

Water Operation and Maintenance Bulletin



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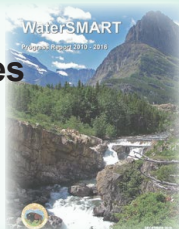
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Message from Office of Policy

Reclamation's Water O&M bulletins are a time-honored vehicle for Reclamation to share news and insights within Reclamation and with our water and irrigation district partners, and we are glad to have you joining us.

This issue of the Water O&M Bulletin focuses on funding and partnership opportunities. This is a great time of year for Reclamation and our water and irrigation district partners to consider strategies for developing and improving short and long term O&M budgets.

A good O&M budget should pursue sound objectives to safely and reliably develop, manage, and deliver water. Please consider:

- Short term objectives, including day-to-day O&M and minor, routine maintenance that occurs on an annual, or more frequent, basis.
- Long term objectives, including non-routine maintenance, such as major rehabilitation or replacement projects, and development and maintenance of a reserve fund for emergencies and unanticipated expenses.

Developing a robust asset management plan will help with long term budgeting. Determine the life expectancy of each asset and the cost of replacing or rehabilitating each asset, and then develop a long-term plan for either rehabilitating or replacing all of the assets within your project. The asset management plan can support a long term budget, which can be used to make budgets more predictable by incorporating risk and benefits into the decision of when to replace or rehabilitate certain assets. For example, if your dam has 10 radial gates, rather than tackling all 10 gates

at once, plan on refurbishing one per year so that each gate can be maintained on a 10-year schedule.



you will pay for these emergency repairs when they occur. Remember Murphy's law— *anything that can go wrong will go wrong* (and when you are least expecting it).

We would love to hear from you: What are your budgeting tips? Your success stories? What can we do together?

Chris Vick,
Water O&M Manager



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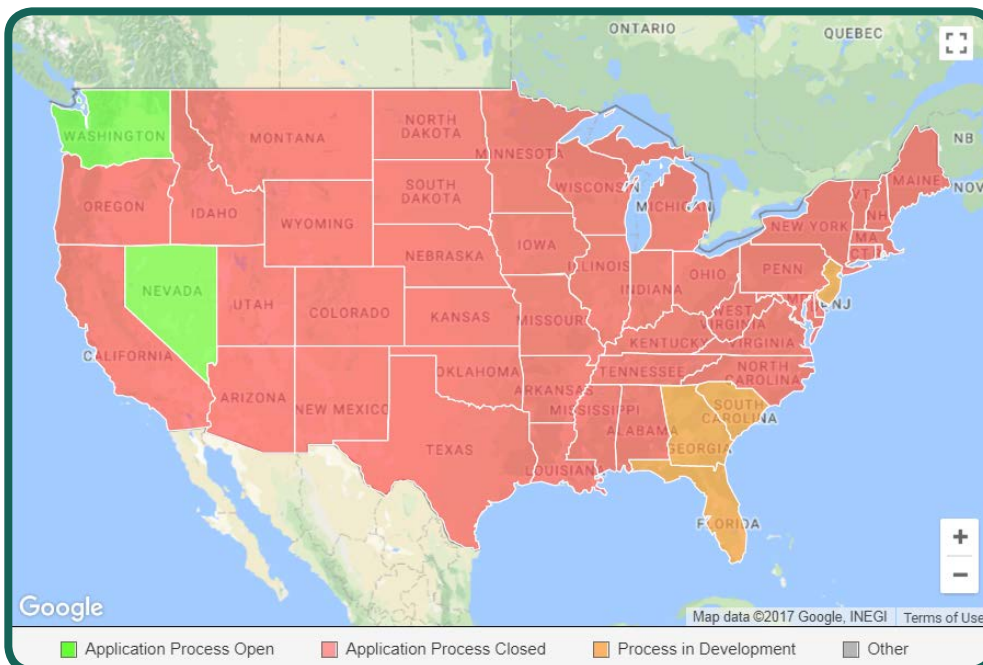
Federal Highway Administration Funding Opportunities

Transportation and the Federal Highway Administration (FHWA) are probably not the first things you think of when prioritizing what to replace and repair on a canal system. However, canal bridges, O&M roads, and even pipelines all interact with the nation's public roads and transit systems. The FHWA has three programs authorized under the Fixing America's Surface Transportation (FAST) Act that Reclamation and your district can use to apply for funding transportation related projects.

