



— BUREAU OF —
RECLAMATION

Calendar Year 2024 Report to the Pecos River Compact Commission

Interior Region 7: 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.

Calendar Year 2024 Report to the Pecos River Compact Commission

Interior Region 7: Upper Colorado Basin

prepared by Bureau of Reclamation, Albuquerque Area Office, Albuquerque, New Mexico

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Cover Photo: Carlsbad Irrigation District diversion dam on the Black River (M. Horner, USFWS)

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Acronyms

AAO.....	Albuquerque Area Office
af.....	acre-feet
ASEI	Annual Security Equipment Inventory
ASI	Annual Site Inspection
Avalon.....	Avalon Dam and Lake
BIL or Infrastructure Law	Bipartisan Infrastructure Law
Brantley.....	Brantley Dam and Reservoir
BO	Biological Opinion
cfs	cubic feet per second
CID	Carlsbad Irrigation District
CPWA.....	Carlsbad Project Water Acquisition
CR.....	Comprehensive Review
DOI.....	U.S. Department of the Interior
ESA	Endangered Species Act
FCP	Fish Conservation Pool
FSDD.....	Fort Sumner Diversion Dam
FSID	Fort Sumner Irrigation District
FY.....	fiscal year
NAVD 88.....	North American Vertical Datum of 1988
NCAR.....	National Center for Atmospheric Research
NMISC	New Mexico Interstate Stream Commission
NMOSE	New Mexico Office of the State Engineer
NRCS.....	Natural Resources Conservation Service
O&M.....	Operation and Maintenance
P.L.	Public Law
PFR	Periodic Facility Review
PVACD	Pecos Valley Artesian Conservancy District
RAB.....	Roswell Artesian Basin
Reclamation	Bureau of Reclamation
RO&M.....	Review of Operation and Maintenance
S&T	Science and Technology
Santa Rosa.....	Santa Rosa Dam and Reservoir
SECURE	Science and Engineering to Comprehensively Understand and Responsibly Enhance Water Act
shiner.....	Pecos Bluntnose Shiner
SOP.....	Standing Operating Procedures
STAR	Security Tailored Assessment Report
Sumner.....	Sumner Dam and Lake
SWEP.....	Small-Scale Water Efficiency Projects
USACE.....	U.S. Army Corp of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VCP.....	Vaughan Conservation Pipeline
WaterSMART	Secure and Manage America’s Resources for Tomorrow
WIIN.....	Water Infrastructure Improvements for the Nation

Introduction

The Bureau of Reclamation has numerous authorized Projects on the Pecos River. This report will limit discussion to the Carlsbad and Fort Sumner Projects. The Carlsbad Project was one of Reclamation's earliest projects, and Reclamation holds title to three of the four dams within the Project as well as jointly holding a water storage permit with the Carlsbad Irrigation District (CID). The Fort Sumner Diversion Dam (FSDD), constructed by private interests in the late 1800s, was reconstructed and rehabilitated by Reclamation in the early 1950s. Reclamation holds title to the dam and inspects it and certain other facilities within the Fort Sumner Irrigation District (FSID).

Reclamation's Albuquerque Area Office (AAO) has oversight responsibilities for these Projects. Figure 1 shows locations of major dams, partner irrigation districts, and important gages in the Pecos River Basin.

Reclamation's Annual Report to the Pecos River Commission contains all required reporting information on the Projects mentioned above. It also informs the Commission of proposed changes in programs, compliance requirements, management activities, and strategies that may affect operations, operating conditions, and/or the Compact, including Endangered Species Act (ESA) issues.

Data

All storage and flow data used in this report for the three Reclamation-owned reservoirs are from electronic instrumentation maintained by the U.S. Geological Survey (USGS) and available at https://www.usbr.gov/uc/water/hydrodata/reservoir_data/site_map.html. Unless otherwise specified, reservoir elevations are the daily elevation recorded at midnight of the date listed, and daily storage values correspond to that end-of-day elevation. Reservoir elevations are reported in the North American Vertical Datum of 1988 (NAVD 88), except for Avalon Reservoir elevations which are reported in the Project Datum.

Reclamation uses weather and pan evaporation data collected and recorded by CID's dam tenders, typically at about 8:00 a.m. daily. Weather and evaporation data used by Reclamation is available upon request to AAO.

The stream gage data used within this report were downloaded from the USGS various gage web pages linked from here: <https://waterdata.usgs.gov/state/new-mexico/>.

