



— BUREAU OF —
RECLAMATION

Summer 2022
Issue 256

Water Operations and Maintenance Bulletin

Recreation and Transportation



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Mission Statement

This *Water Operations and Maintenance Bulletin* is published quarterly through the Asset Management Division of the Dam Safety and Infrastructure Directorate. It serves as a medium to connect personnel who operate and maintain Bureau of Reclamation water supply systems.

History

The *Water Operations and Maintenance Bulletin* has been published quarterly since 1952. Past issues may be read and downloaded at [Water Operations and Maintenance Bulletins](#), where you can also search the entire bulletin database by subject.

Contact

We welcome suggestions for future issue topics, contributing authors, and comments on the *Bulletin*. Please direct all inquiries to drowatEROandM@usbr.gov.

Cover photo: Boats getting ready to head out on a foggy morning at Strawberry Reservoir in Utah (Reclamation).

Editor's Note

This summer 2022 issue marks the beginning of year two of the *Bulletin* since its redesign and reintroduction. We want to thank our readers for engaging with each issue, our authors and Q&A subjects for their time and insights, and Reclamation leadership for the support and direction to make this publication possible. A special thank you also must go out to Jordynn Eld of the CPN Regional Office for her design creativity and craft with each new issue.

As so many of us in the water operations and maintenance community love both working to protect water and land and taking a break from work to recreate outside, we wanted to focus this summer issue on recreation and transportation. We are excited to feature “Reclamation's Recreation Program” along with “Rio Chama Trail Federal Lands Transportation Program Project” to highlight both the big picture history and policy of Reclamation recreation efforts and a recent collaborative, on-the-ground project. “A Tool to Bridge the Transportation Funding Gap: Reclamation's Long Range Transportation Plan” reviews how Reclamation's first long range transportation plan helps connect users to recreation opportunities and safely deliver water to the American public. And finally, “Lower Yellowstone Project Weir and Fish Bypass” describes construction – including an 11,150-foot bypass channel – that allows for the improved passage of migrating pallid sturgeon.

For this issue's Q&A, we caught up with Thomas Michalewicz of the Oklahoma-Texas Area Office. Michalewicz shared his thoughts on engaging with transferred works, the range of duties within an area office, and his plans for retirement. Please enjoy this issue and your summer!

Darion Mayhorn, P.E.

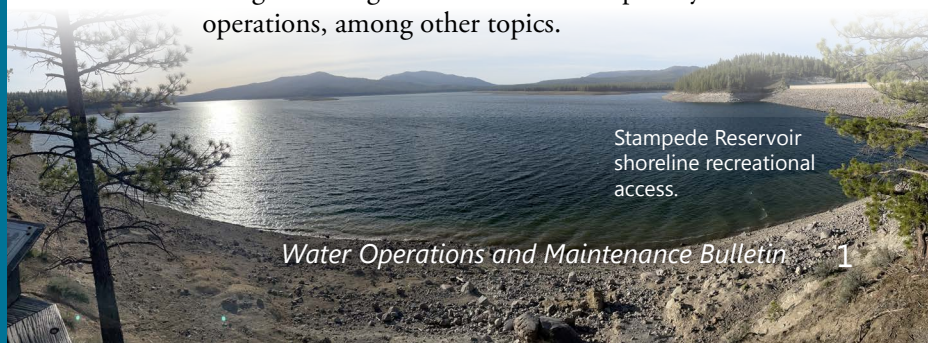
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Around O&M

- **Review of Operation and Maintenance (RO&M) Workshop, May 3-5, 2022**
 - Thanks to all the presenters and participants in this year's Virtual RO&M Workshop! Over 150 Reclamation personnel registered for the event (up 50% from previous years), which fulfills one of the requirements to lead an RO&M inspection.
 - For a copy of the recorded presentations, please [request access to the RO&M Workshop SharePoint](#).
 - Survey responses rated the workshop 4.6/5. Requests for future topics include: case histories of incidents and extraordinary maintenance (XM), remote techniques for condition assessment, and bridge and building inspection considerations. Respondents' top three topics were:
 - Day 1: Concrete Repair, Ridgeway Dam Fish Screen Case Study, Tunnel Inspection
 - Day 2: Corrosion, Gate Testing, El Vado Dam Case Study
- **Bipartisan Infrastructure Law (BIL) Fiscal Year (FY) 2022 Aging Infrastructure Account Selections**
 - On May 9, 2022, Reclamation announced the investment of \$240.4 million for infrastructure repairs in FY 2022 from the BIL. The 46 projects selected for funding are found in all the major river basins and regions where Reclamation operates. The projects include significant repairs on canals, dam spillway repairs, and water pipeline replacements. Project descriptions can be found [here](#).
 - The next application period for XM funds from the Aging Infrastructure Account is planned for October 2022.
- **FAC 02-01 Release**
 - In April 2022, Reclamation finalized major revisions to [FAC 02-01](#), the Directive and Standard for Operating Practices and Procedures for High and Significant Hazard Potential Dams.
 - This release updates requirements for the scope, format, and distribution of Standing Operating Procedures (SOPs) and supplements and revises existing bureau-wide procedures for activities covered by SOPs, including valve and gate testing at outlet works and spillways and reservoir operations, among other topics.



Stampede Reservoir
shoreline recreational
access.

Reclamation's Recreation Program

Ronnie Baca

Recreation Program Manager, Asset Management Division


Whether you're boating across the shallow depths of Lake Mead at Hoover Dam, catching one of the most thrilling Par 3s on the 16th hole at the PGA's "The Greatest Show on Grass," or enjoying dispersed camping and hiking somewhere on the millions of open acres of Bureau of Reclamation (Reclamation)-maintained land, chances are you have been impacted by Reclamation recreation opportunities. Managing partner agreements, directly managed areas, and jurisdictionally transferred recreation are just a small snapshot of the unique ways Reclamation is able to offer recreation to the American public.

