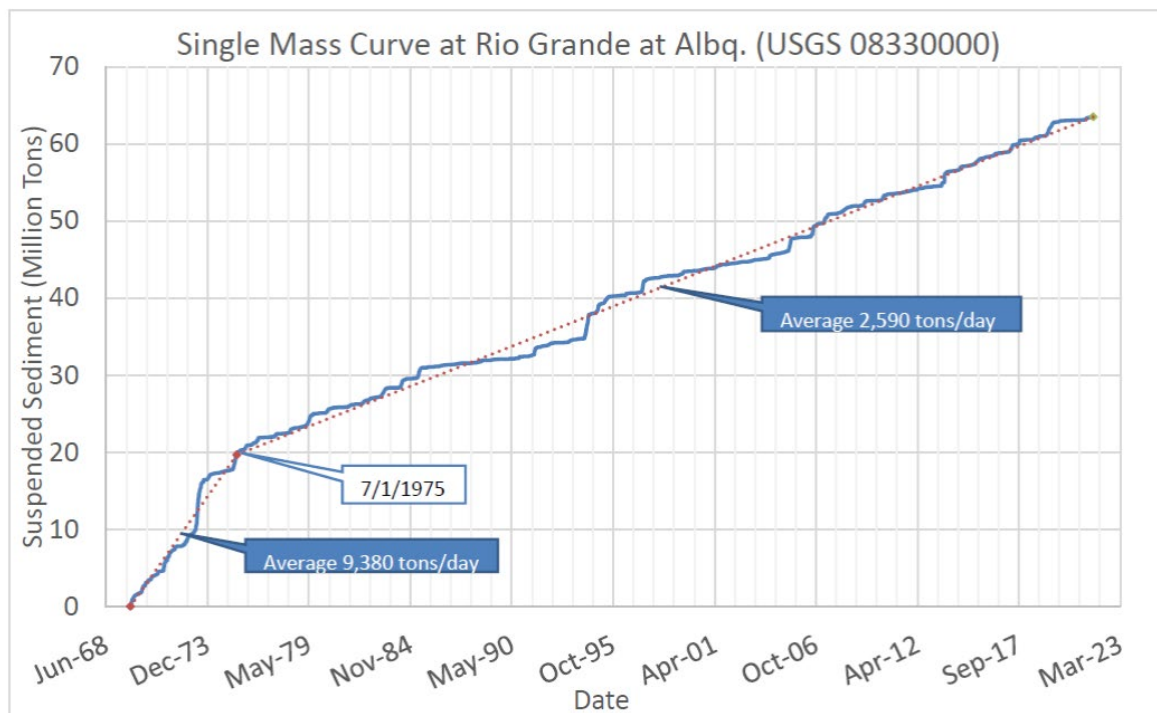


Figure 3. Suspended Sediment Discharge Single Mass Curve for USGS Gage (08330000) at Rio Grande, Albuquerque, NM (Colorado State University 2022).

3.2.3. Impacts from the Proposed Action

Constructing IDD modifications and a fishway through a radial, river gate near the center of the IDD inside the river channel is not expected to change the hydrology or hydraulics. There could be localized geomorphic changes from the realignment of the east bank. The realignment would make the bank more concave widening the channel upstream of the IDD. The realignment of the east bank in combination with the Peralta Sluiceway modifications would reduce the sediment amount diverted into the headworks compared to existing conditions (Tetra Tech 2022). The reduction of sediment loads diverted to the Peralta Main Canal would reduce potential for interruptions of water deliveries for irrigation.

The fishway would be wider on the downstream side, narrowing the river channel. However, the channel bed below the IDD is sufficiently coarse that this alternative would not be expected to

result in geomorphic changes and modifications would undergo USACE reviews (33 CFR 408). The Rio Grande would still carry a high sediment load, and sediment and debris would be expected to be deposited in the constructed fishway necessitating some operational changes, such as opening or closing gates or grates, as well as maintenance changes (e.g., removing debris, flushing sediment, or retrieving monitoring data). The fishway would be designed using a bed roughness and a geometry that ensures water flow is conveyed effectively and slowly, so that silvery minnows are able to swim through it during normal operations when IDD river gates are closed.

3.3. Water Quality

3.3.1. Affected Environment

The project area is within the Rio Grande Hydrologic Unit Code (HUC 13020203 – Rio Grande Albuquerque), a perennial river and jurisdictional water of the U.S. Protecting water resources is of immense importance to the Pueblo. The Pueblo wants to ensure the protection of surface waters, so they can continue traditional and cultural uses of surface waters as well as protect the health and safety of their people and residents. The Pueblo developed water quality standards for surface waters on the Pueblo to protect and sustain designated water uses and water quality, and to promote the social welfare and economic well-being of the Pueblo (Pueblo of Isleta 2002). The designated water uses for the Rio Grande in the project area include warmwater fishery, primary contact ceremonial, primary contact recreational, agricultural water supply, industrial water supply, and wildlife. Long-term water quality data for the IDD area are lacking, but the nearest available data occurs north of the project area. Water quality parameters that are typically monitored include surface water temperature, pH, turbidity, dissolved oxygen, suspended sediments, conductivity/total dissolved solids, and bacteria (New Mexico Environmental Department (NMED) 2016). Water quality typically contains high turbidity readings due to large amounts of sediment naturally present in the system (Buhl 2011, Tetra Tech 2019). In addition, turbidity increases when river flows are high and runoff from upstream arroyos deposits additional sediment during storm events. Suspended sediment (particularly from urban areas or wildfire scars) can contain compounds that utilize oxygen from the water column that may result in oxygen deficits that can affect aquatic life (Reale et al. 2015). The most recent water quality summaries of the MRG near the IDD show that water quality parameters tested were below the Pueblo's water quality standards (Buhl 2011). There are other water quality impairments identified in the Rio Grande outside the Pueblo boundary (NMED 2022).

Section 303(d) of the Clean Water Act, states that authorized states and tribes are required to develop lists of impaired waters that do not meet the water quality standards. The NMED has identified the Rio Grande segment north of the Pueblo boundary as impaired due to mercury, dissolved oxygen, and *E. coli* exceedances (NMED 2022). There is also a fish consumption advisory due to polychlorinated biphenyls detected in fish tissues collected from this segment (NMED 2022). The Rio Grande segment south of the Pueblo boundary has been identified as impaired due to elevated water temperature (NMED 2022). A total maximum daily load (TMDL) has been completed and approved by the U.S. Environmental Protection Agency for *E. coli* in 2010 (NMED 2022). A TMDL for elevated temperature is being prepared and is expected to be done by 2023 (NMED 2022). These TMDLs may require monitoring and reduction of certain water quality parameters in any discharges to impaired waters.

3.3.2. Impacts from the No Action

Under the No Action Alternative, no direct impacts to water quality are expected as no ground disturbance would occur. Sediment buildup at the canals and upstream of the IDD would be expected to continue, which could negatively impact water quality from increased turbidity, suspended sediment, oxygen sags, and amount of sediment deposited.

3.3.3. Impacts from the Proposed Action

Construction activities for the proposed IDD modifications and fishway will temporarily alter water qualities by increasing turbidity, suspending sediment into the water column, and subsequent oxygen sags. Additional analysis and monitoring may be necessary to verify water quality impacts will be localized within the project area by its containment features or diluted upon discharge downstream. The increased suspended sediment and turbidity may contribute a small increase to the existing sediment load carried by the Rio Grande, which may result in temporary oxygen sags until diluted. The project area will need to be dewatered, temporarily rerouting the Rio Grande around the project area for construction, by using dewatering methods, installing flow barriers along the boundaries of the project area, such as temporary earthen berms, or by other means (e.g., combining methods with selected gate operations during construction). Water quality within the project area will be impacted temporarily by increased sediment concentrations and turbidity until earth moving activities were completed and barriers removed. Both installation and removal of the dewatering barriers are expected to have minor, temporary impacts to water quality that will be diluted by the Rio Grande flows.

The excavated soils will be transported and stockpiled to the existing spoil yard south of the project area. Prior to construction activities occurring, all required permits in compliance with the Clean Water Act, including the National Pollutant Discharge Elimination System Construction General Permit and a Storm Water Pollution Prevention Plan will be obtained. A storm water pollution prevention plan will be prepared and implemented during construction to reduce potential impacts to water quality and disturbance to river channel and surrounding riparian area.

There may be potential for accidental spills or release of materials (e.g., oil, gas) that could impact water quality. Potential impacts to water quality from accidental spills would be incidental during construction. BMPs (Reclamation 2015a), design features, and adherence to the conditions of the U.S. Army Corps of Engineers (USACE) permits and Pueblo Water Quality Certifications would minimize the potential for adverse effects from accidental spills or construction activities. BMPs that would be implemented to reduce potential impacts to water quality include but are not limited to steam cleaning equipment, daily inspection of construction equipment for leaks, removing leaking equipment from the site; keeping fuels, oils, and lubricants in a sealed storage container or off-site; and refueling at least 100 feet from the river outside the ordinary high-water mark within the floodplain.