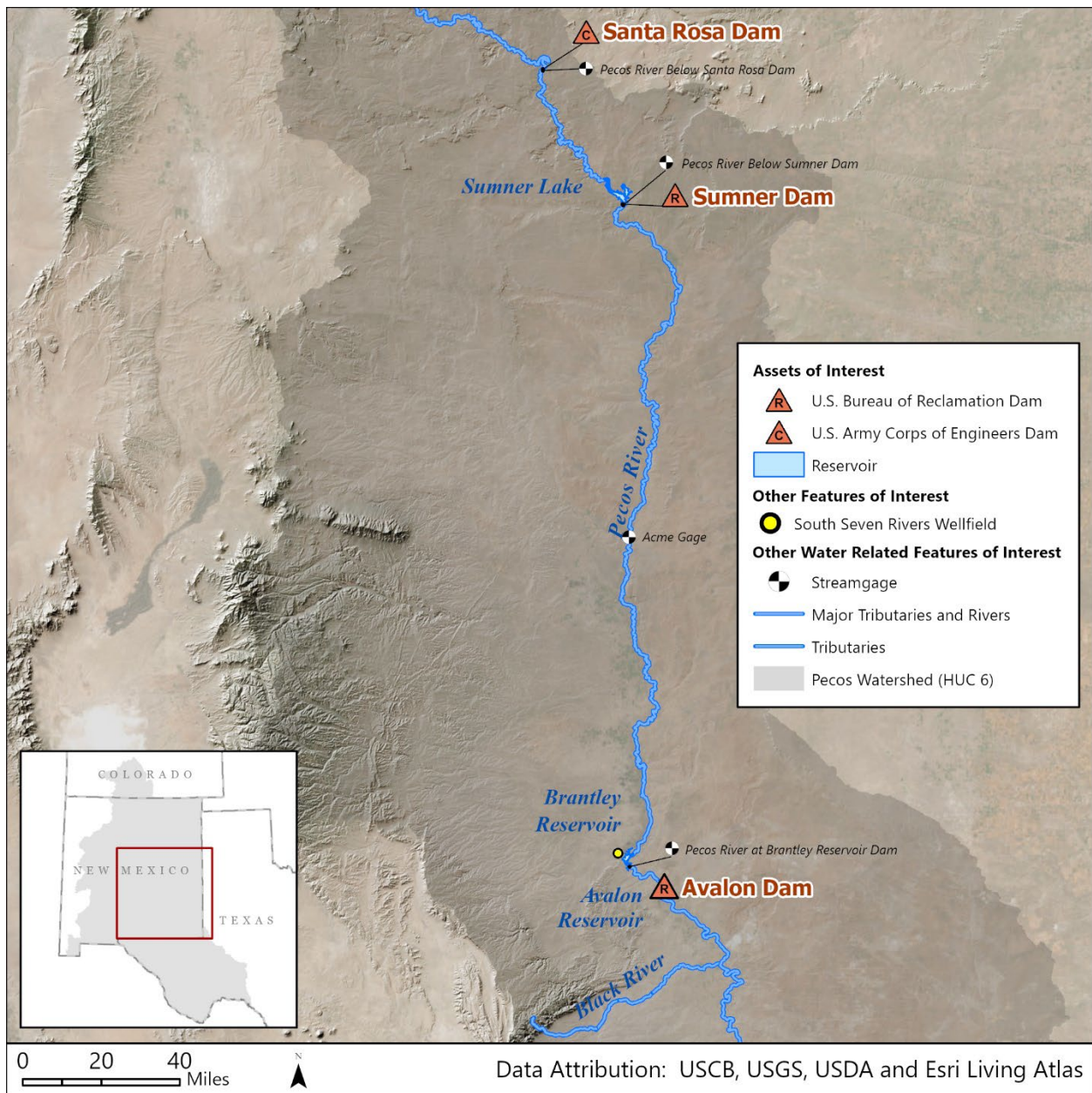


Figure 1: Map of the Pecos River Basin focused on Reclamation's projects

Carlsbad Project

The Carlsbad Project includes four federal facilities on the Pecos River in New Mexico: Santa Rosa Dam (formerly Los Esteros), Sumner Dam (formerly Alamogordo), Brantley Dam, and Avalon Dam. Reclamation and the CID jointly hold the storage permit for the four reservoirs. There are three Carlsbad Project facilities owned by Reclamation and operated by CID that are used to divert water to storage and release water for beneficial use by CID: Sumner, Brantley, and Avalon Dams. The U.S. Army Corps of Engineers (USACE) owns and operates Santa Rosa Dam and Lake, which contains the majority of Carlsbad Project storage when the system is full. CID is in southeastern New Mexico near the City of Carlsbad. The Carlsbad Project authorizes irrigation on up to 25,055 acres from just below Avalon Dam to the Black River area. A brief description of the federal facilities follows:

- Santa Rosa Dam and Lake (hereafter Santa Rosa), the northernmost Project facility on the Pecos River, is a USACE-owned flood control facility. Construction of this facility was completed in 1980, and Santa Rosa stores a portion of the Carlsbad Project water. The entitlement storage for this facility, which is space set aside to meet the Project purpose of irrigation, was 100,709 acre-feet (af) in 2024.
- Sumner Dam and Lake Sumner (hereafter Sumner), a Reclamation-owned dam, was completed in 1938, and was the primary storage facility on the Pecos River for the Carlsbad Project until Santa Rosa was completed. The entitlement storage for Sumner was 31,925 af in 2024.
- Brantley Dam and Reservoir (hereafter Brantley) is a Reclamation-owned dam, completed in 1989 to replace McMillan Dam and Reservoir which was immediately upstream. This facility is about 225 river miles downstream from Sumner. The entitlement storage for this facility is 40,000 af.
- Avalon Dam and Lake (hereafter Avalon) is a Reclamation-owned dam, which Reclamation rebuilt in 1907 as part of the Carlsbad Project. The entitlement storage for this facility is 3,866 af.

Operations

Total Conservation Storage

Annually, Reclamation adjusts the conservation storage entitlements for the four Pecos River reservoirs in New Mexico (Santa Rosa, Sumner, Brantley, and Avalon) based on estimated sediment accumulation while keeping the total storage entitlement at 176,500 af. Table 1 shows the 2024 storage entitlements for these Reservoirs.

Table 1: 2024 Pecos River Reservoir Storage Entitlements

Reservoir	Entitlement Storage (af)	Minimum Pool (af)	Total Estimated Sediment Accumulation (af)	Total Conservation Storage (af)	Conservation Elevation (feet) NAVD 88*
Santa Rosa	100,709	0	1,660	102,369	4,750.02
Sumner	31,925	2,500	1,492	35,917	4,260.88
Brantley	40,000	2,000	835	42,835	3,256.37
Avalon	3,866	600	0	4,466	3,177.40
Total	176,500		3,987	185,587	

*Note that Avalon elevation references Project Datum

On January 1, 2024, conservation storage in the Carlsbad Project reservoirs was 29% of full. Santa Rosa, Sumner, Brantley, and Avalon Reservoirs were at approximately 14%, 48%, 49%, and 41%, respectively. On December 31, 2024, the total storage in the reservoirs was 55% of the conservation volume. Santa Rosa, Sumner, Brantley, and Avalon Reservoirs were at approximately 40%, 43%, 99%, and 58%, respectively.

Santa Rosa Operations

Carlsbad Project storage and releases in and from Santa Rosa Reservoir, a USACE facility, were directed by Reclamation in coordination with CID and USACE. All inflow into Santa Rosa was stored for the Carlsbad Project. There were two releases from Santa Rosa in 2024 for Carlsbad Project operations. Santa Rosa operations are described in the USACE report to the Pecos River Compact Commission.

The Natural Resources Conservation Service's (NRCS) April 2024 most probable streamflow forecast for March through July, predicted 38,000 af of inflow into Santa Rosa, or 93% of the 30-year median of 41,000 af. Observed March through July inflow to Santa Rosa was 38,625 af, 94% of median, as measured at the USGS Pecos River Above Santa Rosa gage. USACE uses a mass balance equation to calculate reservoir inflow so their reported volume differ from what is reported here.

Sumner Operations

Reclamation directs the CID dam tender on storage and releases from Sumner Dam to maintain its water rights and for ESA compliance.¹

All natural inflow to Sumner is stored for the Carlsbad Project when inflow is greater than the bypass needed for:

- (1) FSID's direct flow diversion right,² and
- (2) a downstream Biological Opinion (BO) target flow of 5 cubic feet per second (cfs) at the USGS Pecos River near Acme, as amended by the U.S. Fish and Wildlife Service (USFWS).

¹ See Water Operations and Water Supply Conservation ESA Compliance section of this document for additional information on Reclamation's ESA commitments and requirements.

² See Fort Sumner Project section of this report.

A flow of 5 cfs or greater at the USGS Pecos River near Acme gage indicates continuous river flow.

Reclamation stored 4,500 af of supplemental water³ in Sumner during 2024. This included 750 af of water pumped into Brantley Reservoir and exchanged for 1,000 af of water stored in Sumner Reservoir, called the Fish Conservation Pool (FCP). Through an agreement with FSID, Reclamation also stored 3,500 af of water forborne by FSID (Forbearance) from February 8 to 13, and from March 7 to May 17. The supplemental water was stored in the Carlsbad Project storage space, as stated in the 2009 Carlsbad Project Water Management Agreement (2009 Agreement) between Reclamation and CID, and was released to meet BO flow targets.