Reclamation's Recreation Program operates under multiple laws, regulations, and authorities that permit recreation to varying degrees; however, three authorities, the Federal Water Project Recreation Act of 1965 (Public Law 89-72), the Reclamation Recreation Management Act of 1992 (Public Law 102-575, Title XXVIII), and the Federal Lands Recreation Enhancement Act (REA) of 2004 (Public Law 108-447), drive Reclamation's management of the Recreation Program.

While nearly 47 million visitors recreate annually on the 246 areas administered by Reclamation, visitation more than doubles when considering all

recreation areas that have been created as a result of Reclamation projects. More than 325 recreation areas, including some of the nation's most popular outdoor destinations – such as Lake Mead, Lake Powell, and Lake Shasta – see over 100 million visitors due to the cornerstone legislation that makes this possible: the Federal Water Project Recreation Act of 1965, commonly referred to as Public Law 89-72. The Act allowed Reclamation to seek qualified Federal and non-Federal managing partners for the purpose of developing recreation and fish and wildlife enhancement facilities on Reclamation lands as well as transfer project lands to other Federal agencies for the purpose of recreation.

Reclamation maintains 84 non-Federal partnerships, largely comprised of state, county, and city entities, that manage 183 of Reclamation's recreation areas. The remaining 63 areas are directly managed by Reclamation. Further, 89-72 granted the authority to cost-share in planning, developing, and maintaining facilities with non-Federal partners and allowed for long-term managing partner agreements that ensured recreation would be a staple on public lands and water bodies.



Sunset over Mt. Jefferson viewed from Haystack Reservoir, Oregon. Managing partner is Crook County Parks and Recreation District.



Guided tour by rangers at New Melones as part of Educational Fish (Trout) Classroom Program.

In 1992, Congress determined that some of the provisions of 89-72 were outdated due to an increase in demand for outdoor recreation and an economic fluctuation that made it difficult for partners to afford the maintenance and expanded development of recreation areas. As a result, the Reclamation Recreation Management Act of 1992, Title XXVIII, amended 89-72 to grant an expanded cost-share for the purposes of operations, maintenance, and rehabilitation (OM&R) up to 50%, as well as up to 75% for Fish and Wildlife Enhancement facilities. This authority has greatly benefited smaller sites and partners that see fewer visitors and thus collect fewer recreation fees to use for maintenance. Additional added benefits that cost-share agreements create are the ability to construct the necessary infrastructure and accessible features for people with disabilities as well as opening funds for law enforcement. Conversely, as the nation is currently experiencing similar circumstances that brought a need to establish the Title XXVIII cost-share authority, managing partners that have rarely needed cost-share assistance are now seeking funds for OM&R to help with the rising cost of labor, aging infrastructure, and compliance.

Although Reclamation primarily offers developed recreation opportunities through 89-72, in the absence of a managing partner or project-specific authority, Reclamation's authority to construct recreation improvements is limited to minimum basic facilities. This narrow allowance is used to protect public health and safety by providing guardrails, turnarounds, sanitary facilities, and modifications necessary to provide access for persons with disabilities. Many of Reclamation's directly managed areas fall under this category; however, recreation opportunities such as hiking, biking, camping, and fishing still regularly occur since most of Reclamation land is open to recreation unless designated as closed to the public.

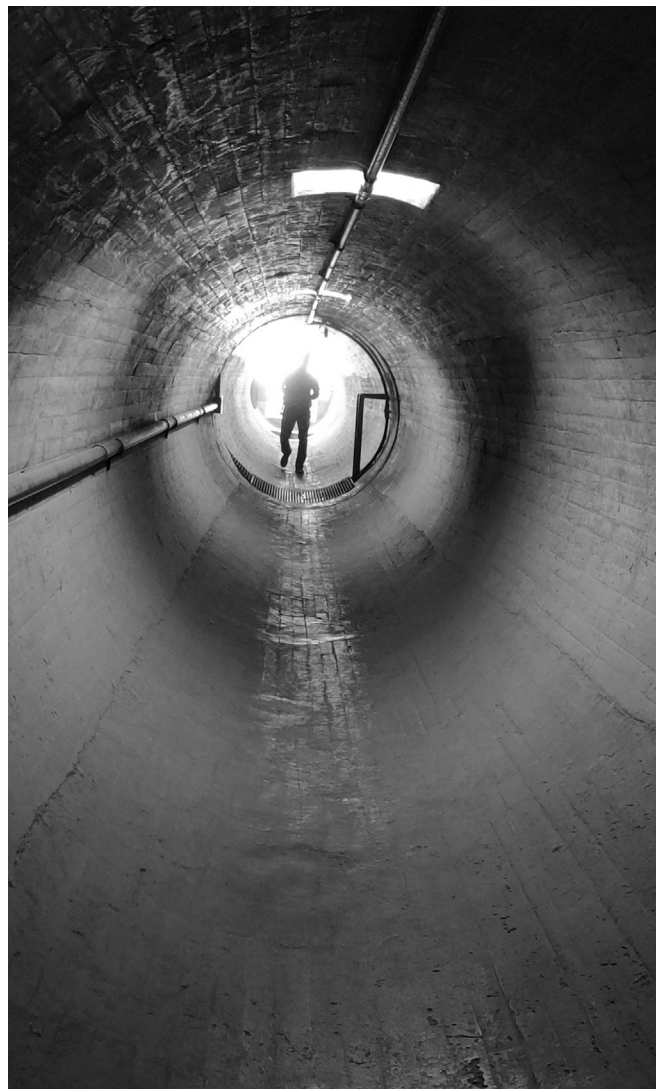
Directly managed recreation still occurs though project-specific authorities and the REA, which grant designated projects or areas the allowance for developed recreation to be managed by Reclamation. Currently, Reclamation has designated three REA areas, with a fourth being proposed and likely designated in mid-2022. One primary difference in a REA site as opposed to most project-specific authority sites is the ability to retain and use fees.