- **Federal Lands Access Program (FLAP)** works with States to provide matching grants to improve transportation facilities that non-Federal entities own or maintain.
- **Emergency Relief for Federally Owned Roads (ERFO)** funds repairs to Reclamation-owned public roads and other transportation related assets that suffered damage from a natural disaster or a catastrophic failure. Reclamation-owned, transportation-related assets are eligible for ERFO funding. Contact Reclamation's Policy and Administration Office within 45 days of the event to report damage.
- **Federal Lands Transportation Program (FLTP)** allows Reclamation to compete with other Federal agencies for funding transportation projects, including road, bridge, parking lot, trail and boat ramp construction and repair. Contact your local Reclamation office to discuss your needs.

Federal Lands Access Program

Under FLAP, transportation facilities must provide access to, be adjacent to, or be located within Federal lands and provide access for economic generation or recreation (e.g., an access road to a river or multi-use canal trail or road). The FAST Act authorized \$250 million in FLAP funding in 2016, gradually escalating to \$270 million in 2020. These funds supplement State and local resources for public roads, transit systems, and other transportation facilities. Reclamation's non-Federal operating partners can apply to their respective State to request matching funds from FLAP for projects.



What Projects Get Selected?

This program emphasizes high-use Federal recreation sites and Federal economic generators, so projects should either show how recreation opportunities are increased or how the project impacts the local economy. Applications should be well developed, with a reasonable scope and cost for projects that meet the program goals.

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FLAP State Status map on the FLAP website.

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Typical projects selected include:

- Roadway realignment & reconstruction to improve safety, provide additional capacity, meet minimum standards, provide bike and/or pedestrian facilities, etc.
- Road surface replacement (e.g., pulverize and overlay)
- Bridge replacement
- Multi-use paved trails
- Road safety improvements such as signage, striping, guardrail replacement, sight distance improvements, etc.

How should I work with Reclamation?

Call your local Reclamation Office about possible projects in your district. Together, we can identify common needs. The FLAP program is a great way to partner with Reclamation, FHWA, and your state highway administration. We can strategize on funding the match requirement (each state requires 5 to 20 percent in matching funds), provide contacts, and help develop a plan for completing your FLAP application.

When to Apply

Each State holds a Call for Projects about every three years, and non-Federal entities that own or maintain transportation assets in or around Federal land can submit applications. Calls for projects are usually open for three months. If your state's Call for Projects is approaching, talk to your local Reclamation office about potential projects before your State's deadline.

Go onto the FLAP website to find contacts and more information on the program.

<https://flh.fhwa.dot.gov/programs/flap>

Contact:

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O&M Structures Program Manager,
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List of States and their respective deadlines for submitting project proposals.

State	Next call for projects	Upcoming Deadlines
Arizona	February 2020	
California	2020	
Colorado	September 2020	
Idaho	December 2018	
Kansas	July 2018	
Montana	December 2017	February 2018
North Dakota	2020	
Nebraska	August 2018	
New Mexico	September 2020	
Nevada	September 2017	December 8, 2017
Oklahoma	February 2019	
Oregon	December 2017	February 2018
South Dakota	February 2018	May 2018
Texas	March 2019	
Utah	January 2020	
Washington	November 2017	January 2018
Wyoming	2020	

Paving the Way for Recreation: Lake Pueblo State Park

One of the first FLAP projects for Reclamation was at Lake Pueblo State Park (Park) in the Great Plains Region's Eastern Colorado Area Office (ECAO). Reclamation has contracted with the Colorado Parks and Wildlife (CPW) for management of recreation, fish, and wildlife and associated resources at the Park, which makes CPW eligible for FLAP funding at the Park.