3.4. Riparian and Wetland Resources

3.4.1. Affected Environment

The proposed project area is located along the Rio Grande, which has been mapped by the National Wetland Inventory as a Palustrine Unconsolidated Bottom Permanently Flooded-Diked/Impounded (PUBHh), Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded (R2UBH), and Riverine Lower Perennial Unconsolidated Shore Seasonally Flooded (R2USC) wetlands (USFWS 2023). The riparian area in the Rio Grande is dominated by coyote willow (*Salix exigua*), Russian olive (*Elaeagnus angustifolia*), salt cedar (*Tamarix ramosissima*), and sub-dominant cottonwood (*Populus deltoides*). Two small wetland areas were delineated within the Rio Grande floodplain on the island north of the IDD, totaling 0.043 acre (Figure 4; BRIC 2022). The Rio Grande is the water source for both wetlands; however, the water level is influenced by the IDD. For this reason, the wetlands are significantly disturbed because it appears the hydrologic conditions are primarily caused by the inundation of water from IDD operations.

The southern wetland (along the southeast edge of the island) is 0.039 acre and classified as a palustrine-unconsolidated bottom-permanently flooded-diked/impounded–broadleaf cattail (*Typha latifolia*)-coyote willow-hard-stem bulrush (*Schoenoplectus acutus*) (Cowardin et al. 1979). The northern wetland (northeast edge of the island) is 0.004 acre and classified as a palustrine-unconsolidated bottom-permanently flooded-diked/impounded–fragrant flatsedge (*Cyperus odoratus*) (Cowardin et al. 1979). Dominant vegetation within the southern wetland included coyote willow, broadleaf cattail, common spikerush (*Eleocharis palustris*), ravenna grass (*Saccharum ravennae*), and hard-stem bulrush. Dominant vegetation within the northern wetland included fragrant flatsedge, clustered flatsedge (*C. glomeratus*), and cockspur grass (*Echinochloa crus-galli*). The non-wetland areas were dominated by coyote willow and Indian hemp (*Apocynum cannabinum*), along with noxious weeds (e.g., ravenna grass). The wetlands delineated to the Rio Grande where hydric soils or hydrophytic vegetation became non-existent. The proposed project area is located within the 100-year floodplain of the Rio Grande (Federal Emergency Management Agency 2023). The Ordinary High-Water Mark was delineated on the east bank north and south of the existing diversion dam and occurs at approximately 4,882 feet of elevation downstream and approximately 4,888 feet of elevation upstream.

Jurisdictional Waters of the United States, including wetlands, are protected under several rules and regulations including federal guidelines outlined by the Clean Water Act; Sections 401, 402, and 404, Executive Order (E.O.) 11988 (Floodplain Management), E.O. 11990 (Protection of Wetlands) and by the review processes by the Pueblo and further downstream by the New Mexico Environment Department Surface Water Quality Bureau. Appropriate Clean Water Act permits would be obtained prior to starting proposed modifications. There are approximately 3.70 acres of Waters of the United States, in the proposed project area; this excludes the IDD and associated infrastructure or wetlands.

3.4.2. Impacts from the No Action

Under the No Action Alternative, no direct impacts to riparian and wetland resources are expected as the IDD modifications and fishway would not be constructed. Turbid conditions and sediment depositions upstream of and within the headworks of the IDD would be expected to continue. Over time an increase in wetlands could occur as sediment continues to accumulate forming an island in the center of the channel upstream and vegetation becomes established. The IDD (when the river gates are closed as well as the presence of the Highway 147 bridge piers) slows water flows upstream

that favors deposition of sediment in the river channel. After high water flow events, upstream islands have been removed or changed shape along with their wetland vegetation. Cycles of wetland creation and removal by riverine processes of sediment deposition, erosion, or bank attachment along with water elevation changes would be expected to continue under the No Action Alternative and affect the quantity and quality of wetland resources on the island upstream.



Figure 4. Delineated Wetlands in the Project Area from the IDD Wetland Survey Report.

3.4.3. Impacts from the Proposed Action

Under the Proposed Action Alternative, wetland vegetation may be trampled or removed during construction of the proposed earthen ramps that would be used for vehicles and equipment to access the river during construction of the fishway. With construction of the fishway, the wetlands observed on the island in the Rio Grande floodplain will be disturbed. These wetlands are 0.043-acre in size. The wetlands on the island appear to be influenced by local water levels affected by the existing IDD operations as higher water levels inundate parts of the island fostering wetland vegetation compared to other areas on the island that are not frequently inundated.

Earthen ramps could be constructed to allow heavy equipment access within the river channel. An exact location has not been formally identified for accessing the Rio Grande but would likely be from the east bank to the island north of the dam and the east bank downstream of the dam, which could temporarily alter the natural and beneficial values served by the floodplain. The earthen ramps or other flow barrier features will be proposed during the Design-Build process to the extent necessary, and further environmental review will be conducted in consultation with the USACE to ensure that these structures will not contribute to flooding nor prevent the ability of the Rio Grande floodway to convey floodwater. If the island is impacted, after construction and barrier removal, BMPs would be implemented to remove noxious weeds from the impacted wetland areas as required by USACE and the Pueblo. In addition, wetlands would be monitored to verify their recovery after construction and barrier removal in adherence to the conditions in the USACE permit that would minimize adverse effects to wetlands, Waters of the U.S., and other floodplain resources below the ordinary highwater mark.

3.5. Vegetation

3.5.1. Affected Environment

The vegetation community in the proposed project area was mapped as a semidesert grassland (Brown 1994). Dominant vegetation in the uplands along the east bank consisted primarily of noxious weeds including Russian thistle (*Salsola tragus*) goathead (*Tribulus terrestris*), ragweed (*Bassia scoparia*), and silverleaf nightshade (*Solanum elaeagnifolium*) and six weeks grama (*Bouteloua barbata*).

As discussed in the riparian and wetlands section, riparian areas along the Rio Grande are dominated by coyote willow, Russian olive, salt cedar, and sub-dominant cottonwood. Sub-dominant vegetation includes broadleaf cattail, cocklebur, stinkgrass, ravenna grass, hardstem bulrush, barnyard grass, rusty flatsedge, clustered sedge, three-square bulrush, Indian hemp, common spike-rush, western goldenrod (*Euthamia occidentalis*), smooth scouring rush (*Equisetum laevigatum*), and American bugleweed (*Lycopus americanus*).

3.5.2. Impacts from the No Action

Under the No Action Alternative, no impacts to vegetation are expected as no ground disturbance would occur. The MRGCD would continue to maintain the operational capacity of the IDD through operations and maintenance activities (Reclamation 2015b). Such activities occur mostly within the irrigation headworks and associated canal systems but could include removal of debris from the downstream apron of the IDD accessed by vehicle or by foot along an earthen slope below the Peralta Sluiceway within the project area when flows are low, and portions of the riverbed are exposed. In 2013, using excavators, the USACE (2013) removed approximately 83,000 cubic yards

of riverbed sediment from below the IDD and placed those spoils into the Peralta Spoil Yard prior to their disposal at an upland site. The Pueblo's Bosque and Riverine Restoration Project (Reclamation 2020) describes the restoration of the bosque (forested area near the river) in the project area by treatment of noxious weeds along with planting native vegetation within 10 years.

3.5.3. Impacts from the Proposed Action

The realignment of the east bank and construction of the earthen ramps under the Proposed Action Alternative would disturb up to 1.5 acres of vegetation (i.e., up to 0.5 acres of north island and up to 1 acre of vegetation along east bank). Portions of the east bank are barren with vegetation scattered along the edges of the bank (Reclamation 2020). There are a few taller cottonwood trees in the area that may be removed. Reclamation would mitigate the loss of large, mature cottonwood trees by a 10-to-1 replacement under the implementation of BMPs (Reclamation 2015a). The removal of up to 1.5 acres of upland vegetation would remove less than 1% of the semidesert grassland vegetation community identified within the area. Therefore, no substantial populations or communities of native plants would be affected by the Proposed Action. BMPs would be implemented to prevent establishment of noxious weeds in the construction work area, such as cleaning equipment before entering the project area to ensure that all equipment, machinery, rocks, gravel, and other materials are cleaned and weed free (see section 2.2.1 for additional design features).