Davis Dam background of Colorado River Heritage Trail System – Greenway Park.

REA fees can be collected for standard and expanded amenities to be re-invested in the recreation site for OM&R and further development. This revenue enables Reclamation to offset costs and potentially utilize 100% of collected fees within the recreation area. Similarly, project-specific authorities allow Reclamation to directly manage and develop recreation areas within certain projects. In large, fees that may be collected for the developed recreation areas under a project-specific authority are used for a multitude of areas within a project, not solely recreation.

In recent years, popularity and interest in outdoor recreation on public lands and waterbodies has increased immensely amongst a growing population. While recreation's health benefits are widely recognized, the positive economic impact created through Reclamation's Recreation Program is important to note, as it generated more than \$5 billion in 2020. With millions of visitors annually, the program attracts local businesses and concession opportunities offering goods, services, and recreation activities, greatly supporting local economies. Through its unique partnerships and collaboration with other Federal agencies, Reclamation is able to offer more than 60 types of recreational opportunities, engage the public, broaden its outreach by striving to meet demand, and work toward diversity, equity, inclusion, and accessibility while providing a safe and enjoyable experience for the American public.



Visitor tours inside Hoover Dam Tunnel that leads to face of Hoover Dam.

Rio Chama Trail Federal Lands Transportation Program Project

Hannah Schechter

Outdoor Recreation Planner, Albuquerque Area Office

The Bureau of Reclamation (Reclamation) recently replaced a 40-year-old bridge connecting the Rio Chama Trail as part of a multi-agency partnership to improve the five-mile trail that connects Heron Lake State Park to El Vado Lake State Park in northern New Mexico. The trail starts with a staircase that drops off a 30-foot cliff that connects to the trail. The trail winds down the steep embankment to the Rio Chama and crosses over the Heron Rio Chama Trail Bridge built by Reclamation and the Youth Conservation Corps (YCC) in the early 1980s. In 2015, New Mexico State Parks and Reclamation closed the staircase and the access to the bridge due to safety concerns with both.

In 2019, the Albuquerque Area Office (AAO) was awarded \$100,000 in Federal Lands Transportation Program (FLTP) funding for fiscal year (FY) 2020 to develop 95 percent designs for a new footbridge, including specifications and drawings. AAO decided to complete the design in-house using AAO's Technical Service Division. The completed design was then used to apply for \$880,000 in FLTP funds for construction in FY 2021. The Rio Chama bridge project was selected, and work continued with finalizing the design and sending it through the procurement process. As prices skyrocketed due to COVID, an additional \$570,000 was needed to award the contract. \$400,000 was offered by the Upper Colorado Basin Region in September 2021, and an additional \$170,000 was used from San Juan-Chama Project Colorado River Storage Project Power Revenues to complete needed road work in the area.

The bridge contract, which included road improvements on the Heron Dam outlet works, was awarded in September 2021. The improvements consisted of four cross-drainage culverts and new gravel surfacing on the road. Construction began in November 2021, and it is roughly at 90% complete.

New Mexico State Parks (NMSP) has an agreement with Rocky Mountain Youth Corps, who will connect the existing trail to the new bridge and naturalize the old trail that will no longer be in use.

The new section will include an additional 0.5 miles of trail just above the high-water mark on the Rio Chama. This will provide additional fishing access to the outstanding fisheries on the Rio Chama, which is designated as New Mexico Green Chili Waters (Special Trout Fishing Waters).



Youth Conservation Corps Bridge constructed in 1980.



New bridge being lifted into place and set on the abutments.

The land status is complex, as it involves Reclamation lands, New Mexico Department of Game and Fish (NMDGF), and leased lands to NMSP. AAO, NMDGF, and NMSP signed a temporary construction memorandum of understanding (MOU) and are currently working on a long-term tri-party operations and maintenance (O&M) MOU. As part of the MOU, the three agencies are developing a kiosk panel that will discuss the history of the area, the original project completed by YCC, and the new project with Rocky Mountain Youth Corps that continues the tradition of youth corps service.