Juniper road, right on top of the north side of Pueblo Dam overlooking the N-1 cove.

Roads and trails in the Park were over thirty years old and desperate for repair; the old asphalt trails were cracked so badly they were hardly usable. The Park needed 4.5 miles of roads to be resurfaced and 13 miles of trails replaced, but CPW did not have funding to finish such a large project. CPW used Great Outdoor Colorado funding for the match to the FLAP grant to completely replace and widen 4.5 miles of road replace 13 miles of 8-foot wide concrete trails. The project also included two new pedestrian bridges. The bike trail now connects the Park from the north entrance to the south entrance, leading through Rock Canyon and tying into the existing bike trail system which goes to downtown Pueblo, Colorado.



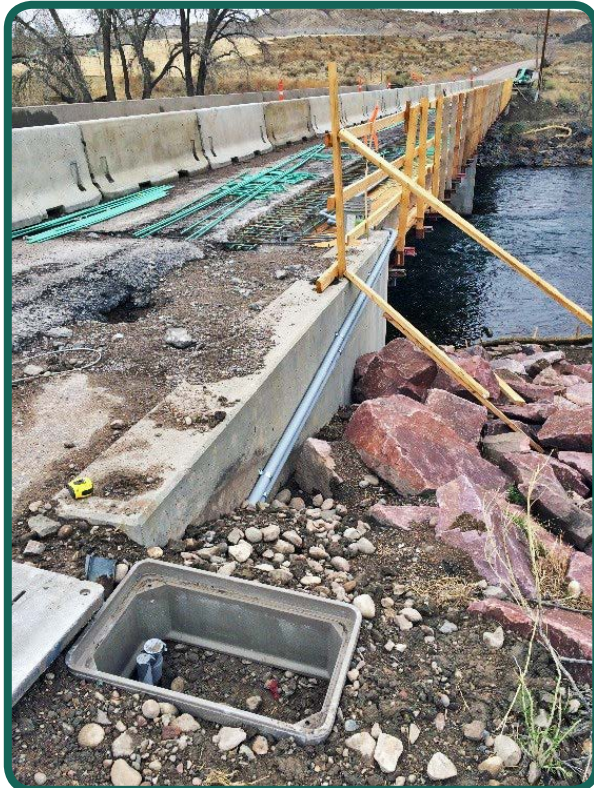
ECAO wrote a letter of support for this \$16 million project and probated coordination to ensure the constructed facilities followed Federal laws and regulations.

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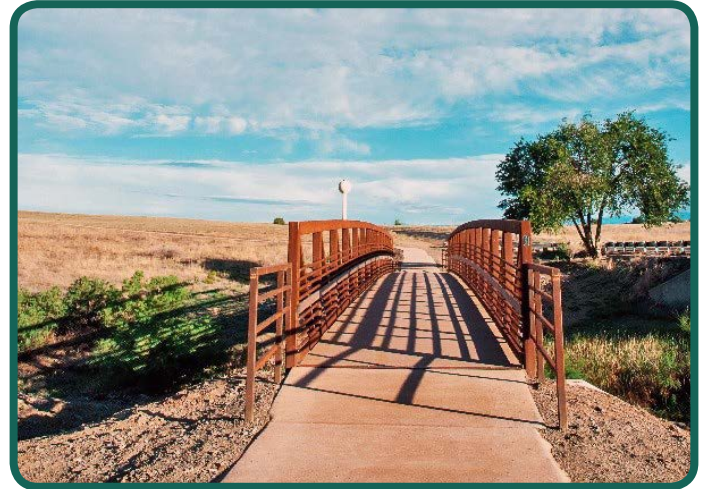
New Rock Canyon pedestrian bridge over the Arkansas River, which is incorporated into the new bike trail (under construction and finished).