3.6. Threatened and Endangered Species

3.6.1. Affected Environment

Under the Endangered Species Act of 1973 (ESA), all federal departments and agencies have the responsibility to avoid jeopardizing federally listed species that are endangered or threatened, to address impacts to candidate species actively proposed for listing, and to avoid adversely modifying designated critical habitat. The USFWS evaluated Reclamation's proposal to establish connectivity through irrigation delivery dams along the Middle Rio Grande along with other proposed actions. In 2016, the USFWS issued a Final Biological and Conference Opinion for Bureau of Reclamation, Bureau of Indian Affairs, and Non-Federal Water Management and Maintenance Activities on the Middle Rio Grande, New Mexico (MRG BO; USFWS 2016) to address the effects of a wide variety of proposed actions on the endangered Rio Grande Silvery Minnow, other listed species, and their critical habitats. The MRG BO provided an Incidental Take Statement with nondiscretionary measures, terms, and conditions that further minimizes the harms to ESA-listed species and critical habitats.

A list of threatened and endangered species for the Proposed Action was acquired from the USFWS Information for Planning and Consultation tool (IpaC 2022; Appendix B). The USFWS identified seven species that could occur within the project area (Table 2). One species, Rio Grande Silvery Minnow (silvery minnow; *Hybognathus amarus*), was retained for further analysis. The other species were dismissed from further analysis because of either lack of suitable habitat, or the project area was outside the current range of the species, both of which make occurrence in the project area unlikely.

In addition, the Pueblo's Natural Resources Division was consulted to solicit input on threatened, endangered, and species of concern for the proposed project area. The Natural Resources Director, Joseph Lujan, and the Tribal Historic Preservation Officer were consulted informally, and they stated the Pueblo does not have any protected plant species within the proposed project area.

There were no designated or proposed critical habitats within the project area (USFWS 2022). The nearest final designated critical habitat for the Rio Grande Silvery Minnow, Yellow-billed Cuckoo, and Southwestern Willow Flycatcher, are less than 2 miles downstream of the project area (USFWS 2022). The Rio Grande within the proposed project footprint would be temporarily diverted, thus depletion of water into the Rio Grande would not be an issue since flows downstream of the project area would not change. Additionally, adherence to the BMPs from the 2016 MRG BO, design features, and conditions in the USACE permit would minimize impacts to water quality and critical habitat downstream. Therefore, critical habitat would not be adversely modified and was not carried forward for analysis in this EA. Additional analysis of impacts to downstream critical habitat may be included in additional NEPA documentation required for the Design-Build process.

Table 2. Federally Listed Threatened, Endangered, and Candidate Species and Their Likelihood of Occurring in the Project Area.

Common/Scientific Name	*Status	Potential to Occur
	Bird	
Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	ESA T MBTA	Nests in mature mixed-conifer or pine-oak forests dominated by Douglas fir, Ponderosa pine, or Gambel oak in mountains and canyons (USFWS 2012). High canopy closure and tree density is an important component in breeding and wintering habitats (New Mexico Game and Fish 2010). Suitable habitat is not present in the project area.
Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>)	ESA E MBTA	Nests in dense riparian habitats near or adjacent to perennial rivers or underlain by wet soil (USFWS 2002). Southwestern Willow Flycatcher (flycatcher) is known to nest along the Middle Rio Grande. This segment of the Rio Grande in the project area lacks dense riparian vegetation with closed canopies suitable for nesting. The Southwestern Willow Flycatcher may be a migrant through this river segment of the Rio Grande. Surveys have been conducted on various locations throughout the Pueblo on and off since 1994 (Reclamation 2020). Surveys conducted in 2000 only observed two migrant flycatchers located south of the project area (NHNM 2000). In addition, surveys conducted from 2017–2019 for the Island Removal Project area (immediately south of the project area) did not detect any flycatchers (Reclamation 2020). Suitable habitat is not present in the project area.
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	ESA T MBTA	Typically nests in native broadleaf riparian areas dominated by cottonwood-willow woodlands or dense mesquite (USFWS 2014). Cuckoos may use portions of the Pueblo for stopover habitat during migration, but this segment of the Rio Grande in the project area lacks mature riparian woodlands. Only occasional migrant cuckoos have been detected within the Albuquerque reach of the Middle Rio Grande (Reclamation 2020).

Common/Scientific Name	*Status	Potential to Occur
		Surveys conducted in 2017 for the Island Removal Project area (immediately south of the project area) did not detect any cuckoos (Reclamation 2020). Suitable habitat is not present in the project area.
	Mammal	
New Mexico Meadow Jumping Mouse (<i>Zapus hudsonius luteus</i>)	ESA E	An obligate riparian species that inhabits tall, emergent wetland vegetation dominated by beaked sedges (<i>Carex rostrata</i>) or reed canary grass (<i>Phalaris arundinacea</i>) or scrub-shrub riparian areas dominated by willows and alders with an understory of primarily forbs and sedges (USFWS 2020). The project area lacks tall, emergent wetland habitat and scrub-shrub riparian areas preferred by this species. Suitable habitat is not present in the project area.
	Fish	
Rio Grande Silvery Minnow (<i>Hybognathus amarus</i>)	ESA E	Currently, the silvery minnow is only found in portions of the Rio Grande in New Mexico from Cochiti Dam extending south to the headwaters to Elephant Butte Reservoir in Socorro County (USFWS 2010). The silvery minnow inhabits river margins, side channels, and off-channel pools with low-water velocities. Suitable habitat has been mapped near the project area for larva, juvenile, and adult life stages (Yang et al. 2019, Mortensen et al. 2020). The silvery minnow is known to occur within the river segment within the proposed project area.
	Insect	
Monarch Butterfly (<i>Danaus plexippus</i>)	ESA C	Migratory species that summers in the State of New Mexico. Adults feed on flower nectar and larvae feed exclusively on milkweed leaves. Monarchs require abundant source of flowering plants; breeding only where milkweeds are found. The project area lacks abundant sources of milkweed to support their breeding preferences, as well as flowers that could supply nectar to adult monarchs. Suitable habitat is not present in the project area. Additionally, their fall and spring migration routes occur outside of the project area (USFWS 2021).
	Plants	
Pecos Sunflower (<i>Helianthus paradoxus</i>)	ESA T	Inhabits saturated saline soils at spring and seeps desert cienegas, wet meadows, and along stream courses and pond margins. Typically associated with desert springs (cienegas) or wetlands created from modifying desert

Common/Scientific Name	*Status	Potential to Occur
		springs, at 3,300–6,600 feet elevation (NMRPTC 2006). The proposed project area does not include spring seeps of desert wetlands. This sunflower is a wetland plant that thrives in permanently wet soils, and the Rio Grande fluctuates in water level. Suitable habitat is not present in the project area.

* ESA C, E and T = Endangered Species Act candidate, endangered and threatened. MBTA = Migratory Bird Treaty Act.

Rio Grande Silvery Minnow

Rio Grande Silvery Minnow, a federally listed endangered species, are threatened by habitat loss and alteration from dam and reservoir construction, streamflow diversion or dewatering, water impoundment, river channelization, water quality degradation, and non-native species competition (USFWS 2010). Historically, Rio Grande Silvery Minnow was widespread and abundant throughout the Rio Grande in New Mexico and Texas and the Pecos River from Santa Rosa, to the confluence of the Rio Grande in Texas. Currently, the Rio Grande Silvery Minnow only occupies about 5 percent of its former range, and is found in one portion of the Rio Grande, a 174-mile segment that is fragmented by dams—Cochiti Reach, Angostura Reach, Isleta Reach, and San Acacia Reach in New Mexico (USFWS 2010). Designated critical habitat extends from Cochiti Dam downstream to the utility line crossing the Rio Grande upstream of the Elephant Butte Reservoir delta in Socorro County and excludes most Tribal lands, including those on the Pueblo.

The Rio Grande Silvery Minnow is a small-bodied, short-lived minnow of the cyprinid family (Horwitz et al. 2018). Silvery minnows shoal (travel loosely within schools of fish) and tolerate a wide range of habitats, but generally prefer low-velocity areas (<0.33 feet per second) over silt or sand substrate that are associated with shallow (<15.8 inches) braided runs, backwaters, or pools (Sublette et al. 1990). Habitat includes stream margins, side channels, and off-channel pools where water velocities are low or reduced from main-channel velocities. Stream segments dominated by narrow, incised channels with rapid flows (equal to or greater than 3.3 feet per second) are not typically occupied by silvery minnows (Bestgen et al. 2010). Low velocity habitats, sometimes created by overbank flooding, are used by silvery minnows as suitable habitat for developing larval stages (Mortensen et al. 2020).

A recent study of the silvery minnows’ swimming capability found that the species was able to ascend a variety of fishways but preferred fishways with a mixed substrate comprised of sand to cobble with boulders placed in a way that creates a variety of flow velocities (Bestgen et al. 2010). However, velocities should not exceed 3.3 ft/sec for short distances and 1.5 to 2 ft/sec for longer distances (Bestgen et al. 2010). An experiment using a physical model with cylinder baffles determined that silvery minnows would use a baffled fishway (Bestgen et al. 2010, Pizzi et al. 2021). The baffles produce small drops in the water surface elevation between each cylinder that were negotiable by swimming bursts, with low velocity resting pools strategically placed between rows of baffled cylinders.