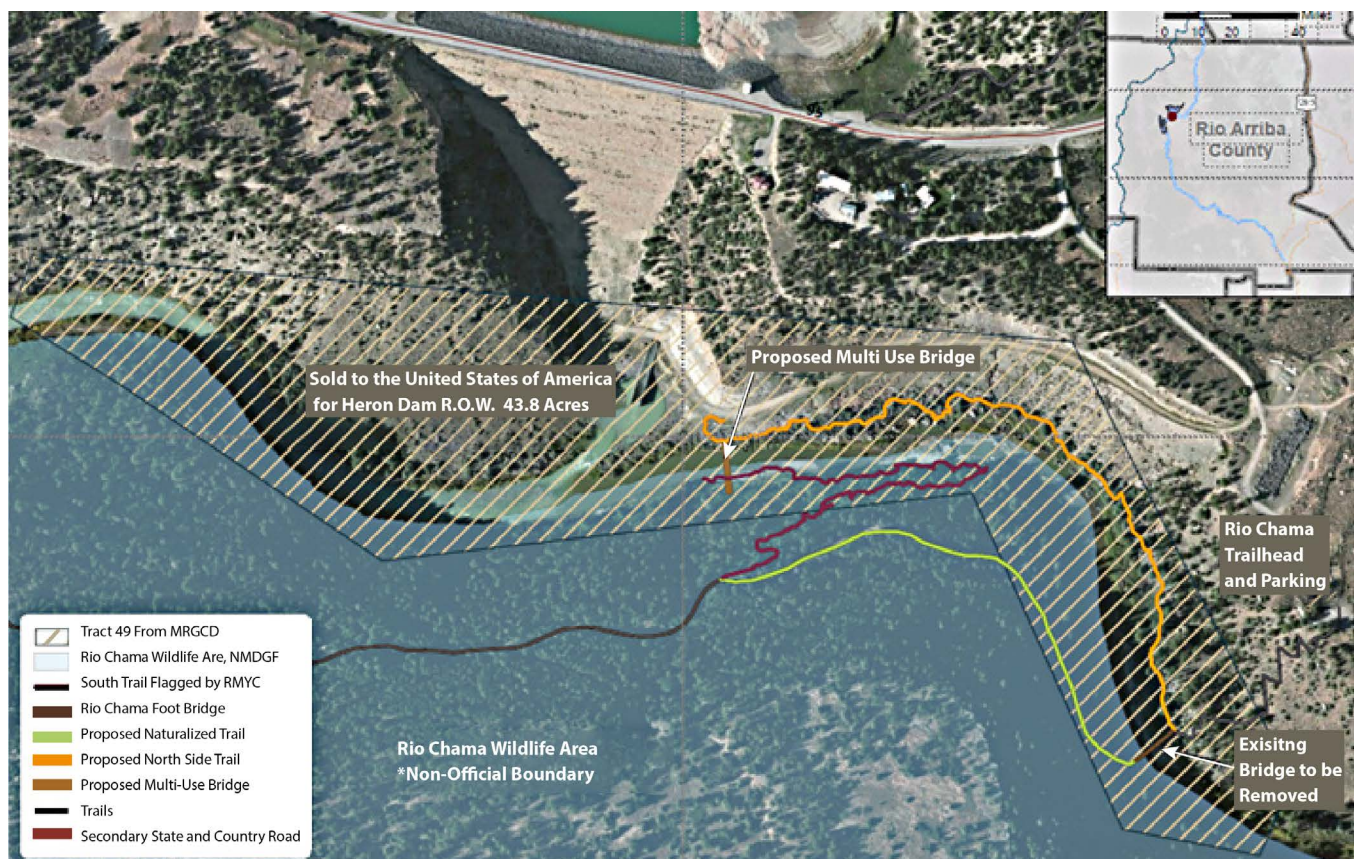
AAO is also working on a construction contract to rebuild the staircase at the start of the Rio Chama Trail. The contract is expected to be awarded in 4th QTR FY 2022 or 1st QTR FY 2023. The 5.5-mile trail will officially open once the trail and staircase are completed. The additional fishing access, stunning views, and connection between two state parks make for an unbelievable asset to Reclamation, New Mexico State Parks, and all who visit.



Complete Rio Chama footbridge.



Outdoor Recreation Interns on Rio Chama Trail.



San Juan-Chama Project, Proposed Trails and Land Ownership (Reclamation).



A Tool to Bridge the Transportation Funding Gap: Reclamation's Long Range Transportation Plan

Alex Belous, P.E.

Acting Structures Operations and Maintenance Program Manager,
Asset Management Division

The Bureau of Reclamation (Reclamation) is best known for its dams, power plants, pipelines, and canals within the 17 Western States. Also of significance are Reclamation's transportation systems, which play a critical role in allowing Reclamation to meet its mission and provide the public with recreation opportunities. To ensure these transportation systems remain safe and reliable for the future, Reclamation, in partnership with the Federal Highway Administration (FHWA), Office of Federal Lands Highway (FLH), developed [Reclamation's first Long Range Transportation Plan \(LRTP\)](#). This article provides a brief overview of Reclamation's transportation system, its first five years in the [Federal Lands Transportation Program \(FLTP\)](#), and the introduction of the LRTP. The article then reviews how the LRTP was developed, its goals, funding challenges, and how the LRTP can be utilized by Reclamation.

Reclamation has a wide variety of transportation facilities included in the National Federal Lands Transportation Facility Inventory. Reclamation's transportation inventories include over 2,800 miles of Reclamation-owned public roads, over 300 Reclamation-owned public vehicle bridges that are

also listed within the National Bridge Inventory, over 1,300 miles of public trails, and 450 boat ramps with associated parking areas.

Reclamation was designated as a Federal Land Management Agency (FLMA) and included in the FLTP as a competing partner in Fiscal Year (FY) 2016 with the passage of the Fixing America's Surface Transportation (FAST) Act. This made Reclamation eligible to compete for certain U.S. Department of Transportation grants. Before the FAST Act, Reclamation received only a small amount of Federal transportation funding for bridge inspections.

During its first five years in the FLTP, Reclamation developed [Directive and Standard, Transportation Program \(FAC 07-01\)](#), began a Road Inventory Program (RIP) to capture public Roads and Parking Lots Conditions, started analyses of roadways that needed safety improvements, funded 35 transportation projects, and deployed a Reclamation-wide needs assessment to begin tracking current and future transportation needs. In 2018, Reclamation also launched a new Reclamation Bridge Inventory application that

facilitates its management of over 7,000 public and non-public bridge structures including Reclamation-owned bridges and non-Reclamation-owned bridges over Reclamation facilities.