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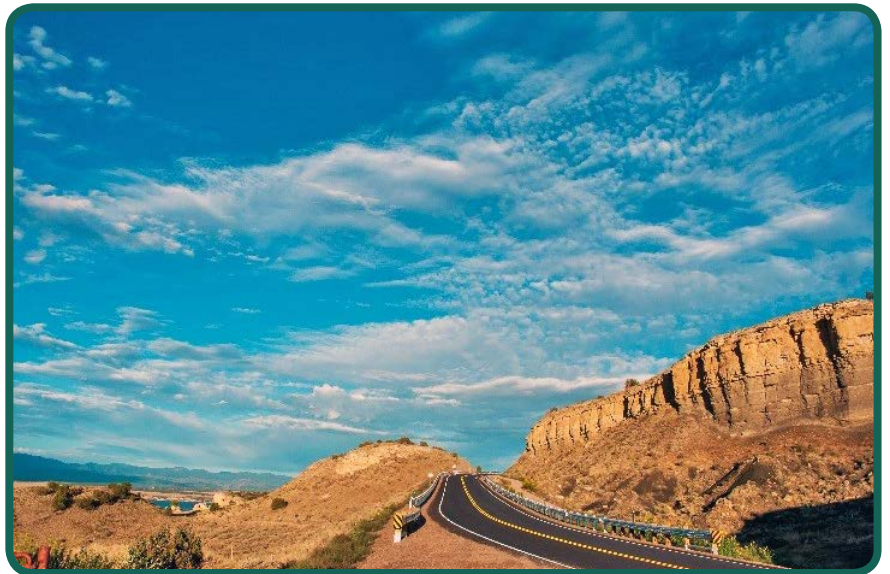
The project was important to the Park, according to Park Manager, Monique Mullis: “The poor state of the roads and trails in Lake Pueblo was a major complaint for visitors and a major concern for staff for years. This grant was the only way we could have ever funded such a large project. The trails in particular are a big bonus. Roads are always the priority with limited funding, so I don’t know how we would have ever rebuilt 13 miles of trails. The visitors just love it!”



Widening of the Juniper Road Bridge over the Arkansas River directly below Pueblo Dam.



New pedestrian bridge on the north side of Pueblo Reservoir over Golf Course Wash drainage between Juniper Campground and the North Gate.



New construction on Juniper Road on the north side of Pueblo Reservoir, past the Sailboard Recreation Area, called Fagan’s Gap.



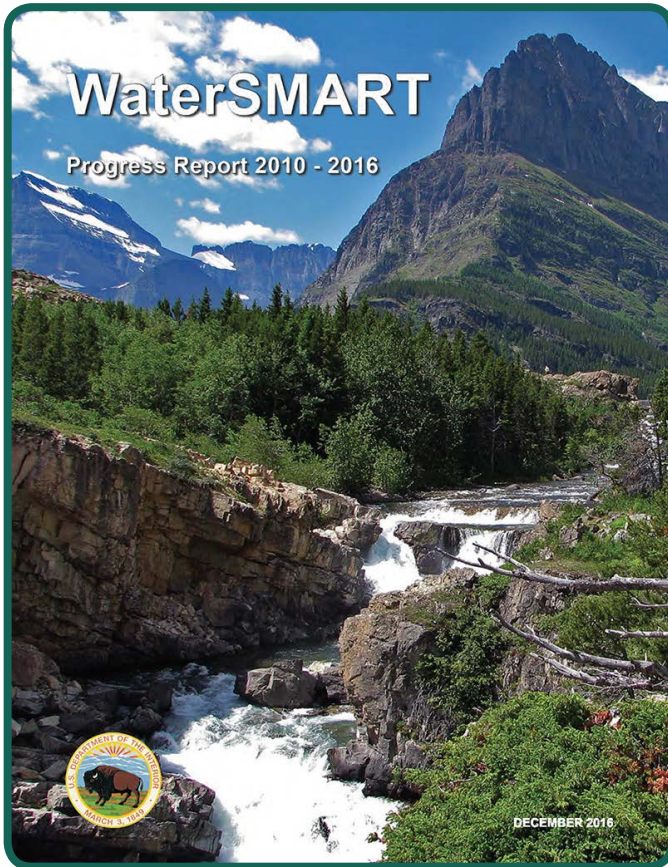
New bike trail by the Visitor Center.