Various sites within the Isleta Reach of the Rio Grande have been monitored for silvery minnows as part of the Rio Grande Silvery Minnow Population Monitoring Program since 1993 (Mortensen et al. 2020). The monitoring program shows that in the Isleta Reach the occurrence and abundance of

silvery minnows in the Middle Rio Grande, and in the project area, has fluctuated widely over the past two decades (1993–2021) (i.e., order of magnitude changes). Long-term data has shown that estimated density of silvery minnows increased with maximum discharge, number of days with discharge exceeding a threshold value, estimated inundation of the river channel and floodplain, delayed onset of low flows, and increased mean daily discharge (Dudley et al. 2022). While, estimated silvery minnow density was found to be very low when conditions were dry (Dudley et al. 2022). In 2021, silvery minnows had greater abundance during the summer monitoring events and relatively low abundance during the spring and fall in the Isleta Reach (Dudley et al. 2022). Annual population monitoring from the Angostura Diversion Dam in Sandoval County to below the San Marcial railroad bridge in Socorro County has consistently found that occurrence and density of silvery minnows is highest in the downstream-most reaches of the Rio Grande, including the Isleta Reach (Dudley et al. 2022).

3.6.2. Impacts from the No Action

Under the No Action Alternative, no new impacts to silvery minnows are expected as no construction activities associated with dam modifications or fishway at the IDD would occur. Silvery minnow populations would remain fragmented by the IDD as upstream dispersing of silvery minnows would remain limited primarily when the dam's river gates are closed. Without fish passage, silvery minnows' upstream movements would be prevented when the IDD river gates are closed during the irrigation season, which could affect their distribution, access to suitable habitat, genetic diversity, and long-term viability of a wild population (Mortensen et al. 2020).

3.6.3. Impacts from the Proposed Action

There would be *no adverse effects* to the following species under the Proposed Action Alternative due to lack of habitat or because the project area is outside the current principal range of the species, both of which make occurrence in the project area unlikely and discountable: Mexican Spotted Owl, Yellow-billed Cuckoo, Southwestern Willow Flycatcher, Monarch Butterfly, New Mexico Meadow Jumping Mouse, and Pecos Sunflower.

Rio Grande Silvery Minnow

The proposed construction activities would be limited to the 3.70 acres (14,973.4 square meters[m²]) aquatic portion of the 5-acre project footprint and is anticipated to occur primarily in the dry after the project area has been dewatered with flows rerouted around the project area. As silvery minnow densities have ranged widely in the Isleta Reach, and assuming that the silvery minnow densities were low (~0.3 RGSM/100 m²) prior to the start of construction, then as many as 45 silvery minnows could be in the aquatic action area. Assuming that the silvery minnow densities were high (~5 RGSM/100 m²) prior to the start of construction, then as many as 750 silvery minnows could be in the aquatic action area. Some silvery minnows could escape construction prior to the installation of barriers or ramps, but some silvery minnows could become trapped in the aquatic action area. The actual densities of silvery minnows in the aquatic action area will vary due to a variety of factors and silvery minnows may need to be surveyed to verify their densities prior to construction. Factors that may affect local silvery minnow densities include those that influence recruitment in association with spring runoff, extent of river drying, or by nearby stocking prior to the implementation of the proposed IDD modifications project.

Seepage flows could occur and some construction of the dewatering activities and barrier installation (e.g., flow barrier, earthen ramps) could occur in the wet while installing a temporary barrier along all

boundaries of the project area to temporarily reroute the Rio Grande around the construction zone. Construction activities that are conducted in the wet and the diversion of flows itself away from the proposed project area could result in disturbance or potential entrapment of silvery minnows, including possible mortality. To minimize the impacts to silvery minnows, to the extent possible, the project areas that are isolated from flow could be culverted to allow silvery minnows to flee the construction area. As needed, silvery minnows that become stranded could be netted by permitted biologists to collect and relocate silvery minnows to wetted, connected upstream or downstream habitats. Excavation or placement of materials in the wetted channel would be conducted in a way that avoids creating isolated pools of water which could result in isolated and stranded fish. In addition, Reclamation (2015a) would utilize construction techniques and implement the standard BMPs identified in the 2016 MRG BO for the proposed project, which would minimize contact with fish and minimize their injury, harm, harassment, or mortality. Additionally, Reclamation would coordinate with the USFWS to identify additional measures to minimize impacts to silvery minnows.

The construction methods and techniques would be refined in the final design, with the project's construction plan designed to minimize interaction within wetted habitat to minimize impacts to aquatic resources. Construction of the proposed action could be phased such that excavation and construction could be completed within two construction seasons to minimize impacts to silvery minnows. This construction sequence would be expected to minimize the amount of contact with the river by as much as 50 percent. Construction vehicles would access the river likely from the east bank north of the dam and from the east bank downstream of the dam to the IDD apron via earth ramps. Some construction is anticipated to occur in the wet, and flows would be diverted within the river channel as discussed above or isolated by earthen berms. Silvery minnows exposed in the project area may be adversely affected by construction noise, equipment vibrations, fish being harassed and passing through or into areas of high velocities, by reductions in habitat from earthen berm enclosures, altered water qualities within enclosed areas, incidental entrapment within enclosed areas, or by other disturbances that harass, stress, injure, or reduce the fitness of silvery minnows in the Project Area. Therefore, the Proposed Action "may affect, and is likely to adversely affect" the Rio Grande Silvery Minnow.

As a conservative estimate, during conditions of high spring runoff and little river drying, up to 750 silvery minnows could be adversely affected in the 3.75 acre aquatic impact area. During conditions of low spring runoff and extensive river drying, up to 45 silvery minnows could be in the aquatic impact area. A variety of factors can also affect these estimates. However, not all silvery minnows that will be adversely affected (such as by harassment or entrapment) would necessarily die. Additionally, during the Design-Build process, the aquatic impact area will be reduced by at least 50 percent (~1.8 acres). Therefore, the number of silvery minnows that will be adversely affected will be small (23 to 375; due to 50 percent reduction) compared to the population, and the number that may die will likely be fewer (assuming 40 percent die or 9 to 150), then the effects on the population would be considered minor and temporary (until the next recruitment). The USFWS (2016) determined these activities, including but not limited to, the construction of fish passages, and the associated incidental takes of silvery minnows, would not jeopardize the species. The USFWS (2016) described nondiscretionary terms and conditions that further minimizes the incidental take of silvery minnows. By implementing those nondiscretionary terms and conditions, including the BMPs, and refining the activities, timing, and areas of impact to silvery minnows, Reclamation verifies these findings with the USFWS through "Letters of Inclusion," as part of the programmatic MRG BO.

There could potentially be indirect impacts from in-water work (i.e., constructing fishway, east bank realignment, or sluiceway modification) to water quality from increased sedimentation, turbidity, and

oxygen sags. However, these water quality alterations would be expected to be temporary and transient in nature or expected to affect a small number of silvery minnows (<750) within or near the project area. The Rio Grande within the proposed project footprint would be temporarily diverted, thus depletion of water into the Rio Grande would not be an issue since flows downstream of the project area would not change. Design features, BMPs, and adherence to the conditions in the USACE permit would minimize impacts to water quality and to silvery minnows. In addition, a Clean Water Act Storm Water Pollution Prevention Plan and Pueblo Water Quality Certification would contain stipulations aimed at reducing erosion and runoff and protecting water quality necessary for aquatic life.

Operations of the new fishway after construction would be expected to benefit the silvery minnow by facilitating upstream movements when the IDD gates are closed. The fishway would be designed to ensure available water flow is conveyed effectively, so silvery minnows are able to swim through it. Routine sediment removal and maintenance would be expected to occur when the fishway was closed and not in use (i.e., mainly during winter). The fishway would meet the commitment with the USFWS to provide fish passage at the IDD for the Rio Grande Silvery Minnow as stated in the 2016 MRG BO. In addition, the USFWS (2019) provided Reclamation metrics for demonstrating successful fish passage, including a discussion of how adaptive management could be used. Reclamation (2022) described how adaptive management could include factors such as, but not limited to, managing or monitoring fish, flows, fish movements, impediments to passage, and effects of maintenance and operation activities that could be informative to IDD operations.

3.7. Cultural Resources

3.7.1. Affected Environment

The proposed project area is located within the northern middle Rio Grande region of central New Mexico. In general, the history of the northern middle Rio Grande area can be divided into five major periods: Paleo-Indian (ca. 10500 B.C. to 6000 B.C.), Archaic (ca. 6000 B.C. to A.D. 500), Developmental (A.D. 500 to 1175), Coalition (A.D. 1175 to 1325), Classic (A.D. 1325 to 1600), and the Historic (A.D. 1600 to present), which includes Native American as well as later Hispanic and Euro-American settlers. Detailed descriptions of these various periods and additional information can be found in the Cultural Resource Inventory Report, Cultural Resource Survey for Proposed Isleta Diversion Dam Modification Project, New Mexico Cultural Resource Information System (NMCRIIS) # 151239 (BRIC 2023).