During the non-irrigation season, 416 af of bypass was released at an average rate of 10 cfs to meet BO target flows. It was released from January 1 to 5, January 30 to February 7, and February 14 to 19. From February 8 to 13, 114 af of FCP water was released. During the irrigation season (March 1 to October 31), Reclamation bypassed a total of 238 from May 6 to 13. In total, Reclamation bypassed 654 af for downstream BO target flows in 2024.

Stored Carlsbad Project water in Santa Rosa and Sumner is released as a block at CID's direction and in consultation with Reclamation and the USACE. BO requirements restrict the duration of block releases from Sumner to a maximum of 15 continuous days and a cumulative annual duration of 65 days with a minimum of 14 days between releases. Block releases, when possible, are scheduled to alleviate river intermittency. These block release restrictions are not enforced during flood operations. Reclamation's totals for Santa Rosa block releases may differ from the USACE totals as Reclamation uses USGS data and USACE uses their own mass balance data.

There were two block releases during the 2024 irrigation season from Santa Rosa and Sumner. The first block release started from Santa Rosa on May 13 and ended on May 24. It started from Sumner on May 15 and ended May 29. The average release rate from Sumner was 1,417 cfs. The total volume for the block release from Sumner was 42,171 af. Of that, FSID diverted 2,830 af of that, leaving 39,345 af for delivery to Brantley for use by CID.

The second block release from Santa Rosa began on August 5 and ended August 29, and from Sumner it ran from August 7 to 17. The average release rate from Sumner was 1,301 cfs. The total volume for the block release from Sumner was 28,392 af. FSID diverted 2,065 af of that, leaving 26,327 af for delivery to Brantley for use by CID.

Releases of Reclamation's supplemental water occurred intermittently throughout the year when bypass through Sumner to meet ESA flow targets was unavailable. To avoid river intermittency, the supplemental water was released at an average rate of 10 cfs. On December 31, 2024, 2,581 af of supplemental water remained in storage in Sumner and reverted to Carlsbad Project supply for future irrigation releases per the 2019 Depletions Agreement.

Sumner began 2024 with 17,094 af (4,251.04 ft) in storage. Total storage reached a maximum on May 20, 2024, at 24,270 af (4,255.39 ft). Sumner's minimum storage occurred on October 18, 2024, at 4,678 af (4,237.41 ft). On December 31, 2024, Sumner had 15,535 af (4,249.93 ft) in storage. Figure 2 shows Sumner's total storage and release.

³ See Supplemental Water section of this report.

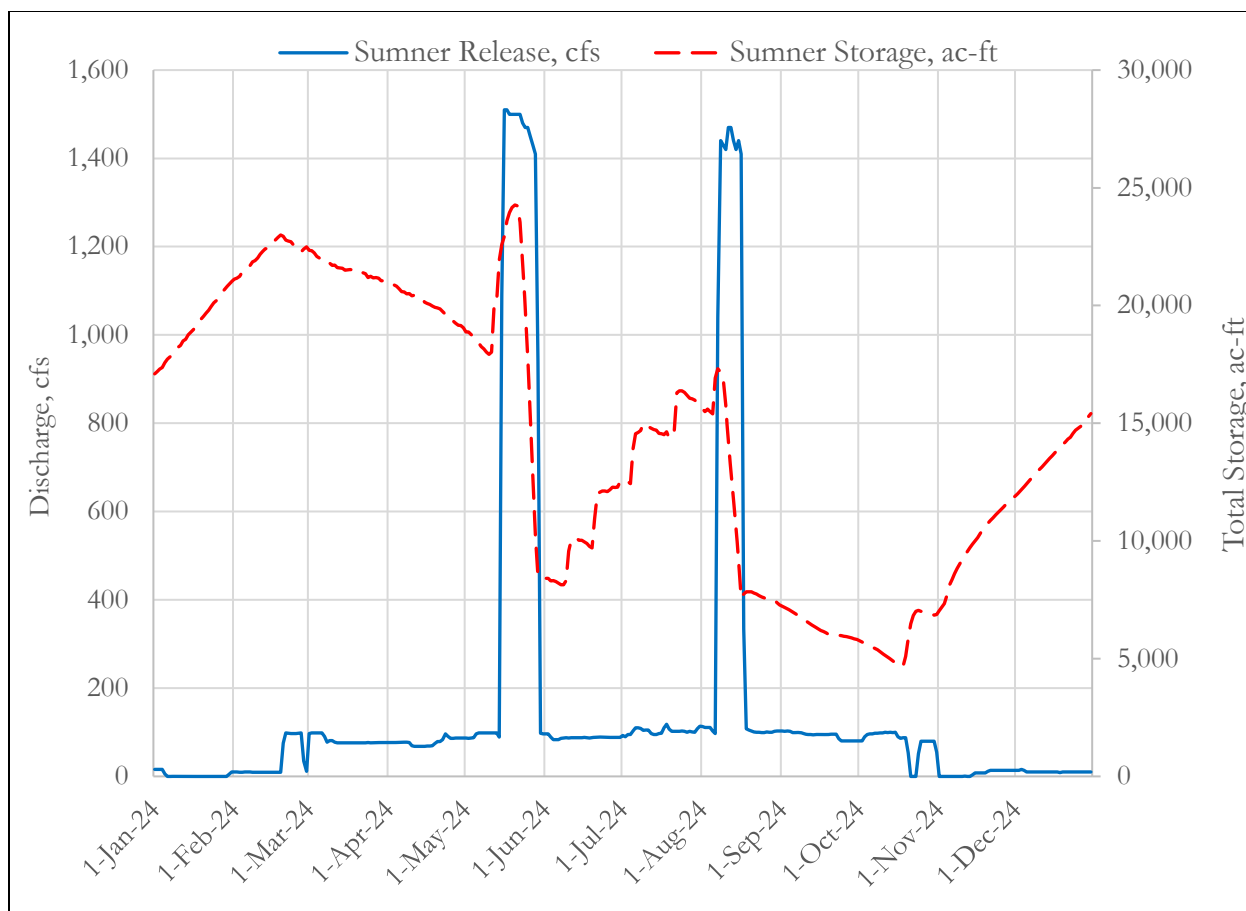


Figure 2: Sumner Dam Storage and Release

Brantley Operations

All inflows to Brantley in 2024 were stored for the Carlsbad Project. Brantley was operated normally during irrigation season (March 1 through October 31). Normal operations release water to maintain a sufficient volume in Avalon to deliver water to CID for irrigation. Reclamation agreed to a continuous minimum release of 20 cfs⁴ to mitigate for impacts of Brantley Dam on Major Johnson Springs, except as follows when releases may be terminated:

- To facilitate emergency repairs at Avalon's outlet structure,
- During periods when the water in storage in Brantley is reduced to the minimum pool of 2,000 af,
- During periods of spill from Avalon,
- When prudent use of irrigation water would prevent such releases, or when water is not available.