Contact:

Tara Piper
Natural Resource Specialist
Eastern Colorado Area Office
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tpiper@usbr.gov

Funding Opportunity Announcements

Reclamation has several new funding opportunities. Details are available at www.grants.gov by searching on the title or the Funding Opportunity Announcement (FOA) number.



Water and Energy Efficiency Grants

(FOA BOR-DO-18-F006). Request up to \$1,000,000 for larger scale projects that result in quantifiable and sustained water savings and address a significant water management concern. Projects include canal lining and piping, more comprehensive installation of irrigation flow measurement or canal automation improvements, and installation of water meters. Deadline: TBD

Water Marketing Strategy Grants

(FOA BOR-DO-18-F010). Request up to \$400,000 to develop a “water marketing strategy” (i.e., a plan or framework for water marketing) to establish or expand water markets or water marketing in order to address water supply shortages and increase water management flexibility in the longer term. Funding may be used for planning activities, including outreach and partnership building, analysis (e.g., hydrologic, economic, legal and other types of analysis), and the development of a “water marketing strategy” (see the FOA for a complete description of eligible activities), but may not be used to implement water marketing activities. Applicants may request up to \$400,000 for a more advanced water marketing strategy that will require up to three years to complete because the water marketing activities being evaluated are more complex or closer to implementation and, therefore, require the development of a more detailed strategy. In the alternative, applicants may request up to \$200,000 for a Water Marketing Strategy that can be completed within two years from the date of award because they are relatively less complex or more preliminary in nature. Deadline: TBD

Small-Scale Water Efficiency Projects (FOA BOR-DO-18-F009).

Request up to \$75,000 for small-scale water efficiency improvements, such as installing flow measurements or automation in a specific part of a water delivery system, lining a section of a canal to address seepage, small rebate programs that result in reduced residential water use, or other similar projects that are limited in scope. Deadline: TBD

Drought Contingency Planning (FOA BOR-DO-18-F007). Request up to \$200,000 to develop a new drought plan or to update an existing drought plan. Deadline: February 7, 2018, by 4 p.m. MST.

Contact:

Darion Mayhorn
Reclamation Drought Coordinator
303-445-3121
dmayhorn@usbr.gov

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Drought Resiliency Projects (FOA BOR-DO-18-F008). Request up to \$750,000 for projects that will increase the reliability of water supply; improve water management; implement systems to facilitate the voluntary sale, transfer, or exchange of water; and provide benefits for fish, wildlife, and the environment to mitigate impacts caused by drought. These projects have helped many irrigation districts. Deadline: February 13, 2018, by 4 p.m. MST.

Cooperative Watershed Management Program Phase I (FOA BOR-DO-18-F005). Request up to \$100,000 for the development of a watershed group and watershed restoration planning activities. Deadline: January 31, 2018, by 4 p.m. MST.

Successful Drought Resiliency Project: Waurika Lake Master Conservancy District

The Waurika Lake Master Conservancy District in southwestern Oklahoma provides water to six cities and 250,000 people in an area that had been in drought for five years prior to 2015. In 2016, the district successfully used Reclamation's Drought Resiliency Project to install an extension intake pipe to the lowest point in Waurika Lake and add a floating intake to access water at more points, including the lake's lowest elevations. The lower intake enabled the district to access an

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Dredging 900 feet from the Lake intake to clean out the silted-in intake channel to be able lay 42-inch HDPE pipe along a 4,000-foot channel into the lake for the floating intake.