Effects to cultural resources must be taken into consideration under every NEPA-governed Proposed Action. The term “cultural resources” refers to any historic or prehistoric resource. This encompasses a wide range of material remains that have the potential to provide information about the human use and occupation of the project area. These cultural resources generally consist of archaeological sites and Traditional Cultural Properties (TCPs). Cultural sites vary considerably and can include, but are not limited to, simple artifact scatters, structures, or structural remains of various types with a myriad of associated features, rock art and inscriptions, ceremonial/religious features, and roads and trails.

The NHPA and the NRHP (36 CFR Part 800) are the benchmarks by which the significance of cultural resources is evaluated by a federal agency when considering what effects its actions may have on cultural resources. To summarize, Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory

Council a reasonable opportunity to comment on such undertakings. This process includes consultation, involvement of the public, identification of historic properties by contractors, assessment, and possible resolutions of adverse effects by the action. The evaluation of eligibility, the standard which the process uses to determine adverse effects, has criteria established by the NRHP. The NRHP states that for a historic property significance to be considered eligible a cultural resource must have integrity of location, design, setting, materials, workmanship, feeling, and association, *and* meet one or more of the following criteria: a) are associated with events that have made a significant contribution to the broad patterns of our history; b) are associated with the lives of significant persons in or past; does it c) embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; represent a significant and distinguishable entity whose components may lack individual distinction; or d) have yielded or may be likely to yield information important in history or prehistory. If a site, regardless of age, meets these standards it is referred to as a “historic property.”

A records search of the NMCRIIS database and the National and State Registers of Historic Places was conducted. The search radius included a buffer area of 1 mile (1.6 km) from the project area boundaries. The search revealed fifty-two (52) previously conducted investigations, seven (7) previously recorded sites, and twenty-seven (27) previously recorded historic cultural properties within 1 mile (1.6 km) of the project area. No previously recorded sites occur within the project area, however the survey area itself falls within close proximity to the Isleta Village Proper, which is itself listed on the NRHP.

A Class III cultural resource pedestrian survey of the proposed project area was conducted on September 15–16, 2022 (BRIC 2023). No new archeological sites were recorded, and one new Historic Cultural Property (Historic Cultural Properties Inventory ((HCPI) 53622) was recorded. The HCPI is the Isleta Diversion Dam. One isolated occurrence material has been fully documented in situ and suggests a minimal likelihood of additional cultural resources in the area.

Under New Mexico Historic Preservation Division guidelines, the IDD qualifies as a historic resource. An initial HCPI form was completed, and the IDD was recorded as HCPI 53622. The IDD is one of three contemporaneously constructed dams in the area; the other two are San Acacia and Angostura diversion dams. The IDD is part of a historically significant complex of water control features designed to sequester and distribute water in an arid environment. In addition, each of these dams played a significant role in the historically important Middle Rio Grande Project. The IDD fulfills criterion A and C and is recommended potentially eligible to the NRHP. A Historic American Engineering Record (HAER) documentation is recommended to be completed for the IDD before the undertaking is completed (BRIC 2023). The Pueblo of Isleta THPO approved the cultural resource inventory report, *Cultural Resource Inventory: Isleta Diversion Dam Modification Project, Valencia County, New Mexico* (BRIC 2023) on March 28, 2023.

Traditional Cultural Properties

TCPs are a separate class of cultural resources and are places that have cultural values that transcend the values of scientific importance that are normally ascribed to cultural resources such as archaeological sites and may or may not coincide with archaeological sites (Parker and King 1998).

A TCP is defined as a property that is listed on or is eligible for inclusion on the NRHP because of its association with cultural practices or beliefs of a living community that are: (1) rooted in that community’s history; and (2) important in maintaining the continuing cultural identity of the community (National Register Bulletin #38). Native American communities are most likely to

identify TCPs, although TCPs are not restricted to those associations. Some TCPs are well known, while others may only be known to a small group of traditional practitioners, or otherwise only vaguely known. Native American tribal perspectives on what is considered a TCP are not limited by a places age or its National Register eligibility or lack thereof.

TCPs cover a wide range of locales and use areas. Properties may include sacred landforms (e.g., mountains, rivers, lakes, outcrops, or naturally discolored rocks), places associated with deities, plant gathering areas, places mentioned in traditional histories, habitation sites, and ceremonial or offering places.

3.7.2. Impacts from the No Action

Under the No Action Alternative, no impacts to cultural resources are expected as no ground disturbance from IDD modifications and fishway construction would occur. Impacts to the IDD from existing sediment buildup events would continue.

3.7.3. Impacts from the Proposed Action

Under the Proposed Action Alternative, the fishway would be constructed in the Rio Grande downstream of the IDD. The fishway would be constructed by replacing a radial, river gate near the center of the dam with a concrete fishway extending less than 10 feet upstream of the dam and approximately 150 feet downstream of the dam. Additionally, earthen ramps would be constructed to bring heavy equipment to and for accessing the river. The traffic through the proposed project site would require regular access of the active river channel downstream of the IDD throughout the construction schedule. An exact location has not been identified for accessing the Rio Grande but would likely be from the east bank to the island north of the dam and from the east bank downstream of the dam to the IDD apron, within the proposed project footprint. Construction of this alternative would result in the removal of one gate of HCPI 53622, Peralta Sluiceway modifications, and all river, sluiceway, and headworks gates could eventually be mechanized and therefore adversely affect that cultural resource. However, adverse effects to the IDD would be mitigated through conducting a HAER of the dam before construction activities are completed.

The Proposed Action is not known to physically threaten any TCPs, prevent access to sacred sites, prevent the possession of sacred objects, or interfere or hinder the performance of traditional ceremonies or rituals. The proposed IDD modifications and construction of the fishway would not be expected to impact the view of the Rio Grande, which is an essential cultural activity for the Pueblo.

It has been determined there will be a direct adverse effect to the dam with the proposed IDD Modification Project. Conducting HAER documentation of the IDD to mitigate impacts to HCPI 53622 is recommended. In addition, if the contractor discovers any previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery would be suspended and the discovery would be promptly reported to the Pueblo THPO. The Pueblo THPO would specify what action would be taken.

3.8. Indian Trust Assets

3.8.1. Affected Environment

The DOI Manual Release 512 Department Manual 2 (1995) requires each bureau and office to identify potential effects of Departmental activities upon Indian Trust Assets (ITAs). The ITAs are

legal interests in assets held in trust by the federal government for federally recognized Indian tribes or individual Indians. Secretarial Order 3175 and Reclamation ITA policy require that Reclamation assess the impacts of its projects on ITA. An inventory of all ITA within the proposed project area is required. If any ITAs are impacted, mitigation or compensation for adverse impacts to these assets is required. ITAs in the project area include Tribal trust land. The proposed modifications would affect approximately 5 acres of Tribal trust land. Reclamation would continue to collaborate with the Pueblo throughout the Design-Build process to ensure that the proposed IDD modifications and fishway reflect Tribal expertise and consider indigenous knowledge (e.g., traditional ecological and historical knowledge).

3.8.2. Impacts from the No Action

Under the No Action Alternative, no impacts to Indian Trust Assets would be expected because the IDD modifications and fishway would not be constructed.

3.8.3. Impacts from the Proposed Action

Approximately 5 acres of Tribal Trust lands would be disturbed from constructing the proposed east bank realignment, sluiceway modification, and fishway under the Proposed Action Alternative. The Pueblo understands there would be impacts to trust lands and supports the IDD Modification project. A letter of support from the Pueblo of Isleta Office of the Governor can be found in Appendix C. The proposed IDD modifications and fishway would not change the existing land and primary use.

3.9. Environmental Justice

3.9.1. Affected Environment

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” directs each federal agency to develop strategies for considering environmental justice in their programs, policies, and activities. Additionally, the CEQ has issued the “Environmental Justice Guidance under the NEPA “to further assist federal agencies with their procedures under NEPA. Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations of the execution of federal, state, local, and tribal programs, and policies.

The U.S. Environmental Protection Agency published the Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses (1998), which indicates that a minority population exists when either:

- The minority population of the affected area is greater than fifty percent of the affected area’s general population, or
- The minority population percentage of the affected area is meaningfully greater than the population percentage in the general population or other appropriate unit of geographic analysis.

An environmental justice screening analysis must determine whether any significant impacts of the Proposed Action (if any) would disproportionately adversely affect local low-income and/or minority populations. If a disproportionate impact is determined, mitigation measures must be implemented to reduce the adversity of the impact to a less-than-significant level. According to the federal guidelines, the environmental justice screening analysis assesses whether “the potentially affected community includes minority and/or low-income populations.” The guidelines indicate that a minority population exists when the minority population is 50 percent or more of the affected area’s total population. The 50 percent threshold is also used to determine the presence of low-income populations in the study area.