In 2024, a 20 cfs release from Brantley was maintained when there was no irrigation release.

⁴ This minimum release is documented in letters with the New Mexico Department of Game and Fish in 1982, and the Environmental Commitments of the Final Environmental Statement for the Brantley Project, New Mexico, and its final supplement filed with the Environmental Protection Agency in 1982.

Brantley began the year with a total storage of 21,185 af (3,247.62 ft) and on December 31, 2024, contained 42,265 af (3,256.19 ft), which was also the maximum for the year. Minimum storage occurred on October 20 at 12,240 af (3,242.15 ft). Figure 3 depicts Brantley storage and release. The green line indicates maximum conservation storage for irrigation.

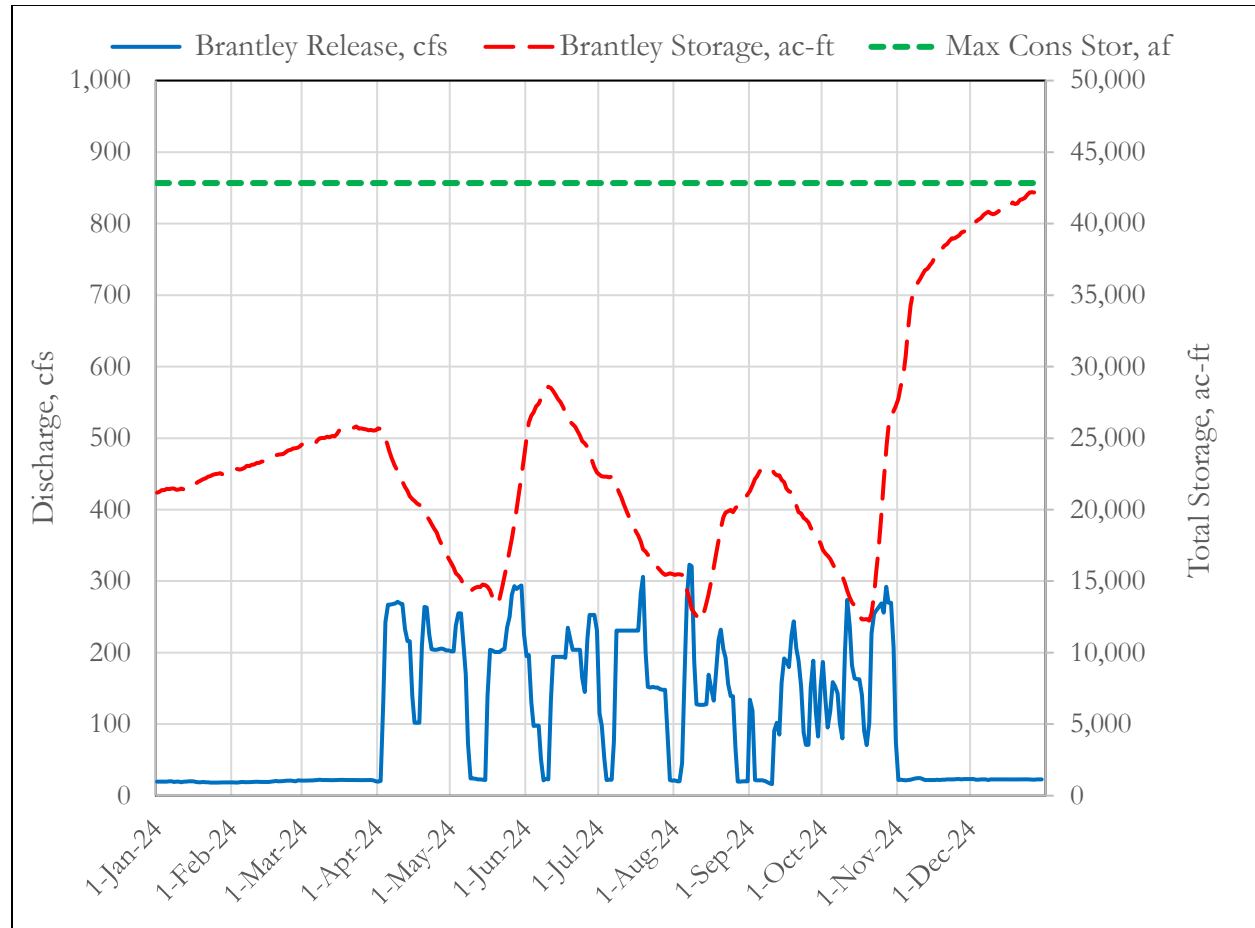


Figure 3: Brantley Dam Storage and Release

Avalon Operations

Due to the small reservoir capacity and the location of Brantley Dam approximately 10 miles upstream, Avalon is used primarily as a diversion dam to meet irrigation demand for CID. Water released from Brantley is re-regulated at Avalon, which releases into the CID Main Canal.

Avalon began 2024 at 1,833 af (3,174.17 ft; project datum) and on December 31, 2024, had 2,601 af (3,175.18 ft) in storage. Minimum storage occurred on May 25 at 869 af (3,172.61 ft). Maximum storage was on August 26 with storage of 3,033 af (3,175.71 ft).

Releases to the Carlsbad Main Canal began on March 31, and a total of 63,054 af were released in 2024. The maximum rate of release into the canal was 314 cfs on October 27 and the last release in 2024 was on October 31. Figure 4 shows Avalon storage and release.