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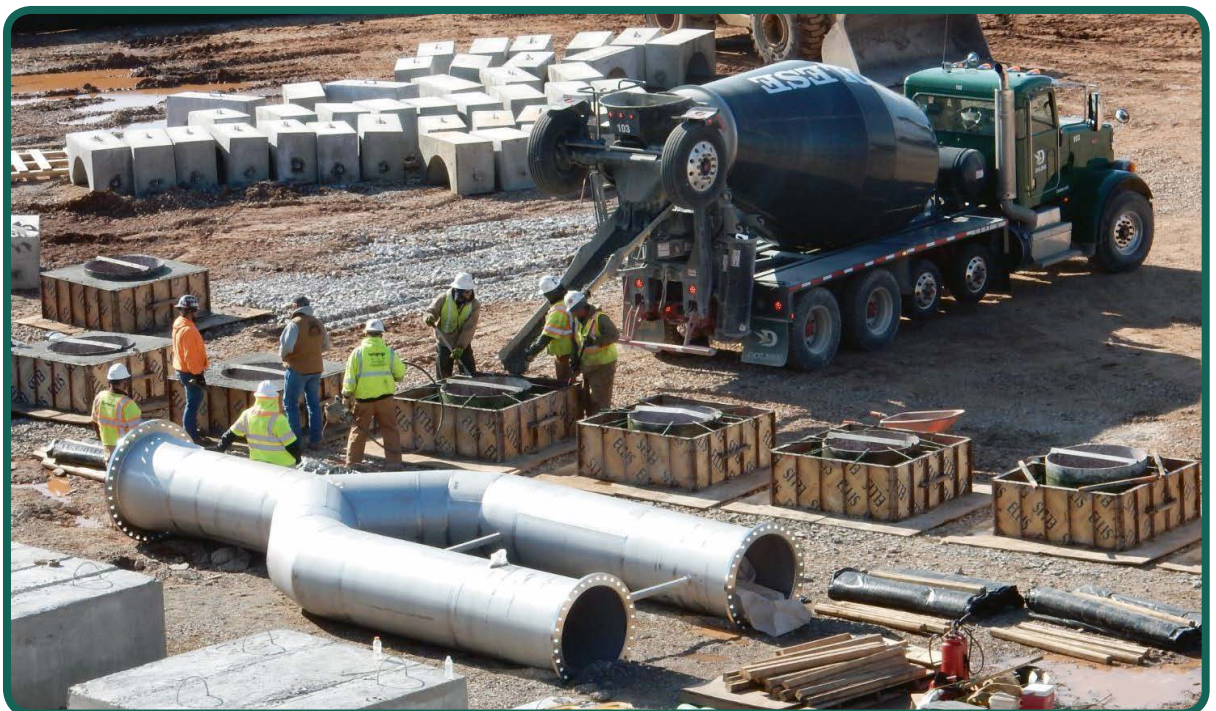
additional 25,000 acre-feet during drought conditions. This project also improved the district's intake gates to reduce entry of debris and protect fish. This project has been in use for one water season and has been working well.

Drying out the dredged sediment in the confined material dredge storage area.



Dave Taylor, Manager of the Waurika Master Conservancy District in Oklahoma, said: “This project is crucial to the long-term longevity of Waurika Lake. We now have a water supply that is sustainable and available through all phases of the worst drought of record. Over 25,000 acre-feet of the lake is now accessible and can be used as water supply. We appreciate the help from Reclamation and their staff through the conceptual and design phases. We can now achieve the vision of having water for a quarter of a million people through all phases of the drought and wet cycle.”

Assembling equipment: pipe weights to place every 25 feet along the HDPE line to keep the pipe resting along the bottom of the lake and a wye structure to connect the 4,000-foot intake pipe to the floating intake.





Assembling the five 800-foot-long section of 42-inch HDPE pipe that were combined in the lake intake channel.



Transporting, connecting, and anchoring the 30 million gallon per day floating intake buoy into final position.



Lowering the pipe onto the bottom of the Waurika Lake underwater intake channel.

Contact:

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dmayhorn@usbr.gov

Connections

There are many other Federal, state, and local opportunities for grants and partnerships—contact your local Reclamation Area Office (see www.usbr.gov/main/offices.html). Here are a few Region-specific examples of funding partnerships with Reclamation.

Water Conservation Field Program

The Water Conservation Field Services Program (WCFSF) provides financial and technical assistance to irrigation districts and other recipients of Reclamation's water for water conservation activities. Reclamation provides assistance to develop water conservation plans and design of water management improvements, identify water management improvements through System Optimization Reviews, and demonstrate water conservation techniques.