The nearest Census Designated Places to the project area is the Isleta Village Proper with a combined city region (CCR) population of 402 as of 2019 (Deloitte 2022). The CCR has approximately 32.8% of individuals in poverty which is greater than compared to Valencia County at 16.6% and 18.6% for the State (Headwater Economics 2022). The CCRs racial makeup is American Indian at 95.8%. This percentage of American Indian is much greater than the population in the Valencia County which is at 3.6% and for the State which is at 8.6% (Headwater Economics 2022).

3.9.2. Impacts from the No Action

The No Action Alternative would not disproportionately impact low-income or minority individuals or populations. The lack of IDD modifications and fishway construction would continue to impact the Pueblo as the existing conditions would remain unchanged. Sediment buildup at the canals and upstream of the IDD would be expected to continue, which could reduce the likelihood of efficient water deliveries for irrigation demand on the Pueblo and downstream.

3.9.3. Impacts from the Proposed Action

The proposed IDD modifications and fishway would not change the existing community structure or lands for other uses. Indirect impacts could include a temporary increase in noise, dust, traffic, and activity disturbance to residents adjacent and near the IDD modification and fishway construction activities. These impacts would apply to all residents in the proposed project area equally. Construction of the fishway and realignment of the east bank and sluiceway modifications would not result in disproportionate negative effects to minority or low-income populations.

The realignment of the east bank in combination with the Peralta Sluiceway modifications would reduce the sediment amount diverted through the sluiceway compared to existing conditions (Tetra Tech 2022). The reduced sediment loads diverted through the Peralta Sluiceway would reduce potential for interruptions of water deliveries for irrigation and would be expected to decrease the operations and maintenance costs for dredging and removing sediment buildup. In addition, reduction in sediment buildup at the Peralta Sluiceway could improve the visual aesthetics of the IDD area by reducing spoil piles adjacent to the canal banks and spoils stored at the existing spoil area. Additionally, the modifications should decrease the amount of long-term maintenance activities associated with removing, spoiling, and moving excess sediment.

3.10. Cumulative Effects

As defined by NEPA regulations (40 CFR 1508.1(g)), Cumulative effects are “effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-

Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.”

Other ongoing activities along the Rio Grande may negatively impact water quality, erosion, channel maintenance, sediment levels and riverine habitats. These include stormwater runoff, agricultural runoff, municipal wastewater discharges, riparian clearing, and chemical use for vegetation control and cultivated crops. Recreation in the river, urban and industrial growth, and riparian vegetation clearing without replanting could also impact water quality, erosion, sediment levels, and riverine habitat.

River management activities, including the maintenance and operation of flood control and agricultural diversion dams (including the IDD) have contributed to the hydrologic, hydraulic, and geomorphic conditions described above in the EA. In addition, the Pueblo has completed numerous bosque restoration projects in coordination with many agencies over the last 15 years. In 2013, using excavators, the USACE (2013) removed approximately 83,000 cubic yards of riverbed sediment from below the IDD and placed those spoils into the Peralta Spoil Yard prior to their disposal at an upland site. Reclamation (2020), on behalf of the Pueblo, released an EA on the Pueblo’s Bosque and Riverine Restoration Project that described the restoration of the bosque in the project area by hand tools, mechanical methods, or herbicide treatment of noxious weeds along with planting riparian vegetation within 10 years. Realignment of the east bank in combination with modifications to the Peralta Sluiceway would improve sediment management at the IDD by reducing sediment build up in the irrigation canals and frequency that dredging, and sediment removal are needed. Installation of a fishway at the IDD in combination with other habitat restoration and dam modification projects would be expected to facilitate silvery minnow movement and distribution in an upstream direction during irrigation season and contribute to recovery of the species. Design features and BMPs would be implemented under the Proposed Action to minimize adverse impacts from construction of the IDD modifications and fishway. The proposed IDD modification project would contribute negligibly to cumulative adverse effects because they are temporary and transient in nature and localized with implementation of design features and BMPs.

4. CONSULTATION AND COORDINATION

The ESA requires the consideration of impacts on federally listed species for all federally funded, permitted, or authorized projects. Reclamation requested a species list from the USFWS IPAC that identified threatened, endangered, proposed, and candidate species that may occur within the project area or may be affected by the Proposed Action. The Proposed Action “may affect and is likely to adversely affect” the Rio Grande Silvery Minnow, a federal endangered species. Reclamation will continue to coordinate with the USFWS to complete the reasonable and prudent measures, along with their implementing terms and conditions, as required by the 2016 MRG BO, including providing fish passage at the IDD.

Section 106 of the NHPA as amended in 1992 (16 USC 470 *et seq.*) requires the consideration of impacts on historic properties that are listed, or eligible to be listed, in the NRHP. The IDD Modification Project will comply with the American Indian Religious Freedom Act, NRHP, and other legislation pertaining to cultural resources. The Pueblo THPO has been consulted and a copy of this EA has been provided for review and comment.

5. LIST OF PREPARERS

A list of who participated in the development of this EA is provided below.

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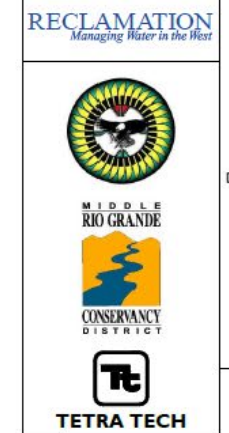
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APPENDIX A. IDD MODIFICATION PRELIMINARY DESIGN PLANS



ALWAYS THINK SAFETY

PRELIMINARY ENGINEERING ANALYSIS REPORT
 ISLETA DIVERSION DAM
 SITE PLAN

OPTION NO. 41
 EXISTING EAST SLUICeway
 MODIFIED TO HAVE A
 3.5-PERCENT FLOOR SLOPE

APPENDIX B. USFWS IPAC T&E SPECIES LIST



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
Phone: (505) 346-2525 Fax: (505) 346-2542



In Reply Refer To:
Project Code: 2022-0085101
Project Name: Isleta Diversion Dam Environmental Compliance

February 09, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 *et seq.*), the Migratory Bird Treaty Act as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act as amended (16 USC 668-668(c)). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area, and to recommend some conservation measures that can be included in your project design.

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the ESA is to provide a means whereby threatened and endangered species and

the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (NEPA; 42 USC 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>.

Candidate Species and Other Sensitive Species

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico State agencies. These lists, along with species information, can be found at the following websites.

Biota Information System of New Mexico (BISON-M): www.bison-m.org

New Mexico State Forestry. The New Mexico Endangered Plant Program:
<https://www.emnrd.nm.gov/sfd/rare-plants/>

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: nmrareplants.unm.edu

Natural Heritage New Mexico, online species database: nhnm.unm.edu

WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, www.fws.gov/wetlands/Data/Mapper.html, integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

MIGRATORY BIRDS

In addition to responsibilities to protect threatened and endangered species under the ESA, there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the Service (50 CFR 10.12 and 16 USC 668(a)). For more information regarding these Acts see <https://www.fenws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a Federal nexus) or a Bird/Eagle Conservation Plan (when there is no Federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>. We also recommend review of the Birds of Conservation Concern list (<https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>) to fully evaluate the effects to the birds at your site. This list identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent top conservation priorities for the Service, and are potentially threatened by disturbance, habitat impacts, or other project development activities.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 thereby provides additional protection for both migratory birds and migratory bird habitat. Please visit <https://www.fws.gov/migratorybirds/pdf/management/executiveordertoprotectmigratorybirds.pdf> for information

regarding the implementation of Executive Order 13186.

We suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State protected and at-risk species fish, wildlife, and plants.