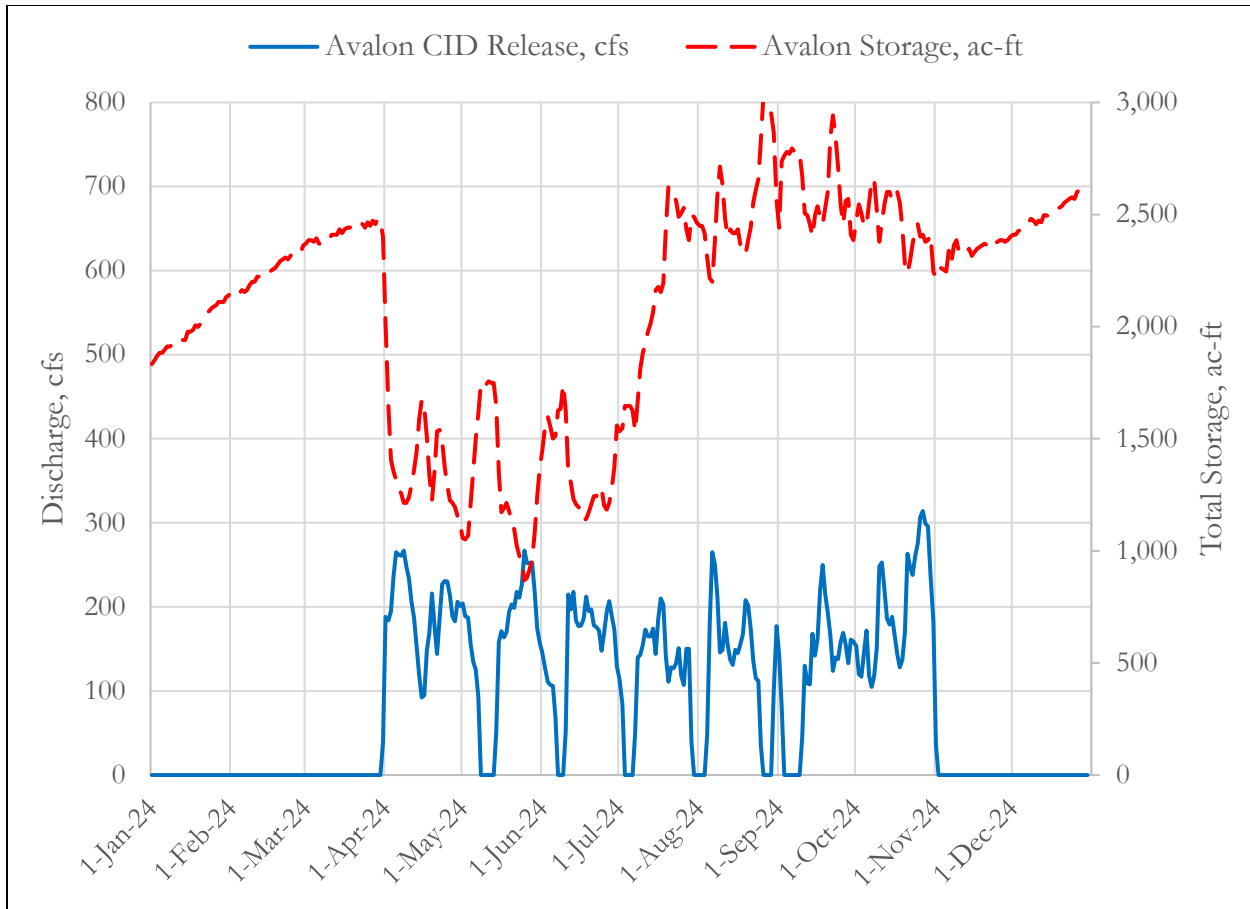


Figure 4: Avalon Dam Storage and Release

Pecos River Settlement Implementation

The 2003 Pecos Settlement Agreement (Settlement) is a landmark agreement reached between New Mexico's principal Pecos River Basin water management and irrigation entities. Its primary objective is to ensure permanent compliance with the 1948 Pecos River Compact and the 1988 U.S. Supreme Court Amended Decree in *Texas v. New Mexico*. In addition, it aims to help resolve intrastate disputes between Pecos Basin water-right owners, primarily over priority administration. The Settlement is the outcome of what was known as the Pecos Consensus Plan, conceived and refined by a broad spectrum of Pecos Basin stakeholders over a roughly two-year period. The parties to the agreement are the New Mexico Office of the State Engineer (NMOSE), New Mexico Interstate Stream Commission (NMISC), Reclamation, CID, and the Pecos Valley Artesian Conservancy District (PVACD). Objectives of the Settlement include:

- Permanent compliance with the Pecos River Compact and 1988 Amended Decree in *Texas v. New Mexico*,
- An increased and more stable water supply for CID,
- A reduced likelihood of a priority call by CID against junior groundwater pumpers, primarily PVACD (calls were made in 1976, 2013, and 2021),

- Decreased consumptive water use resulting in an improved hydrologic balance in the Pecos Basin.

The Settlement combines several different elements to achieve its objectives.

Water Rights Purchases: The Settlement required the NMISC to purchase and retire, or place in state water conservation programs, irrigation water rights to reduce depletions in the Pecos Basin and increase river flows. State purchases to date include approximately 4,500 acres in CID and 7,500 acres in the Roswell Artesian Basin (RAB). Under specific conditions, state-purchased CID water rights can be used for delivery to Texas, and state-purchased RAB water rights can be used in augmentation well fields to increase supplies for CID or for delivery to the state line.

Augmentation Well Fields: The Settlement also required the NMISC to construct two river augmentation well fields with a combined minimum capacity of 15,750 af per year. NMISC's primary well field, called Seven Rivers, is located adjacent to Brantley. A complementary well field is located near Lake Arthur. All NMISC augmentation wells have been, or are in the process of being, added as additional points of diversion for state-purchased RAB artesian water rights. The Settlement prescribes specific conditions under which augmentation pumping is required either for augmentation of CID's irrigation supply or Compact compliance.

NMISC delivered 14,171 af from the augmentation well fields for the 2024 irrigation season for CID. Due to low reservoir inflow and the need to reach the March 1, 2024, target supply of 60,000 af, NMISC opened the valves at the Lake Arthur wellfield on December 20, 2023, and started pumping at the Seven Rivers Wellfield on January 2, 2024. Valves at the artesian flowing Lake Arthur wellfield were closed in early May 2024 as flow stopped from most of the wells and conveyance losses increased. On October 24, 2024, project supply exceeded the target of 90,000 af and pumping ceased.

Delivery of Water to the State Line: Compact compliance before the Settlement was challenging due to the impoundment of Pecos River flows in Carlsbad Project reservoirs. Settlement algorithms determine an annual delivery of state-purchased CID water rights to Texas. These formulas depend in part on New Mexico's cumulative Compact credit.

Because New Mexico's cumulative Compact credit exceeds 115,000 af as set in the Settlement, the Carlsbad Project did not deliver water to the New Mexico-Texas state line in 2024.

Water Operations and Water Supply Conservation ESA Compliance

The USFWS issued a *Final Biological Opinion for the Carlsbad Project Water Operations and Water Supply Conservation, 2016-2026* (BO; Consultation Number 02WNNM00-2016-F-0506) in 2017. The non-jeopardy determination in the BO is based on the mandatory accomplishment of numerous commitments by Reclamation (12 Conservation Measures, four Reasonable and Prudent Measures, and four Terms and Conditions). The USFWS provided an Incidental Take Statement for the threatened Pecos Bluntnose Shiner (*Notropis simus pecosensis*, shiner) and Interior Least Tern (*Sterna antillarum athalassos*). The Interior Least Tern was removed from the Endangered Species List in

2021. It is no longer monitored at Brantley Reservoir and Reclamation will no longer provide updates in this report.

Term and Condition 1 of the BO stipulates that Reclamation should work with the USACE to allow storage of Reclamation's supplemental water at Santa Rosa Reservoir within 5 years of issuance of the BO. This additional storage could help reduce the effects of river intermittency on the shiner. If the goal of increased supplemental storage at Santa Rosa is reached within the proposed timeframe, the term of the BO, which provides coverage for Project-related water operations and conservation, would be extended for an additional 5 years through 2032.