Contact your local Reclamation Area Office to work with this program.



Constructing a long crested weir.



Installing an Automated Meter Reading Device.

CalFed Water Use Efficiency Grants

CalFed is a Federal/California program to restore the California Bay-Delta to meet a variety of purposes. Funded activities include improving fish passage for threatened and endangered species, improving water quality, increasing water reliability for cities and farms below the Bay-Delta, and increasing water efficiency (agricultural and municipal and industrial).

In 2017, two California projects received \$1.5 million total in CALFED Water Use Efficiency grants for fiscal year 2017. Combined with local cost-share contributions, these projects are expected to implement roughly \$6.9 million in water management improvements during the next 24 months. The projects will conserve an estimated 733 acre-feet per year of water, contributing to the CALFED Bay-Delta Program objectives of improving ecosystem health, water supply reliability and water quality. California and Federal agencies are partners in the 30-year program (2000-2030). Reclamation made the selection through a competitive process, giving priority consideration to projects that address CALFED goals on a statewide basis.

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A similar Funding Opportunity Announcement will be posted on Grants.gov in December 2017 for Fiscal Year 2018, with a deadline in mid-March. Request up to \$750,000, with at least a 50% cost share for the amount of Federal funding. The FOA will include application instructions. Check on www.grants.gov or contact us for more information.

Contact:

David White, Water Conservation Specialist
916-978-5208 (TTY 800-877-8339)
dwhite@usbr.gov



Lining a canal.

Science and Technology Program

Within Reclamation's Research and Development Office, the Science and Technology (S&T) Program advances Reclamation's technical abilities to manage, develop, and protect water and related resources in an environmentally and economically sound manner. The S&T Program address the full range of technical issue confronting Reclamation's water and power managers and our project stakeholders through innovative development, applied, and demonstration research. Research is supported in five research areas including: Water Infrastructure, Power and Energy, Water Operations and Planning, Developing New Supplies, and Environmental Issues for Water Delivery and Management.

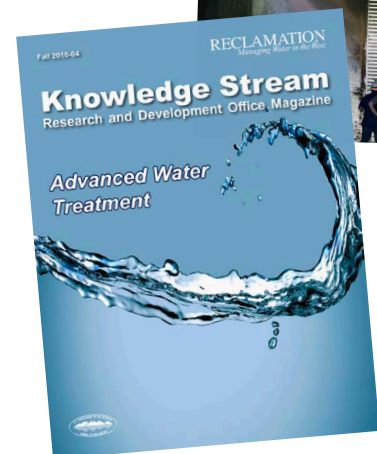
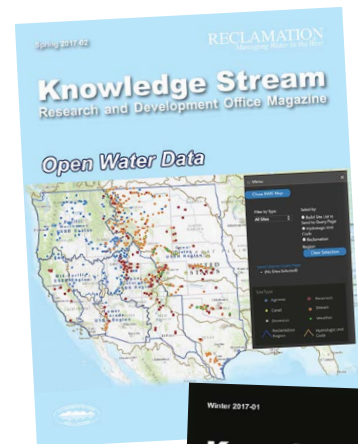
Within the water infrastructure area, research categories include: dams, canals, pipelines and miscellaneous water infrastructure. Research needs within each category are published each spring along with a call for proposals. During the call for proposals, between April and June each year, Reclamation employees can submit proposals and compete for funding for research projects.

In FY18, some of our research projects in Water Infrastructure are funding topics such as canal seepage and condition assessment, corrosion control, safe underwater assessments, concrete repair and leakage reduction technologies, coating alternatives, and exploring the use of unmanned aerial systems (UAS) for a variety of applications.

The S&T Program is extremely interested in partnerships and leveraging funds to jointly solve problems with our partners. Please reach out to your local Reclamation point of contact or the S&T Program directly with your research project ideas. For additional information about the S&T Program, please visit www.usbr.gov/research/st/index.html.