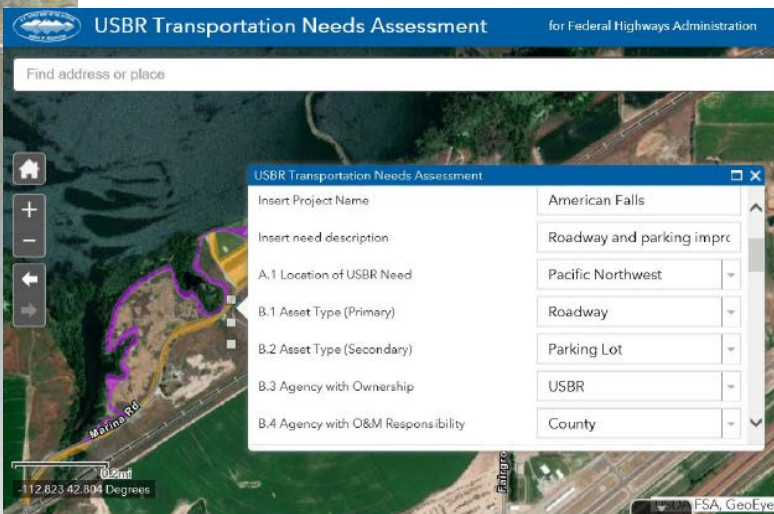
In May 2021, Reclamation, in partnership with FLH, completed Reclamation's first LRTP. Development of the LRTP began in FY 2017 and included a 2018-2019 Reclamation Transportation Needs Assessment that was led by each regional transportation coordinator (RTC). The RTCs and others across Reclamation contributed to the development of the LRTP through numerous workshops and meetings.

Reclamation's LRTP is consistent with planning processes required for State Departments of Transportation and Metropolitan Planning Organizations, and it sets the vision for Reclamation's transportation program over the next 20 years while also setting actionable objectives for a shorter 10-year window. The LRTP identifies four goal areas for Reclamation's transportation program, which are directly tied to goals of the FLTP and Reclamation-specific focus areas. These goals are:

1. System Preservation
2. Safety
3. Economic Generation
4. Partnerships

Reclamation's transportation funding need is estimated to be about \$1.2B over 20 years. This figure is based on information provided through the 2018-2019 Transportation Needs Assessment, partially available data from the RIP, information on bridge safety and deficiency, an estimate of trail maintenance needs, non-capital planning and programmatic needs, and large project needs identified through transportation bill reauthorization research.

The table below shows the estimated funding outlook, need, and gap over the next 20 years. The funding outlook includes anticipated FLTP funding awarded to Reclamation, [Federal Lands Access Program \(FLAP\)](#) funding awarded to Reclamation's non-Federal managing partners, and Reclamation funding. Based on this outlook, the anticipated funding gap is estimated between \$703.5M and \$1.014B over 20 years.



A snapshot of the ArcGIS tool used by regions to enter and describe their transportation needs as part of the 2018-2019 Reclamation Transportation Needs Assessment.

Funding Source	Funding Outlook			Funding Need and Gap	
	Base Funding	Base Funding with Leveraging	Increase in Base Funding & Leveraging	Estimated Need	Leveraging Target (Gap)
FLTP	\$202M	\$202M	\$248M	\$1.2B	\$703.5M-\$1.014B
FLAP	-	\$134.5M	\$165.5M		
Reclamation	-	\$81M	\$99M		
Total	\$202M	\$417.5M	\$512.5M		

Reclamation's estimated funding outlook, need, and gap over the next 20 years (Source: LRTP, May 2021).

Reclamation's ability to leverage additional transportation funds will determine how much of this gap can be addressed.

The LRTP highlights the need for partnerships to help close this gap and serves as a tool for Reclamation to conduct outreach with existing and potential partners on transportation needs and projects of mutual priority. Reclamation has a directive from Congress to coordinate recreation use at its water projects with existing or planned Federal, state, and local public recreation projects. Where possible, this also means Reclamation seeks qualified government entities to manage recreation use at water projects. About two-thirds of Reclamation's road inventory is maintained by other entities; typically, these entities are non-Federal. This unique partnership means Reclamation and its managing partners are often able to compete for or leverage a variety of transportation funds available to both Federal and non-Federal entities.

Individual FLTP and FLAP projects have provided significant benefits by augmenting Reclamation's funding; however, more must be done to close the funding gap. As examples, Reclamation offices are encouraged to work with their non-Federal partners to identify projects where FLAP and FLTP funding can be combined and with other FLMAs on projects to leverage each other's FLTP funding. The LRTP also highlights other potential funding opportunities that could be used by Reclamation and/or its partners. The LRTP, in conjunction with the RIP Roads and Parking Lots Conditions, can also be used to prioritize work and find projects of mutual interest.

A FLTP-FLAP partnership example is the Sun River Bridge Replacement Project in Montana, which aims to replace a 250-foot long, structurally deficient bridge and realign a portion of the road for safer operations and maintenance (O&M) and public access to Bureau of Land Management and U.S.



Sun River Bridge (Reclamation/Jeff Ticknor).

Forest Service lands. The estimated project cost is \$11M. Reclamation's non-Federal partner Greenfields Irrigation District was awarded \$9.23M in FLAP funding and Reclamation was awarded \$1.77M in FLTP funding. Construction is anticipated in FY 2025.