Reclamation has made significant progress towards meeting this goal but requested a 2-year extension from the USFWS in 2022 and an additional 6-month extension in 2024. The USFWS agreed that Reclamation has made significant progress towards Term and Condition 1 and issued the 2-year extension and the additional 6-month extension to meet the goal, which would then extend ESA coverage under the BO to 15 years. In addition, the USFWS agreed that the 35 cfs target flow at the Taiban gage would no longer apply from November 1 through March 1 as long as the river is kept continuous as shown by an Acme gage flow of 5 cfs or greater.

Pecos Bluntnose Shiner

The BO defines two types of hydrologic conditions for a given year, Normal and Critically Dry. Each month from January to June, Reclamation assesses various hydrologic measures until a final determination of the hydrologic condition is made in June. Depending on the month, the hydrologic condition is determined by the percent of the Pecos basin in New Mexico classified as in Extreme or Exceptional Drought per the U.S. Drought Monitor, the proportion of the 30-year average of the NRCS' Santa Rosa Reservoir inflow forecast (note that the NRCS now compares the forecast to the median, but *average* is stated in the BO), or the percent of time that bypass at Sumner Dam is available during the early part of the irrigation season.

During Normal hydrologic conditions, the BO establishes a surrogate for quantifying incidental take of the shiner using the mean 3rd trimester density to determine if the incidental take attributable to the Carlsbad Project has been exceeded. Under Normal hydrologic conditions, if the 3rd trimester shiner density increases from the previous year's 3rd trimester density or stays at or above 12 fish per 100 m², then incidental take due to the Carlsbad Project is not exceeded. If under Normal hydrologic conditions, the 3rd trimester shiner density is decreasing and falls below a density of 12 fish per 100 m², then take is exceeded and further consultation with the USFWS is necessary to determine if the change in population density is due to the Project.

A designation of Critically Dry indicates that Reclamation may be unable to cover the deficit in the hydrologic system with its available supplemental water resources. In that case, the Taiban gage target flow of 35 cfs is no longer applied, and Reclamation instead focuses on maintaining 5 cfs at the Acme gage, which helps ensure that the Sumner to Brantley reach is continuous for supporting the shiner. Additionally, no take from the Carlsbad Project occurs under Critically Dry conditions provided that all water resources at Reclamation's disposal are used to minimize drying (see Supplemental Water section below).

The shiner is monitored annually to assess population status in the Pecos River and determine the incidental take attributable to Reclamation's Carlsbad Project. Reclamation funds the USFWS for fish sampling from April to October and receives their trip reports. These data are compiled into an

annual report on the status of the shiner. The following is a summary of monitoring data on the status of the shiner.⁵

In 2024, which was a Critically Dry hydrologic year, 12 sites were monitored on six separate sampling trips. The Pecos River fish community was monitored in March, April, June, September, and twice in October 2024. A total of 14,618 fish were collected from 21 different species. More fish were collected in 2024 than in 2023. In 2024, the most abundant fish species was the Pecos Bluntnose Shiner. Red Shiner (*Cyprinella lutrensis*), Plains Minnow (*Hybognathus placitus*), Speckled Chub (*Macrhybopsis aestivalis*), Arkansas River Shiner (*Notropis girardi*), Rio Grande Shiner (*Notropis jemezianus*), and Pecos Bluntnose Shiner accounted for 89.2% of all fish collected in 2024.

During the 3rd trimester of 2024 (August–December), 3,017 shiner were collected from the Pecos River, comprising a mean percent of total that was 34.5% of all species collected (Table 2). The 2024 shiner 3rd trimester mean density was 39.8 ± 3.8 shiner per 100 m², higher than the 3rd trimester density in 2023 of 16.7 ± 3.3 fish per 100 m² and above the 12 fish per 100 m² take threshold established by the BO. Therefore, take was not exceeded in 2024.

Table 2: Presence and Abundance of Pecos Bluntnose Shiner in Trimester 3 Only

Calendar Year	Total Site Visits	Occupied Sites	Percent of Sites Occupied	Total # of Shiner	Total # of Fish (all species)	Shiner Percent of Total	Total Area Sampled (m ²)	Density (Shiner/ 100 m ²)
2017	31	31	100	749	6,250	14.1	10,789	7.1
2018	33	33	100	2,419	10,499	22.0	7,659	33.3
2019	36	36	100	1,313	8,091	17.1	9,248	14.1
2020	35	35	100	1,052	13,667	8.7	9,415	15.3
2021	36	36	100	1,888	12,690	15.1	7,938	25.4
2022	35	33	94.3	770	12,487	7.8	7,491	10.8
2023	36	36	100	1,416	6,845	19.9	9,015	16.7
2024	33	33	100	3,017	8,886	34.5	7,484	39.8

Supplemental Water

As part of the BO conservation measures, Reclamation established a supplemental water acquisition program to augment Pecos River flows between Sumner Dam and Brantley Reservoir. It is intended to avoid or minimize river intermittency and to acquire additional water for the Carlsbad Project to offset reductions in Project water supply caused by Reclamation’s bypass and storage operations for ESA compliance, relative to historic operations.

In an October 5, 2022, letter, Reclamation asked USFWS to lift the Taiban target of 35 cfs from November to February. USFWS responded on October 26, 2022, and amended the BO as follows: *Under “non-Critically Dry” conditions, and given a continuous river, Reclamation may operate “without” the target flow of 1 m³/s (35 cfs) at the Taiban gage from November 1 to February 28. The Pecos River is considered*

⁵ Davenport, S.R. 2025. 2024 Pecos River Basin Fisheries Update Summary Report. DRAFT report submitted to US Bureau of Reclamation, Albuquerque Area Office.

continuous when the Acme gage is at minimum of 0.14 m³/s (5 cfs). This operational standard allows for a judicious use of limited water resources while maintaining a continuous river.

Reclamation's Direct Flow Supplemental Water

Reclamation's direct flow supplemental water supplies are used only to avoid river intermittency and are not used to meet river flow targets.

In 2024, Reclamation stored 3,500 af of forbearance water through an agreement with FSID and 1,018 af of FCP water, for which Reclamation pumped 764 af from the Seven Rivers wellfield directly into Brantley, in Lake Sumner for supplemental use as negotiated through an agreement with NMISC and CID. Reclamation also received 1,297 af as a credit from 2023 depletions accounting in storage in Sumner on October 1, 2024.

In 2024, all 1,018 af of FCP, all 1,297 af of depletions credit, and 1,167 af of forbearance water were released from Sumner Dam at the direction of Reclamation. On December 31, the remaining 2,333 af of forbearance water in Sumner Reservoir were returned to Carlsbad Project Storage.