For further consultation with the Service we recommend submitting inquiries or assessments electronically to our incoming email box at nmesfo@fws.gov, where it will be more promptly routed to the appropriate biologist for review.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Mexico Ecological Services Field Office

2105 Osuna Road Ne

Albuquerque, NM 87113-1001

(505) 346-2525

Project Summary

Project Code: 2022-0085101
Project Name: Isleta Diversion Dam Environmental Compliance
Project Type: Dam - Maintenance/Modification
Project Description: Environmental Compliance including NEPA, CWA and biological clearance.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@34.901933299999996,-106.68435205841803,14z>



Counties: Valencia County, New Mexico

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Mexican Wolf <i>Canis lupus baileyi</i> Population: U.S.A. (portions of AZ and NM)see 17.84(k) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3916	Experimental Population, Non- Essential
New Mexico Meadow Jumping Mouse <i>Zapus hudsonius luteus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7965	Endangered

Birds

NAME	STATUS
Mexican Spotted Owl <i>Strix occidentalis lucida</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Rio Grande Silvery Minnow <i>Hybognathus amarus</i> Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1391	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Pecos (=puzzle, =paradox) Sunflower <i>Helianthus paradoxus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7211	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USEWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Cassin's Finch <i>Carpodacus cassinii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15

NAME	BREEDING SEASON
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Virginia's Warbler <i>Vermivora virginiae</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9441	Breeds May 1 to Jul 31
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

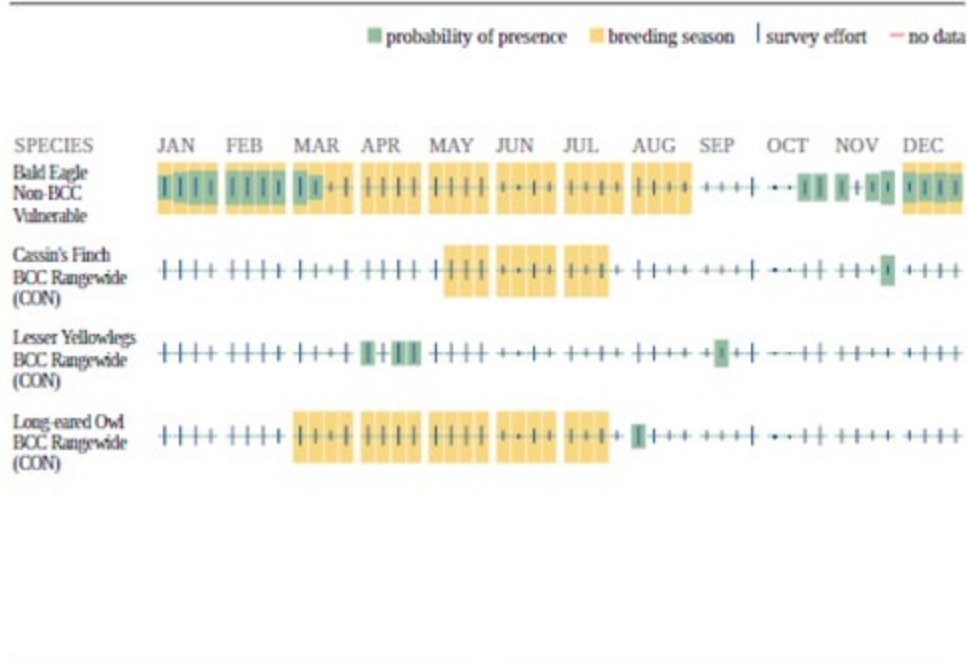
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

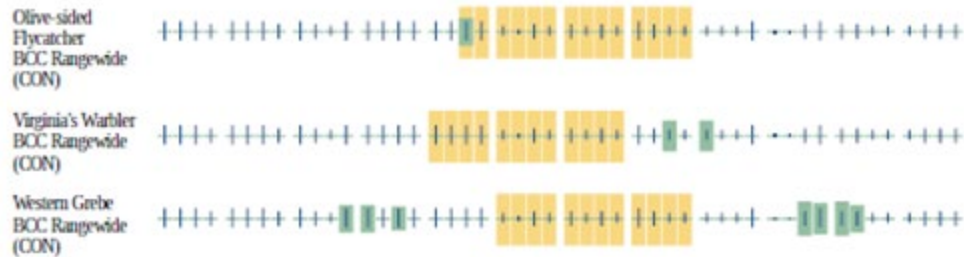
No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list

of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical](#)

[Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

APPENDIX C. PROJECT LETTER OF SUPPORT FROM THE PUEBLO OF ISLETA OFFICE OF THE GOVERNOR

Vernon B. Abeita
Governor



Lt. Governor, Virgil N. Lucero
Lt. Governor, Blane M. Sanchez

PUEBLO OF ISLETA OFFICE OF THE GOVERNOR

P. O. Box 1270
Isleta, New Mexico 87022
Telephone: 505-869-3111
Fax: 505-869-7596

September 16, 2022

Jennifer Faler, Area Manager
U.S. Bureau of Reclamation
Albuquerque Area Office
555 Broadway Blvd. NE, Suite 100
Albuquerque, NM, 87102-2352

By Email to: jfaler@usbr.gov

Re: Fish Passage Structure Location Decision

Dear Ms. Faler,

As you were aware, the Pueblo of Isleta has been concerned with having to make a decision on choosing either an upstream or a downstream location for the fish passage structure as part of the Isleta Settlement Implementation Project. Upon much discussion with the Isleta Technical Team (ITT), we have come to the understanding the location of the fish passage structure either upstream or downstream of the dam, is not expected to affect its functionality of passing fish. However, as we further understand, there are significant geotechnical concerns locating the fish passage on the upstream side of the diversion dam with an estimated doubled cost of construction.

Therefore, the ITT preference for a downstream configuration is based on greater structural stability and at a lower cost. It is also our understanding that the ITT plans to evaluate the hydraulic effects of the fish passage structure through numerical modeling during the design process. Those numerical modeling results will then be used to evaluate proposed designs to avoid undesirable effects on river hydraulics.



Upon consideration of the above preference for structural stability and lower cost, and discussion with traditional leadership, Isleta concurs with a downstream location and further, that during reduced or low river flow, the fish passage structure in conjunctive operation with Isleta Diversion Dam, our irrigation and/or cultural uses will not be interfered with or affected.

Thank you for your patience with Isleta in reaching this important decision regarding the fish passage location as part of the Isleta Settlement Implementation Project.

Sincerely,
PUEBLO OF ISLETA



Vernon B. Abeita
Governor



APPENDIX D. PUBLIC COMMENTS SUMMARY AND RESPONSES

Comment Number	Page or Line Number	Paragraph or Section	Comment	Comment Made By	Response
1	Page 22	Table 2	Why was no determination statement for suitable habitat not stated for the Rio Grande Silvery Minnow (Table 2, page 22), especially when it was mentioned the species was present in the location?	BIA SWRO	The determination statement is made on page 25, Proposed Action Impacts, paragraph 1 "Therefore, the Proposed Action "may affect, and is likely to adversely affect" the Rio Grande Silvery Minnow."
2	Page 22	Table 2	Is suitable habitat present?	BIA SWRO	Table 2, "...Suitable habitat has been mapped near the project area for larva, juvenile, and adult life stages (Yang et al. 2019, Mortensen et al. 2020). The silvery minnow is known to occur within the river segment within the proposed project area. "
3	9	4	Although it may be mentioned and addressed later when the actual fish way design has been determined, what preventative measures will be implemented to control or minimize sediment deposition that will occur above, within, and below the fishway?	BIA SWRO	This level of detail will be determined during the Design-Build process. As mentioned on page 9, Long-term Operation and Maintenance, "Specific information regarding operation of the fishway is not yet known because the design is not finalized....Maintenance activities would be expected to include routine sediment and debris removal to keep the fishway clear....Routine sediment and debris removal from the fishway would occur during maintenance operations at the IDD."
4	12	1	It is noted sediment being removed from the project area will be stocked piled downstream at a designated location. Is the sediment going to be continuously stockpiled on previous loads, if so, wouldn't this accumulation of sediment be easily transported by wind events and potentially impact to the Pueblo and other surrounding communities?	BIA SWRO	This level of detail will be determined during the Design-Build process. Reclamation will coordinate with the Pueblo of Isleta as design elements are established. As mentioned on page 12, Section 3.1.3, paragraph 1, "All excavated soils would be transported along existing roads to the staging area, the existing spoil yard, or to an alternative disposal location. The soils excavated could be stockpiled and used for fill material for the fishway construction and Peralta Sluiceway foundation modifications if needed. The excavated soils could also be used for construction of earthen ramps or barriers and later removed and disposed....area and implementation of BMPs as agreed upon between MRGCD and the Pueblo for sediment management."
5	15	2	Although it is being proposed in the draft EA to use a bed roughness for the fishway structure, sediment is going to continue to accumulate overtime especially over the rough substrate. Thus, what corrective measures are going to be implemented to minimize or reduce sediment deposition?	BIA SWRO	Specific information regarding the maintenance and operation of the fishway will be developed by Reclamation and MRGCD and managed as part of MRGCD gate operations. As noted on Page 15, 3.2.3, paragraph 2, "The Rio Grande would still carry a high sediment load, and sediment and debris would be expected to be deposited in the constructed fishway necessitating some operational changes, such as opening or closing gates or grates, as well as maintenance changes (e.g., removing debris, flushing sediment, or retrieving monitoring data). "