A project where Reclamation and its partners are exploring various funding opportunities is on Reclamation's Pit River Bridge, which is 3,588 feet long and carries both Interstate 5 and the Union Pacific Railroad (UPRR) over Shasta Lake in California. The bridge requires rehabilitation or replacement to bring it up to Interstate standards. Rehabilitation comes with significant logistical challenges, and replacement is estimated to take 15-20 years, require an estimated \$50M for planning and National Environmental Policy Act compliance, and cost an estimated \$2-4B to build. Reclamation and its partners, the U.S. Forest Service, FLH, Volpe, Caltrans, and UPRR, are currently reviewing funding other opportunities within the new Bipartisan Infrastructure Law and are committed to working toward a solution.



Existing Pit River Bridge (left) and rendering of potential replacement option (right) (Source: Caltrans).

Reclamation's Asset Management Division thanks each region, area, and field office for their support in completing Reclamation's first LRTP. This LRTP will assist Reclamation and its managing partners as they work together to bridge the transportation funding gap and ensure the safety and reliability of Reclamation's transportation systems, which play a critical role in fulfilling Reclamation's mission and providing the public with recreation opportunities.



The Lower Yellowstone Project Intake Headworks has been in operation since 2012. Note: 2 of the 12 drum screens are positioned out of the water and were not in use at the time the photo was taken.

Lower Yellowstone Project Weir and Fish Bypass

Dale Lentz, P.E.

Civil Engineer, Hydrology and Water Operations Group, Missouri Basin Region

The Lower Yellowstone Project (LYP) was authorized by the Secretary of the Interior on May 10, 1904, for irrigation purposes. Construction of the LYP began in 1905 and included the Intake Diversion Dam – a rock-filled timber crib weir that spans the Yellowstone River and a headworks structure to divert water into the Main Canal for irrigation. The LYP was authorized to provide a dependable water supply sufficient to irrigate approximately 58,000 acres of land on the west bank of the Yellowstone River.

The U.S. Fish and Wildlife Service (Service) listed the pallid sturgeon as endangered under the Endangered Species Act of 1973 (16 U.S.C. 1531-1544) (ESA) in 1990. Starting in the early 1990s, the Bureau of Reclamation (Reclamation) initiated studies to assess the pallid sturgeon and evaluate methods to reduce entrainment and improve fish passage at the Intake Diversion Dam. In 2007, the U.S. Army Corps of Engineers received specific authority to “assist Reclamation with the design and construction of the Intake Project.”

To reduce entrainment into the Lower Yellowstone Main Canal, a new headworks structure was designed, constructed, and completed in 2012. It controls diversions of water into the canal and includes 12 removable rotating drum screens located in the river to minimize entrainment of fish greater than 40 mm long. The screened headworks measures 310 feet wide and allows the drum screens to be raised out of the river when not in use. This prevents the screens from being damaged by floating debris in the river such as cottonwoods and ice.

Numerous studies suggest that the Intake Diversion Dam impedes upstream migration of pallid sturgeon, limiting their access to potentially suitable spawning habitats and longer distances for larval drift. By improving passage at the Intake Diversion Dam, approximately 165 river miles of habitat would become accessible in the Yellowstone River and major tributaries such as the Powder River.

In 2019, Reclamation and the U.S. Army Corps of Engineers began construction on the Lower Yellowstone Fish Passage Project (Project). The Project consisted of an 11,150-ft long bypass channel for fish passage and a replacement weir for water diversions to the LYP. The purpose of the Project is to improve passage of pallid sturgeon and other native fish at the LYP Intake Diversion Dam while continuing a viable and effective operation of the LYP. The Project is expected to be completed in the summer of 2022.

The replacement concrete weir was built just upstream from the existing Intake Diversion Dam at an elevation of 1991 feet (approximately the same elevation of the existing dam). It will provide sufficient water surface elevation to maintain irrigation diversions through the new headworks and screens. The concrete weir eliminates the need for annual placement of rock, which was required on the original structure. The new weir provides greater reliability for continued diversions of 1,374 cubic feet per second (cfs) into the Main Canal at Yellowstone River even when flows are as low as 3,000 cfs. It is built with a 125-foot wide by two-foot deep “notch” that provides a smoother transition through the area for downstream migrating adult pallid sturgeon and downstream drifting free embryos and larvae.

The pallid sturgeon is a bottom dwelling species that typically avoids areas of high velocity and turbulence. For these reasons, a typical salmonid fish ladder would not provide for suitable passage around or over the diversion weir.

The bypass channel is approximately 11,150 feet in length at a slope of approximately 0.0007 ft/ft (natural Yellowstone River slope is approximately 0.0004 to 0.0007). The channel cross-section has a bottom width of 40 feet, a top width of 150-250 feet, and side slopes varying from 1V:12H to 1V:3H. This low-velocity, natural design eliminates areas of turbulence and mimics natural conditions believed to be favorable to pallid sturgeon.