Through agreements with NMISC, Reclamation acquired groundwater to augment flow on the Pecos River. In 2024, at Reclamation's direction, NMISC delivered 2,589 af of groundwater from the Vaughan Conservation Pipeline (VCP). The maximum daily output from the VCP in 2024 was 8.5 cfs, while the average was 8.1 cfs. The VCP delivered water from January 4 to February 27, March 27 to May 13, July 3 to August 4, and September 27 to October 22, 2024. Data from March to August are estimated from individual well meters as the meter at the outfall malfunctioned and was replaced in September.

In 2024, Reclamation operated its Seven Rivers wells for delivery to Brantley in exchange for FCP water stored in Sumner. The north and south well began pumping on February 19. The volume of 750 af needed for the exchange was delivered on May 11 and an additional 14 af were pumped incidentally. The average pumping rate was 7.28 af per day.

Reclamation's Offset Supplemental Water

Reclamation leases water from willing water rights owners within the Pecos Basin for delivery to the Carlsbad Project in Brantley Reservoir to offset the depletions caused by ESA-related operations. Most of the water rights are owned by PVACD and were associated with lands near Hagerman and Lake Arthur, NM. The land is fallowed, and the water is either left in the river or delivered to the river and used by CID for irrigation. In 2023, Reclamation leased 1,158 af of surface water rights that were previously pumped directly from the river (referred to as River Pumpers), of which 507 af was released to the river from the Hagerman Canal.

Depletions and Offsets Accounting

Reclamation, NMISC, and CID entered into a 10-year Pecos River Depletions Accounting and Offsets Agreement on October 24, 2019 (2019 Depletions Agreement). The 2019 Depletions Agreement established terms and methodologies to account for reductions and increases in Carlsbad Project water supply due to modification of Reclamation's Sumner Dam operations and supplemental water released in support of ESA compliance. The 2019 Depletions Agreement replaces multiple, sequential prior agreements that date back to 2008.

Due to issues identified in the Two-Stream Accounting Model, the parties agreed that no credit or debit would be calculated in 2022. In 2024, the parties accepted a new model, called the PROM Depletions model, that was used to calculate the 2023 depletions. The calculations found a credit of 1,297 af, which the parties agreed to on September 11. All the credit was released from Sumner Dam by December 28.

Facility Review and Safety of Dams Programs

Reclamation reviews and examines the transferred Carlsbad Project facilities in accordance with federal and agency-specific guidance. For all dams classified as having either high or significant hazard potential, the review and examination program includes annual site inspections (ASIs); periodic facility reviews (PFRs) and comprehensive reviews (CRs) every eight years; and periodic examinations of normally inaccessible features, special examinations, and surveys.

Operation and Maintenance (O&M) recommendations for high and significant hazard dams are determined and categorized by Reclamation. Category 1 O&M recommendations are for the correction of severe deficiencies where immediate and responsive action is required to ensure structural safety and operational integrity of a facility. Category 2 O&M recommendations are for a wide range of important matters where action is needed to prevent or reduce further damage or preclude possible operational failure of the facility. Category 3 O&M recommendations are sound and beneficial suggestions to improve or enhance the O&M of the project or facility.

Sumner Dam

Sumner Dam has one incomplete Category 1 O&M recommendation which is related to the rehabilitation of the three radial gates. Sumner Dam began 2024 with 15 incomplete Category 2 O&M recommendations. No new Category 2 O&M recommendations were issued in 2024. One new Category 3 O&M recommendation was issued for the removal of vegetation on the slope of the dam. Four Category 2 O&M recommendations were completed in 2024. At the end of 2024, one Category 1, 10 Category 2, and one Category 3 O&M recommendation remained incomplete.

Sumner Reservoir storage is currently restricted to a maximum of 35,917 af (4,259.0 ft) as an interim risk reduction measure per Safety of Dams recommendation 2019-SOD-A. This restriction limits loading on the radial gates until they are replaced. The National Environmental Policy Act (NEPA) and other environmental compliance for the radial gates replacement project started in late 2023. Construction is tentatively scheduled to begin in 2026.

The outstanding Category 1 O&M recommendation will be completed once the Sumner Dam radial gates are replaced. Of the remaining incomplete Category 2 O&M recommendations, one will be complete once the Sumner radial gates replacement project concludes. Three recommendations await the installation of a safety/security fence on the right abutment of the dam, currently awaiting installation. Several recommendations are awaiting various updates to the Standing Operating Procedures (SOP). Two recommendations will be complete once the data processing of the service spillway survey and crack mapping is finished, tentatively scheduled for March 2025. The spillway survey was conducted in December 2025.

An updated sediment survey for Sumner Reservoir was completed in December 2023 by both bathymetric and photo-imagery means. The photo-imagery data are being post processed, and an updated area capacity table is expected in March 2025.

No significant security issues for Sumner Dam were identified during the 2024 Security Tailored Assessment Report (STAR). The current security-related recommendation to install a fence on the upper portion and basin wall of the right abutment of the dam is in process and should be completed in April 2025..

Table 3: Sumner Dam Facility Review and Exam Dates

Review/Exam	Date of Last Review/Exam	Year of Next Scheduled Review/Exam
Annual Site Inspection (ASI)	8/5/2024	2025
Periodic Facility Review (PFR)	2/15/2022	2030
Dive Exam (Prep for CR)	1/9/2018	2026
Comprehensive Review (CR)	2/6/2018	2026
Annual Security Equipment Inventory (ASEI)	6/2/2023	2025
Security Tailored Assessment Report (STAR)	8/5/2024	2028
Sediment Survey	12/2024	2034
Service Spillway Survey	1/2025	2035

Brantley Dam

At the beginning of 2024, Brantley Dam had no incomplete Category 1 O&M recommendations, three incomplete Category 2 O&M recommendations, and no incomplete Category 3 O&M recommendations. No new Category 2 O&M recommendations were issued in 2024. One Category 2 O&M recommendation was completed in 2024. At the end of 2024, two Category 2 O&M recommendations remain incomplete.

Of the remaining two incomplete Category 2 O&M recommendations, one is awaiting the spillway inspection and crack mapping survey, scheduled for March 2025. The other recommendation will be complete once the inundation mapping is completed, tentatively scheduled for 2025.

There are sinkholes upstream and downstream on the left (southeast) side of Brantley Dam. The sinkholes are regularly monitored visually during ASIs and documented via photographic surveys every eight years. The last sinkhole survey was conducted in August 2019. The sinkholes appear to be filling in naturally and are more difficult to find during each survey. The next sinkhole survey will be completed at the same time as the next sediment survey.

No significant security issues were identified for Brantley Dam during the 2024 STAR.