For more information contact:

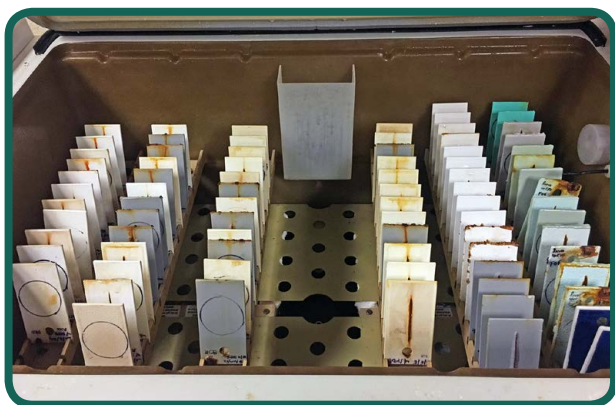
Research and Development Office
303-445-2125
research@usbr.gov



Read the Knowledge Stream at
www.usbr.gov/research/ks.html.



Our cathodic disbondment test to test coatings on a pipe in conjunction with cathodic protection.



Our cyclic testing to test the coatings by cycling them through humid and dry conditions.



Our newly acquired dust collector that will enable us to go out in the field and complete small coatings jobs.

Contact:

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Materials Engineer
Materials and Corrosion Lab
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Connections *(continued)*

Coatings and Corrosion Resources

Reclamation's Technical Service Center's Materials and Corrosion Lab (MCL) is engaged in cutting edge research that may help your bottom line. MCL's scientists and engineers provide a wide range of services including: troubleshooting construction problems, specification preparation and review, material submittal approvals, onsite inspection of field services, and expertise in state-of-the-art construction materials and practices. Many of our staff hold advanced degrees, professional engineer registrations, and certifications from various professional societies including National Association of Corrosion Engineers (NACE) and the Society for Protective Coatings (SSPC).



Our new, state-of-the-art paint booth where we spray the coatings that we test.

Have a corrosion problem? The MCL can provide consultation to help you find the right coating or cathodic protection system. We can also provide mussel-proof coatings, failure analysis of coatings, corrosivity testing, accelerated laboratory testing, analyzing and disposing of hazardous materials, and quality assurance testing and support for polymeric materials and geosynthetics. In addition, the MCL offers training, including webinars and classes like the Coatings and Corrosion School in which participants will become familiarized with the issues related to corrosion of metals and corrosion protection. These courses and gained insights can save your water districts money by helping you to identify and prevent problems early on.

To learn more about the capabilities of the MCL or to inquire about partnering with them on future research projects feel free to reach out to us.

Ensure Your Operating Budget Stays Healthy

Seek financial assistance.

Find local, State, and Federal programs that will help you with particular projects. This issue lists Reclamation's funding opportunities—work with your local Reclamation Area Office.

Partner. Can you work with your State, local community, schools, or others to achieve common goals?



Focus on your priorities.
What is critical to delivering water and maintaining your facilities?
What are your short and long term goals?

Reexamine. Check your budget and funding sources monthly and completely redevelop your budgets yearly.

Check your rates. Do you have sustainable rates that can keep up with maintenance, provide the needed improvements, and keep a healthy emergency reserve?

Succeeding with Financial Assistance



Search for funding opportunities that match your mission and projects. Check local and state websites. All Federal opportunities will be posted on Grants.gov.



Select funding opportunities that align with your objectives. You may wish to adjust your project to better meet the objectives of the funding opportunity.

When you find a match, begin the application process.



Submit your application. Complete any mandatory forms, and the application package. Make sure that you have met any special registration requirements well in advance of the deadline.



Prepare your proposal. Read instructions carefully. Get information—for example, Reclamation experts can help you determine cultural and environmental requirements.

Clearly demonstrate, with evidence, how your project meets the evaluation criteria.



If your project is accepted, the awarding agency will work with you on pre-award requirements.



Begin work on the project.

The agency will set up a reporting process and requirements for onsite visits, etc. Provide interim reports for both the finances and the work accomplished.



Once your project is complete, **prepare and submit** final reports, demonstrating all the good work you did.