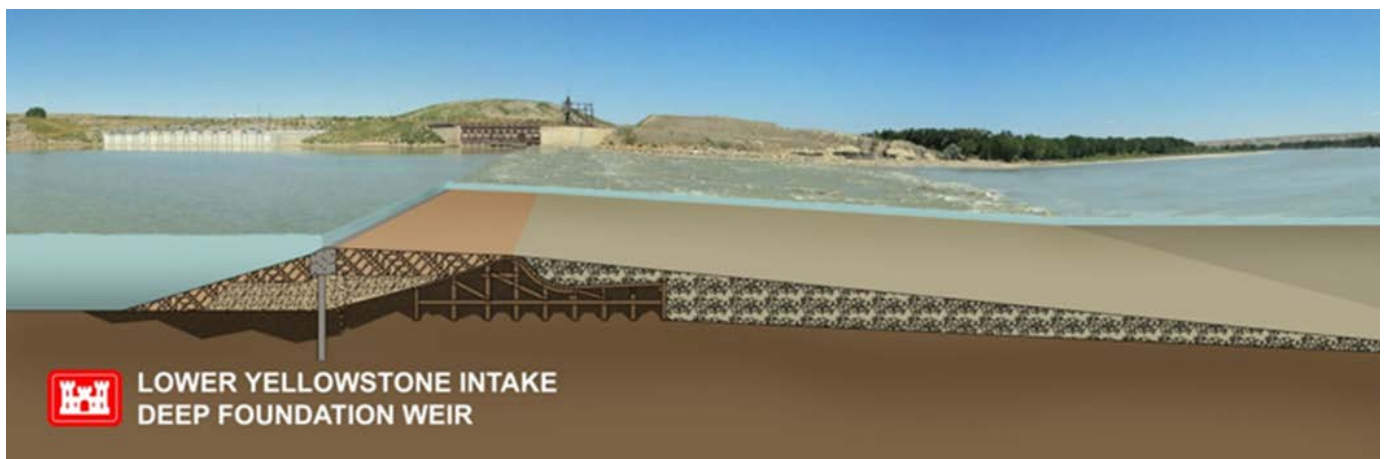
Pallid sturgeon.



Aerial view of the Lower Yellowstone Project showing the fish bypass, diversion weir, and headworks.

The bypass channel is an uncontrolled structure that will carry 13-18 percent of river flows and will provide for year-round fish passage. During times when pallid sturgeon are migrating in the river, the bypass channel will have velocities ranging from 2.4 to 6 feet-per-second and depths greater than 6 feet.

Grade control structures are included at the downstream and upstream ends of the bypass channel as well as at two intermediate locations to prevent channel bed erosion that could impact passage success. The proposed grade control structures are composed of buried riprap covered with cobble. The bypass is designed to be a stable “natural like” fish passage channel that simulates naturally occurring side channels on the Yellowstone River. Parts of the channel are lined with riprap to prevent major erosion and channel migration, while other parts of the channel are comprised of native soils and will likely experience some erosion, deposition, and plant growth. Within the bypass there are shallow plain areas and deeper pools to provide a variety of fish habitats.



Cross-section of replacement weir, existing weir, and existing rock field.

The excavation of the bypass channel removed approximately 981,600 cubic yards of earthen material. The weir has a deep pile foundation and is comprised of 2,531 cubic yards of concrete. The Project also used 115,790 tons of rip rap around the weir and bends of the bypass and 41,696 tons of cobble on the bottom of the bypass channel.

An extensive Adaptive Management and Monitoring Plan (AMMP) was prepared by Reclamation. This AMMP provides a structured framework for decision-making that will be used to adjust Project features and operations if monitoring results indicate the Lower Yellowstone Fish Passage Project is not meeting performance objectives as contemplated in the 2016 Environmental Impact Statement and 2020 Biological Opinion. This plan includes monitoring physical criteria such as bypass flow split, depth, and velocity.

Also, fish movements will be monitored by both manual tracking via boats and by land-based telemetry stations located along the Yellowstone River and within the bypass.

Operations and maintenance activities associated with the bypass channel will primarily include maintaining the bypass channel to original design specifications, consistent with the AMMP. Additional operations and maintenance requirements might include maintenance of bypass access roads on Joe's Island, periodic maintenance of rock upstream and downstream of the replacement weir, periodic replacement of riprap along the banks and bottom of the bypass channel, and periodic removal of sediment or debris from within the bypass channel.



Looking upstream at the Lower Yellowstone Project fish bypass entrance, diversion weir, new headworks, and old headworks (unused, far right).

Q&A

Thomas Michalewicz, P.E.

Civil Engineer, Oklahoma-Texas Area Office

Thomas Michalewicz is retiring from the Bureau of Reclamation's (Reclamation) Oklahoma-Texas Area Office (OTAO) at the end of September 2022. Here he talks about the importance of communicating with transferred works partners, projects he has helped coordinate, and enjoying the hands-on approach and variety of work within the area office.

Can you provide a high-level summary of your work before joining Reclamation?

Out of college, I worked for seven years for a civil engineering consulting firm where I received my P.E. I then had an opportunity to go to work for USDA-NRCS (Natural Resources Conservation Service). It was a position in their design group at the Texas State Office designing floodwater retarding structures. I did that for nine years and was looking for a change and applied to the Bureau of Reclamation.

What made you want to work for Reclamation?

I knew of Reclamation because of Twin Buttes Dam in the San Angelo Project. Reclamation did a safety of dams fix in the late-90s, a grout curtain in front of the dam. I saw it when I was with NRCS, and I was fascinated about doing things other than just design. I applied for the job and started in 2001. I started off as the O&M engineer in Oklahoma City. Going out and doing inspection work, traveling, and getting with the partners. Learning the projects was exciting.



Twin Buttes Inspection (San Angelo Project).



Lake Meredith Inspection (Canadian River Project).

What are notable roles you've held since joining Reclamation?

I was an O&M engineer for the first several years. I had an opportunity to move back to Texas and become a Special Projects Coordinator, which is more on the planning side. The Rio Grande Valley Improvement Project was recently passed. This was a program for water conservation for irrigation districts in south Texas. I also picked up the Native American Technical Assistance Program. The opportunity is always there for doing a variety of work.

Who have been your mentors? What have you learned from them?