Table 4: Brantley Dam Facility Reviews and Exams Dates

Review/Exam	Date of Last Review/Exam	Year of Next Scheduled Review/Exam
ASI	8/8/2024	2025
PFR	2/16/2022	2030
Dive Exam (Prep for CR)	2/20/2018	2026
CR	2/7/2018	2026
ASEI	6/14/2023	2025
STAR	8/8/2024	2028
Sinkhole Survey	09/2019	2025/2026
Embankment Survey	12/2022	2030
Service Spillway Survey	N/A	2025

Avalon Dam

At the beginning of 2024, Avalon Dam had no incomplete Category 1 O&M recommendations, twenty-two incomplete Category 2 O&M recommendations, and no incomplete Category 3 O&M recommendations. One new Category 2 O&M recommendation was issued in 2024 to install monitoring stakes and report on the condition of a depression on the upstream side of the dam. Five Category 2 O&M recommendations were completed in 2024. Several recommendations were combined and updated to clarify the intent of what is required related to the cylinder gate outlet works. A total of 18 incomplete Category 2 O&M recommendations remained at the end of 2024.

Six incomplete Category 2 O&M recommendations pertain to the Avalon Dam outlet works and include SOP updates. The outlet works consist of two cylinder gates, a hoist platform, and a walkway, all in poor structural condition and in need of repair or replacement. Reclamation is working with CID to find grants for the rehabilitation of the outlet works. CID's proposed plan is to convert the cylinder gates into morning glory spillways, but they currently lack the funding to complete the work.

Four of the incomplete Category 2 O&M recommendations are routine O&M scheduled to be completed by CID in 2025, including buoy maintenance, Spillway #1 metal work, and vegetation control. Three recommendations are for concrete work including a vertical crack in Spillway #2. The remaining recommendations, tentatively scheduled for 2025, require updated inundation mapping and repairs to the footbridge and west storage building roof.

No significant security issues for Avalon Dam were identified during the 2024 STAR.

Table 5: Avalon Dam Facility Reviews and Exams Dates

Review/Exam	Date of Last Review/Exam	Year of Next Scheduled Review/Exam
ASI	8/9/2024	2025
PFR	2/17/2022	2030
CR	2/8/2018	2026
ASEI	6/14/2023	2024
STAR	8/9/2024	2028
Sediment Survey	3/2022	2030

Fort Sumner Project

The Fort Sumner Project includes the FSDD, a Reclamation-owned dam, reconstructed by Reclamation in 1951. This facility is about 15 river miles downstream of Sumner Dam and diverts FSID's senior direct flow diversion water right into their canal. This facility replaced an earlier, privately-owned dam, and is operated and maintained by FSID. FSID includes 8,035 acres, of which 6,500 are classified as irrigable. The U.S. Army first irrigated some of these lands in 1863. Most of the area has been irrigated continuously since 1907.

Reclamation owns FSDD and the first few miles of the main canal. FSID operates and maintains these facilities through a contract with Reclamation. Reclamation does not pay any of the O&M costs of the facilities. FSID is contractually responsible to Reclamation for full repayment of the construction costs for the Fort Sumner Project. Full repayment on this contract was made in July 2023 and in 2023 Reclamation and FSID began discussing title transfer of Reclamation-owned FSID facilities (FSDD and the first few miles of the main canal).

FSID has a direct flow diversion right with a priority date of March 18, 1903. FSID's right to divert up to 100 cfs of the Pecos River's natural flow is senior to the Carlsbad Project's right to storage at Santa Rosa and Sumner. Therefore, Reclamation must not divert to storage at Sumner or Santa Rosa any water necessary to meet FSID's senior diversion water right of up to 100 cfs of natural flow. FSID's water right was determined prior to Reclamation's involvement with FSID and was never transferred to the United States. NMOSE calculates a two-week entitlement for FSID's direct diversion right using estimated natural inflow to Sumner and Santa Rosa over the previous two weeks.

Operations

The irrigation season for FSID typically begins March 1 and ends October 31. FSID is also permitted to divert for two, eight-day periods during the winter. This winter entitlement has historically been diverted just prior to March 1.

During the 2024 irrigation season, 0 to 100 cfs was bypassed through Sumner Dam for FSID based on their OSE-calculated entitlement. FSID diverted 42,683 ac-ft into the FSID main canal as recorded by the USGS Fort Sumner Main Canal near Fort Sumner, NM, gage (USGS gage number 08385000). FSID diverted flows up to 100 cfs arriving at their diversion and at times released Reclamation's supplemental water back to the river at the Sand Gate Diversion (USGS gage number 08385503). A total of 1,273 ac-ft was released back to the river at the Sand Gate. FSID's entitlement in 2024 was 44,514 ac-ft, not including the winter allotment.

Facility Review of Operation and Maintenance

Reclamation reviews and examines the Fort Sumner Project facilities in accordance with federal and agency-specific guidance. The Review of Operation and Maintenance (RO&M) Program is a periodic review and field examination program of constructed project facilities and systems that may

result in categorized O&M recommendations for those facilities. The categories are the same as those for high and significant hazard potential dams described earlier in this report.

There is one outstanding Category 2 O&M recommendation to sandblast and coat the downstream and upstream sides of the radial gates for the Fort Sumner Diversion Dam. Two Category 2 recommendations were completed in 2024.

The last RO&M exam was completed on February 22, 2021, and the associated report was published in May 2021. No new recommendations were made as a result. The next RO&M exam is scheduled for 2027.

Planning Activities in the Pecos River Basin

Reclamation has selected several stakeholder-driven projects for funding in the Pecos River Basin under the WaterSMART Program at <https://www.usbr.gov/watersmart/index.html>. Below are descriptions of ongoing projects.

The Carlsbad Irrigation District has secured two canal lining grants to increase irrigation efficiency and to help to secure the future of agricultural production for CID customers. These projects are funded under Small-Scale Water Efficiency Projects (<https://www.usbr.gov/watersmart/swep/index.html>) and Water and Energy Efficiency Grants (<https://www.usbr.gov/watersmart/weeg/index.html>) programs. The combined federal award for these grants is \$1,391,818 and work for both awards is anticipated to be completed in 2025.

The New Mexico Institute of Mining and Technology had two ongoing grants from Reclamation's Applied Science Grants program (<https://www.usbr.gov/watersmart/appliedscience/index.html>) to further the State of New Mexico's Water Data Initiative (<https://newmexicowaterdata.org/>) by improving data management and developing decision support tools for water managers in the Pecos Valley. The combined federal investment in these grants is \$496,386.

The City of Roswell is in the final stages of developing their Drought Contingency Plan. This program (<https://www.usbr.gov/drought/planning.html>) focuses on local water supplies and infrastructure that will provide consumers with uninterrupted service during the next drought. The total federal investment in this project is \$200,000.

In 2024 the Hermit's Peak Watershed Alliance was awarded a Cooperative Watershed Management Plan (<https://www.usbr.gov/watersmart/cwmp/index.html>) grant for \$300,000. This grant is for watershed restoration planning activities on the Upper Gallinas River, Lower Mora River, and Sapello River, all of which were degraded due to the Hermit's Peak/Calf Canyon Wildfire that burned over 340 thousand acres. This grant is anticipated to conclude in 2027.