6	23	3	<p>Has the proposed fishway design been utilized and/or constructed in other water systems that mimic the Rio Grande? Will this fishway truly provide fish passage? Has this been tested to show that a fish species, like Rio Grande Silvery Minnow, will use this fish way?</p> <p>How would fish passage by Rio Grande Silvery Minnow be evaluated?</p>	BIA SWRO	<p>Yes, the swimming performance and laboratory testing using Rio Grande Silvery Minnow (RGSM) was conducted by Bestgen (2010). The fishway will provide passage suitable for RGSM (USFWS 2019). As noted on page 23, Section 3.6.1, paragraph 3 "An experiment using a physical model with cylinder baffles determined that silvery minnows would use a baffled fishway (Bestgen 2010, Pizzi et al. 2021). The baffles produce small drops in the water surface elevation between each cylinder that were negotiable by swimming bursts, with low velocity resting pools strategically placed between rows of baffled cylinders."</p> <p>The USFWS (2019) provided Reclamation metrics for demonstrating successful fish passage, including a discussion of how adaptive management could be used. Reclamation (2022) described how adaptive management could include factors such as, but not limited, to managing or monitoring fish, flows, fish movements, impediments to passage, and effects of maintenance and operation activities that could be informative to IDD operations.</p>
7			The draft EA states no impacts to the vegetation or wetlands. However, would there be any impacts to native vegetation that may be utilized by the Pueblo for medicinal purposes?	BIA SWRO	Reclamation consulted with the Pueblo of Isleta Director of Natural Resources and Tribal Historic Preservation Officer, and no culturally significant plant species were identified in the project area.
8			Was Traditional Ecological Knowledge (TEK) considered for this project? Were the tribal elders and leaders consulted with regarding TEK?	BIA SWRO	Reclamation has consulted with the Pueblo of Isleta Tribal leadership, Director of Natural Resources, and Tribal Historic Preservation Officer through the planning process and as stated in the EA on page 28, Section 3.8.3, "Reclamation would continue to collaborate with the Pueblo throughout the Design-Build process to ensure that the proposed IDD modifications and fishway reflect Tribal expertise and consider indigenous knowledge (e.g., traditional ecological and historical knowledge)."
9	24	4	Prior to construction and use of heavy equipment, will Rio Grande Silvery Minnow removal/salvage efforts be conducted to minimize fish mortality? If not, would an incidental take permit be issued?	BIA SWRO	Reclamation BMPs under the 2016 USFWS BO will be followed. Reclamation will be coordinating with USFWS to identify additional measures to minimize fish impacts.
10			What proactive measures, if any, will be used to prevent and/or block Rio Grande Silvery Minnow from dispersing into the project area during the construction phases?	BIA SWRO	The construction methods and techniques would be defined in the Design-Build process, with the project's construction plan designed with measures to minimize impacts to aquatic resources.
11	24	4	Although the project is being proposed to be done during the winter months, do Rio Grande Silvery Minnow overwinter in the project area (i.e., especially below the dam)? If so, what measures will be implemented to remove these residential fishes and minimize mortality?	BIA SWRO	Reclamation BMPs under the 2016 USFWS BO will be followed. Reclamation will be coordinating with USFWS to identify additional measures to minimize fish impacts.
12	7	3	Although operations of the fish way have not been clearly defined or discussed in the draft EA, will operations of the fish way during high and low flows be specified to support fish passage for Rio Grande Silvery Minnow?	BIA SWRO	"When the fishway is in operation, an upstream gate would be operated to provide flows within the fishway structure to accommodate the swimming abilities of silvery minnow. This fishway gate could be closed during periods of high spring runoff to reduce entrainment of sediment and debris, during low flow when water is unavailable, or during non-irrigation season when river gates are open." (Page 7, Section Fish Passage, paragraph 3)
13	7	3	During drought years, approximately two miles below and six miles above IDD tends to remains wet. Therefore, how will the operations of the fish way function during this period? Would it even be operational during events like this?	BIA SWRO	"When the fishway is in operation, an upstream gate would be operated to provide flows within the fishway structure to accommodate the swimming abilities of silvery minnow. This fishway gate could be closed during periods of high spring runoff to reduce entrainment of sediment and debris, during low flow when water is available, or during non-irrigation season when river gates are open." (Page 7, Section Fish Passage, paragraph 3)

14			<p>Reclamation must not predetermine the outcome of its ongoing NEPA process. In this case, however, Reclamation has publicly stated that “[t]he final designs for both SADD and IDD have been contracted, and construction is slated to begin in 2024.”</p> <p>If Reclamation has, in fact, contracted for the final fish passage design and scheduled construction for next year prior to completion of the ongoing NEPA process, then the agency’s actions have unlawfully predetermined the outcome of the NEPA process.</p>	Wild Earth Guardians	The design for the fish passage will be determined during the Design-Build process. Additional environmental compliance will be completed as appropriate during the Design-Build process.
15		Alternatives	<p>Reclamation must assess full or partial dam removal as an alternative means of providing fish passage at the IDD. Reclamation should consider additional alternatives to the Proposed Action and the No-Action Alternative, specifically including full or partial dam removal as potential feasible, environmentally-preferable options to meeting Reclamation’s purpose and need for the IDD Modification Project. It is particularly important for Reclamation to assess dam removal as an alternative means for providing fish passage due to the high level of uncertainty as to whether the fishway structure proposed as part of the Proposed Action will ultimately be effective in transporting Rio Grande silvery minnow through the IDD.</p>	Wild Earth Guardians	<p>Reclamation considered over 90 alternative designs for sediment management and fish passage including two options that would require full or partial removal of the IDD, Preliminary Engineering Analysis Report (PEAR) Option 2: Remove IDD and pump irrigation water from an infiltration gallery and PEAR Option 3: Replace IDD with a narrower dam and re-locate canal (Tetra Tech 2019, (IDD PEAR Addendum Report) Tetra Tech 2022). PEAR Option 2 included removal of most or all of the IDD structure in the Rio Grande and installing an infiltration gallery to meet irrigation needs. This design option was considered infeasible because of the many miles of pipes to be installed in the alluvial aquifer to meet irrigation demands and the cost of demolishing the dam. PEAR Option 3 included removal of the headworks to the west side and partially removing the dam on the east side. This option was infeasible due to structural damage to the dam during high flows.</p>
16		Alternatives	<p>The 2016 Biological Opinion expressly noted that “[s]ide channel construction options will be explored at Angostura and Isleta Diversion Dams.” To comply with the fish passage measures required by the 2016 Biological Opinion, Reclamation must assess the feasibility and environmental impacts of side channel construction and provision of fish passage that would function on a year-round basis.</p>	Wild Earth Guardians	<p>Reclamation considered two alternative fish passage designs that included constructing a fish passage around the west side of the dam (Option 31) or around the east side of the dam (Option 32) (PEAR, Tetra Tech 2019).</p> <p>A fish passage design that bypasses around the dam on the west or east sides of the IDD was discussed with the Pueblo and dismissed from further consideration because infrastructure constraints made a bypass in the east or west floodplains infeasible. New Mexico 147 was a major design constraint as well as a traditional cultural property located on the west bank. For the fish passage design around the east side of the dam, canals and roadway crossings and the planned U.S. Army Corps of Engineers’ levee, and culvert crossings were all design constraints. In addition, the Isleta Pueblo Technical Team chose a downstream fish passage design of the IDD because it had a lower cost and will not affect their cultural or irrigation uses when in operation (Appendix C in EA).</p>
17			<p>To ensure fish passage is successful, Reclamation must develop a monitoring plan as part of its Proposed Action. Reclamation is specifically required by Reasonable and Prudent Measure 7.2 to “monitor the habitat use and movement of silvery minnows in association with Proposed Action projects, including fish passage projects.” Because monitoring is critical to ensuring that Reclamation is able to meet its fish passage obligations under the 2016 Biological Opinion, a monitoring protocol is an essential component of the Proposed Action. Accordingly, Reclamation needs to develop a monitoring protocol, and assess the environmental impacts of various monitoring alternatives to ensure that Reclamation’s efforts are ultimately successful in providing upstream and downstream passage for the Rio Grande silvery minnow.</p>	Wild Earth Guardians	<p>The specific monitoring protocol at or near IDD will be developed after construction is complete in coordination with the Pueblo of Isleta and U.S. Fish and Wildlife Service. Currently, “various sites within the Isleta Reach of the Rio Grande have been monitored for silvery minnows as part of the Rio Grande Silvery Minnow Population Monitoring Program since 1993 (Mortensen et al. 2020). The monitoring program shows that in the Isleta Reach the occurrence and abundance of silvery minnows in the Middle Rio Grande, and in the project area, has fluctuated widely over the past two decades (1993–2021) (i.e., order of magnitude changes). Reclamation will continue to monitor the Rio Grande Silvery Minnow through the Rio Grande Minnow Population Monitoring Program (PMP).”(EA, page 30)</p>

18	23	3	Reclamation must disclose its metrics for demonstrating successful fish passage and explain how adaptive management will be used to ensure that fish passage is ultimately successful.	Wild Earth Guardians	The USFWS (2019) provided Reclamation metrics for demonstrating successful fish passage, including a discussion of how adaptive management could be used. Reclamation (2022) described how adaptive management could include factors such as managing or monitoring fish, flows, fish movements, impediments to passage, and effects of maintenance and operation activities that could be informative to IDD operations.
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