Fred Landefeld comes to mind. Fred, who retired a while back, headed up our lands program in Oklahoma for the area office. We are all transferred works, and it's people skills you need. Fred set the tone of working with our transferred works partners. Once I started talking to Fred about an idea, and he started arguing with me that that wasn't the correct way to do it. He finally convinced me of the way he started out wanting to do it. Then he went back on my side and started arguing what I had originally done. He made you think through all the issues. Fred stood out.

How would you describe your current role and responsibilities?

I've managed the OTAO Native American Affairs program for almost 15 years. I serve as a Grants Officer Technical Representative on numerous grants. OTAO has seven projects in Oklahoma, one in Kansas, three in Texas, but two of them are closer to the Austin office. I take the lead for most all things including the O&M and inspections at Choke Canyon and Twin Buttes. Choke Canyon

Reservoir, which is the Nueces River, is undergoing a \$3.5 million upgrade to the electrical and mechanical control system. It was constructed in the late-70s/early-80s and managed by the city of Corpus Christi. I have been assigned to coordinate this construction. We're a third party to the construction, but we have to make sure that Reclamation's needs are met in the upgrades. I have to interject myself into the design plans and submittals, and I route within our office but also through the Technical Service Center for review. I also get involved in lands issues, trespass issues. I assist our office on two ongoing basin studies and several internal applied science projects.

What are the biggest challenges the Oklahoma-Texas Area Office faces?

We are all transferred works, and the projects have to see your face often and hear from you to remember you're paying attention. We have the same issues as reserved works; they can just be more difficult to work out. It takes good communication and trust to get things done. I'm involved with the WaterSMART program, which has created quite a workload. We spend a lot of



Michalewicz's wife, dog, and 1965 Mustang at a car show.

time with calls from constituents explaining our programs, especially this year with BIL funding. We're managing about 80 WaterSMART grants out of the Austin office, which is collateral duty for everybody.

Hiring and retaining good people. It also takes a while to hire somebody, and there are even a couple of positions that we hadn't filled because of budget concerns. BIL has flipped the switch. All of a sudden, there is funding. Larry Walkowiak, who ended up being Regional Director in Salt Lake, was our Area Manager. He said that you only borrow good people for a while.

Can you share a success story about a project you've been involved with?

We have 14,000 acres of land surrounding Twin Buttes Reservoir, and it is outside the city limits, so the city had no jurisdiction to patrol it. There were all kinds of illegal activity going on. I received a call from a game warden. He wanted to see about putting the lands in the Texas Parks and Wildlife Public Hunt Program. If we did that, they would have jurisdiction; they could write and enforce the rules. They could allow hunting in season. And the city of San Angelo, the operating partner, was more than willing. We received protests because there was unauthorized off-roading there. We did open it to several limited uses. This also gives Texas Parks and Wildlife the opportunity to cite people because you need a permit to be on the property and a Texas off-road permit to off-road.

We've made a lot of improvements on the property. Not everybody likes it because it's not the Wild West anymore. I grew up in San Angelo. I was one of those that thought it was the Wild West, but there's no place for it now. Texas Parks and Wildlife are planning to conduct prescribed burns and improve wildlife habitat. In places the brush is grown up, they're clearing to let wildlife move through.

What advice can you share for those starting careers in Reclamation?

I truly believe in the mission that we're working on. It's more important today than it ever has been. Sometimes I hate to get out of it because there's a lot going on. As for advice, whatever job you start, make it your own, figure out what you like to do,

and do it. If you want to get out on the ground and see improvements, working at the area office is great. You don't have to be limited. There are always opportunities to take on new and challenging roles. We're public servants. We accomplish a lot of good.

What are you looking forward to with your retirement?

I enjoy my job, but it does get in the way of doing things I really love. We have some property on the river that I go to – fishing and swimming. I like to hunt. Want to travel. It's all the things you never can spend enough time doing. We're going to build a new house and move a little further out in the country. Hope to enjoy life. Traveling, fishing, hunting, and whatever I feel like doing when I get up in the morning. Not have any set plans or responsibilities.



Michalewicz and his dog at their Llano River property.

Updates & Due Dates

Bureau of Reclamation Celebrates 120 Years of Infrastructure

Reclamation is celebrating 120 years of infrastructure! Through a combination of live events and newly developed online resources, Reclamation will honor its history of providing secure, reliable water supplies for irrigation, people, and the environment; efficiently generating energy to meet economic needs; ensuring outdoor recreation opportunities; and fulfilling commitments to Tribal nations in the 17 Western States since 1902.



Reclamation infrastructure sites as of January 1, 2022.

What We're Working On

Reclamation has major construction activities underway in support of its fundamental mission and programs to modernize and maintain infrastructure, serve underserved populations, and stay as nimble as possible in response to the requirements of drought and a changing climate. As of May 2022, Reclamation has approximately 485 Assets Under Construction (AUC) at an estimated total investment of \$12.2 billion. AUCs include both new construction and assets undergoing rehabilitation or replacement.

Planning for Aging Infrastructure

Reclamation and its operating partners work together to identify, categorize, and record major rehabilitation and replacement (MR&R) needs at Reclamation facilities. MR&R includes any extraordinary maintenance (XM), safety of dams modifications, and deferred maintenance that contribute to the continued, safe, and reliable delivery of authorized project benefits. Reclamation has identified approximately 2,800 activities with estimates totaling \$11.9 billion over the next 30 years (FY 2021 to 2050).

Investing in the Future

President Biden signed the Bipartisan Infrastructure Law (BIL) on November 15, 2021. This landmark investment will rebuild America's critical infrastructure, tackle the climate crisis, advance environmental justice, and drive the creation of good-paying union jobs. BIL will invest \$3.2 billion to address aging infrastructure in FY 2022-2026.



Hoover Dam birthday celebration (Reclamation).